INFLUENTIAL EFFECTS BETWEEN POSITIVE HR PRACTICES AND EMPLOYEE PERFORMANCE – MEDIATING MODERATING EFFECTS BASED ON WORK ENGAGEMENT

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Abstract. The development of the knowledge economy society has made enterprises pay more attention to the subjectivity and initiative of "people" in their human resource management practices, and the performance of employees is related to their level of work engagement. Therefore, this study is based on the impact of positive human resource practices on employee performance, and analyzes the mediating effect of work engagement through experimental data processing, scale design, and hypothesis testing. The results showed that: a) There is a significant positive correlation between positive human resource practices and employee performance, and the regression coefficients corresponding to work performance and relationship performance are both above 0.35 and 0.40. b) There is a significant correlation between positive human resource practices and work performance, and a significant correlation between positive human resource practices and work engagement. c) Work engagement plays a mediating role between positive human resource practices and work performance. Mastering the mediating effect of work engagement can effectively provide management insights for enterprises to promote human resource practices.

Key words: Human resources; Performance; Work input; Mediating moderating role; Principal component analysis

1. Introduction. With the emergence of the knowledge-based economy, the importance of human capital in the organization of resources has grown, and the competition between businesses is now more focused on the competition for talent among businesses rather than a single material or resource. Strengthening the management of talent can significantly improve the growth and overall success of the company [1] as it is a resource with development and potential. Positive human resource practices (PHRPs) convey a positive emotional commitment to employees, which in turn increases motivation and creates better performance, by focusing on the activities that generate social support for employees and by analyzing performance behaviour [2]. Differences in language and cultural connotations make the dimensions of positive human resource (HR) practices different in China and abroad. But they are largely the same, with the domestic HR practices focusing more on collectivism, i.e. the individual will be in the expectation of the organization and the leader while building themselves up with a greater focus on consistency of perception and appropriateness of care [3]. The performance of employees is, to a certain extent, an effective reflection of their ability and attitude to work, and good or bad HR practices can make employees judge their own value and ability to work [4]. Examining the variables that affect how to appropriately direct the positive guiding influence of HR practices on employees, and how to successfully bring into play and stimulate their work potential and motivation, is of considerable practical significance and theoretical worth. The goal of this study is to improve HR practices by analyzing the impact of good HR practices on employee performance and investigating the mediating function of work engagement elements in this process. The study provides a literature review of the current research on HR practices and employee performance, analyzes the mediating effect mechanism proposed by the study through scale design, hypothesis testing and analysis of empirical results in Part II and Part III, and concludes the full text in Part IV.

2. Literature review. PHRP refers to a series of strategies and procedures developed and implemented by a company, aiming at improving employee satisfaction, job performance, and organizational efficiency. The practical content includes establishing an efficient and fair recruitment system, providing continuous training and career development opportunities for new and existing employees (including job training, career planning,

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leadership development, and lifelong learning plans), a fair performance evaluation system, organizational structure, and work environment [5]. In practice, there are several dimensions of positive HR. Many scholars believed that they include performance incentives, career development prospects and equity and justice, etc. The content of different dimensions and the needs of employees are different, but they all consider new ways of HR or aspects that need to be improved from the perspective of employees' immediate interests. Using sample analysis and the job demand-resource model, Cooke F. L. examined the connections between high-performing organizational structures and worker resilience and engagement. The results showed that high performance work systems were effective in positively influencing employees' psychological resilience and engagement and in stimulating resilience [6].

Tambe P scholars analyzed and responded to the management decision problems arising from data science and technology in HR management, which provided a reference for improving the economy and effectiveness of data information management [7]. Self-efficacy positively affects each person's ability to execute their job, and research from the field by academics like Carter W. R. has shown that this relationship should be taken into account when studying job performance [8, 9].

Bender S found that human capital reduced the association between productivity and management practices [10]. Using a mediation approach, Malik P connected learning organizations to employee resilience and work engagement. The empirical findings indicated that learning organizations were beneficial for employee resilience and job engagement and this effect was mediating and moderating [11]. Based on questionnaire results, Amor A. M. academics examined the relationship between transformative leadership and work engagement and discovered that structural empowerment had a strong mediation effect [12]. The results of Nieves J's analysis of the mediating role of human capital in HR and innovation supports his theory, however it is more challenging to sustain a better enhancing effect in actual practice [13, 14].

Aburumman O explored whether career satisfaction plays a mediating role. Results and empirical tests showed that the reasonableness of pay systems, performance legitimacy of assessment and employees' propensity to leave had a negative impact on each other, and career satisfaction had a high mediating effect. Therefore, companies should strengthen the effectiveness of their HR management [15].

Salas-Vallina et al. analyzed the relationship between welfare oriented HR management and performance in a sample experiment based on the job demand resource model and social exchange theory, and conducted a moderating mechanism analysis on the leadership of middle-level managers. The results indicated that attractive leadership behavior could effectively promote the development of HR management and have a positive impact on employee performance [16].

To enrich the content of green HR management practices, Mousa S K et al. analyzed the impact mechanism of management practices on the sustainable performance of healthcare organizations. The results showed that positive management practices could effectively promote the improvement of organizational performance levels [17].

Darmawan D et al. used regression analysis tools to explore the impact of HR quality on work performance and employee loyalty. The results showed that HR quality had a positive impact on work performance and employee loyalty [18].

Sabuhari R et al. investigated the indirect impact of HR flexibility on employee performance, as well as the mediating effects of organizational culture adaptability and job satisfaction on employee performance. Research has found that HR flexibility, employee abilities, and job satisfaction had a significant impact on employee performance, with job satisfaction partially moderating the impact of employee abilities on employee performance [27].

Based on social exchange and organizational support theory, Aboramadan M et al. used structural equation modeling to explore the impact of green HR management on the green work related outcomes of non-profit organization employees. The results indicated a positive correlation between global HR management and green work, and green organization support exhibited a significant mediating effect between the above connections [20].

Engelsberger et al. used dynamic capability theory to study the role of strategic HR management in supporting the open innovation performance of employees in four American multinational technology companies, and analyzed the mediating role of open innovation mentality. The results confirmed that an open information management mindset played a mediating role between HR management and open information management

performance [21].

Xu Y et al. analyzed the relationship between decent work and comprehensive work capacity building using structural equation modeling. The results showed that decent work promoted comprehensive work capacity building by increasing work participation, and intrinsic motivation and work self-efficacy had a positive mediating effect on the relationship between the two [22].

Based on the job demand resource model, the study used structural equation modeling to re-examine the role of work engagement in innovative work behavior, as well as the mediating role between antecedent variables such as interpersonal conflict and perceived organizational support. The research results indicated that there was a positive correlation between public works budget, workplace, personal wealth, personal wealth, and innovative work behavior, and there was a negative correlation between interpersonal conflict and innovative work behavior [23].

Susanto PC et al. conducted a literature regression analysis on the relationship between employee engagement and turnover rate in HR management research, and found that a clear focus on employee engagement could improve their coaching and transformational leadership abilities [24].

Tan K L et al. analyzed the relationship between work and job burnout, as well as the mediating effect of work engagement according to resource conservation theory and job demand resource theory, using questionnaire surveys and partial least squares structural equation models. The results indicated that work engagement had a moderating effect on the relationship between meaningful work and all dimensions of job burnout [25]. The development of social economy and the transformation of family structure have made the contradiction between work and family increasingly prominent. Lyu X et al. explored and analyzed the participation of women in the work environment under the dual role pressure. The results indicated that there was no significant difference between males and females in terms of work family conflict (work interfering with family and family interfering with work), and work design helped to reduce the impact of family on the work of female employees [26].

Darban G et al. conducted a survey and analysis of 182 respondents, examining the mediating effect of work engagement as a mediator between green HR management, absenteeism, and green recovery performance. The results showed that WENG could alleviate absenteeism, and employees' liking for cognitive assessment could improve their emotional response to work and enhance their performance response [27].

The above results suggest that positive and active management of resource practices led employees to increase their sense of organizational commitment and job satisfaction, and different forms of leadership organization and resource deployment had different degrees of impact on employees' happiness, followership and propensity to leave. The study relies on this to empirically investigate the association between effective HR practices and employee performance because there is no research that specifically tackles the mechanisms by which job commitment is influenced in employee performance.

3. Experimental protocol design for the link between PHRPs and employee performance. The study was carried out by examining the mechanisms by which effective HR practices affect employee performance. The data were processed using sample scale data to create the final scale instrument, and a protocol design and hypothesis testing were then developed based on the scale experimental instrument.

3.1. Analysis of the influence mechanism between PHRPs, employee performance and work engagement. The earliest definitions of work engagement focus on the extent to which an individual's work performance has an impact on the realisation of self-worth and how much an individual is willing to invest in their work on a psychological level. A positive mindset induces employees to invest more in their work, and positive feedback on work engagement reinforces employees' recognition of their work. The dimensions of work engagement include physical, emotional and cognitive dimensions, and by extension, concentration and commitment. Work engagement includes antecedent and outcome variables. The antecedent variables include both individual and organizational dimensions, with differences in the characteristics of each dimension, such as age, family situation. Different temperaments and personality traits can also influence how people approach their work and how enthusiastic they are about it. For instance, there is a link between extraversion and high levels of work engagement. Figure 3.1 shows a diagram of the dimensions of work engagement.

PHRPs include participation in decision-making, fair compensation and growth opportunities. The better the training process and system, and the more generous the benefits, the more likely employees are to be satisfied with their work, which in turn increases their probability and likelihood of commitment to their work [28]. This
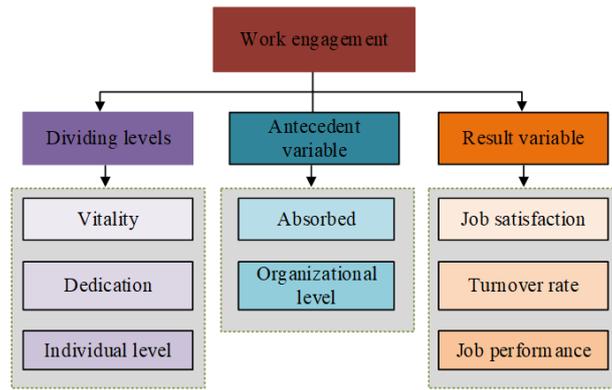
Fig. 3.1: Schematic diagram of the impact dimensions of work engagement

is evidenced by the fact that a significant increase in job performance and income will positively confirm the employee's recognition of their job. The study uses principal component analysis (PCA) to analyze the scale data to ensure that the indicators selected are objective. PCA is the process of reducing the dimensionality of the indicators involved in the scale, which satisfies equation (1). The study analyzes the relationship between PHRPs and employee performance, and selects three scales for important dimensional feature extraction. PCA can transform multiple variables into a few comprehensive indicators based on data characteristics, simplify the model, and reduce computational complexity, avoiding the interference and influence of redundant information and noise [29]. PCA removes redundant information by extracting principal components, grasps the correlation between different variables, and makes the data structure clearer, which is very helpful for understanding the relationships between variables and conducting regression analysis. When exploring the mediating effect of work engagement, PCA can help simplify the model structure, clearly identify and quantify the impact of each principal component on mediating variables, provide data support for in-depth analysis of mediating effects, and ensure the accuracy and reliability of the research. PCA, as a statistical method, simplifies the complexity of the dataset through dimensionality reduction techniques. Before conducting PCA, it is necessary to ensure that there is a linear relationship between variables in the data, there are a large number of observed sample values, and abnormal data values need to be addressed and standardized uniformly to ensure they are on the same measurement scale.

$$Y = \begin{bmatrix} u_{11} & \dots & u_{m1} \\ \dots & \dots & \dots \\ u_{1p} & \dots & u_{mp} \end{bmatrix} \begin{bmatrix} X_1 \\ \dots \\ X_p \end{bmatrix} = AX \tag{3.1}$$

In equation 3.1, p is the dimension. X_p is the indicator. Y is the linearly transformed composite variable of X that is uncorrelated with the indicator. m is the number of composite variables, and X_p is the coefficient of each principal component. The PCA constructs a data matrix by standardizing the raw data, and then determines the characteristic roots and variance contributions by calculating the characteristic equations of the matrix. Equation 3.2 is the correlation coefficient matrix.

$$R = [r_{mp}]p_x p = \frac{Z^T Z}{n - 1} \tag{3.2}$$

In equation 3.2, r_{mp} indicates the correlation coefficient of the original variable. R is the correlation coefficient matrix. Z is the standardized data matrix, and n is the sample size. In the study, the objective objects are also weighed with the help of information entropy and the importance of the scale indicator data was achieved,

which is calculated as shown in equation 3.3.

$$H(x) = -\sum_{i=1}^{f} q(x_i)\ln q(x_i) \qquad (3.3)$$

In equation 3.3, x_i represents the indicator and q represents the weight of the indicator. It is assumed that there exists a total of d, f for the investigators and indicators. Entropy method refers to a mathematical method used to determine the degree of dispersion of a certain indicator. The greater the degree of dispersion of the indicator, the greater its impact on comprehensive indicators. The probability calculation value based on entropy function can be expressed as the logarithmic result of the probability of a random variable's value under the total number. On the basis of in-depth analysis of the definition, results, and impact mechanisms of variables, this study explores the dimensions that affect employee job performance, the impact of PHRPs on employee work engagement and performance, and how work engagement plays a mediating role.

The matrix variables were subsequently rotated orthogonally during the study to measure the correlation between the variables. The covariance matrix between the transformed principal components and the original variables is shown in equation 3.4.

$$\overset{\wedge}{\sum_{x,y}} = \sum xAQ \qquad (3.4)$$

In equation 3.4, A represents the eigenvectors of the original vector x. Q is the unit orthogonal matrix, and y is the principal component.

3.2. Experimental programme design. Through scale design and empirical analysis, the study was done to further validate the link between HR practices, employee performance, and mediating effects. The study first used a small-scale sample to analyze the reliability and validity of the questionnaire. The designed questionnaire included three variables and eight dimensions of questions: PHRP, work engagement, and work performance, and it was evaluated using a five level scale. The content of the relevant dimensions of the three scales is shown in Table 3.1.

PHRPs have their own key elements and implementation strategies in the three dimensions of fair rewards and punishments, participatory decision-making, and growth opportunities. The performance appraisal system should be directly related to employee rewards and punishments. Employees with excellent performance should receive reasonable rewards, such as promotions, salary increases, or bonuses, while underperforming employees may face training, coaching, or other improvement measures. The reward and punishment measures must match the actual performance of the employees. It is crucial to ensure that the performance evaluation process is open and transparent, and that employees are satisfied with the evaluation process, including the fairness of evaluation standards, the appropriateness of evaluation methods, and the accuracy of evaluation results. At the same time, performance results should be based on objective standards, avoiding biases and preferences, and ensuring that each employee's efforts and achievements are fairly evaluated [30]. In addition to material rewards, positive feedback and recognition are also important motivational means. Timely and positive feedback can improve employee job satisfaction and motivation. Employees should receive sufficient information in the decision-making process so that they can effectively participate in discussions and negotiations, including transparent sharing of company strategies, policy changes, etc. This will positively give employees a great sense of participation and ownership, while encouraging them to participate in discussions related to their work. This not only improves the quality of decision-making, but also enhances their sense of participation and belonging [31]. A safe and free speech environment allows employees to fully express their opinions, which will positively enhance their recognition of the company. In the career process, providing training opportunities that align with employees' career development goals and current job requirements, including skill enhancement, career planning, and personal development plans, can effectively provide employees with opportunities for growth and development. Emphasizing the individual development space of employees and providing support for their growth paths, a fair, transparent, and conducive work environment can help improve employee satisfaction and loyalty, and significantly enhance the overall performance and competitiveness of the organization.

Table 3.1: Dimensional hierarchy meaning of three types of scales

Scale	Variable dimension		Measurement dimension
Positive human resources practice	Fair rewards and punishments	A	Rewards and punishments corresponding to performance evaluation
		B	Satisfaction with the performance evaluation process
		C	Fairness of performance results
		D	Reasonable positive result feedback
	Participatory decision making	A	Early notification of negotiations
		B	Participate in problem discussions
		C	Freedom and feasibility of expression
	Growth opportunities	A	Rich training process
		B	Suitability of training
		C	Channels for reasonable promotion
		D	The spatial nature of individual talent development
Work performance	Task performance	A	Contribution to work
		B	Timeliness of work completion
		C	Maximum satisfaction with one's own abilities
		D	Leadership satisfaction with work
	Contextual performance	A	Affirmation of colleagues' abilities
		B	Solving Colleague Difficulties
		C	Communication in work
		D	Positive communication of work intentions and opinions
		E	Relative fairness in work interaction
		F	Respect the differences of colleagues
Work involvement	Validity	A	Motivation of work
		B	Work enthusiasm
		C	Overcoming work difficulties
		D	Continuity of working hours
		E	The energy of work
	Dedication	A	The value of work
		B	Recognition of work
		C	Work satisfaction
		D	Positive affirmation of work
	Attraction	A	Neglectiveness of work time
		B	Uniqueness of work
		C	Favorability of work

The work performance scale can be explained from two aspects: task execution and relationship performance. Task execution mainly focuses on the individual's performance in completing job responsibilities, including evaluating the degree of contribution of employees to project or team goals, examining the efficiency and timeliness of employees completing tasks, and the degree of utilization of their own skills and abilities. Relationship performance focuses more on how employees interact with others within the team and organization, and how this interaction affects the work environment and team dynamics [32]. Leadership's satisfaction with work, recognition of colleagues' abilities, problem-solving skills, communication skills, fair and just treatment of each colleague, and respect for differences in background and perspectives among colleagues, the above contents work together to improve the overall efficiency of employees, enhance team collaboration, promote a positive work environment, and thus enhance the overall performance of the organization. The work participation scale is an important indicator to measure the level of employee participation and engagement in work, usually including three dimensions: vitality, dedication, and attractiveness. Each dimension has a significant impact on the overall work performance of employees and the health of the organization. Work validity includes the persistence of employees in their work, including intrinsic drive, work enthusiasm, ability to solve difficulties, and focus. Dedication reflects the emotional investment and sense of identification of employees in their work, including their understanding of the importance and value of work, as well as their satisfaction with the work environment, conditions, and content. Attraction refers to the degree to which a job attracts employees, which affects their loyalty and long-term engagement in the job. High levels of job engagement are usually associated
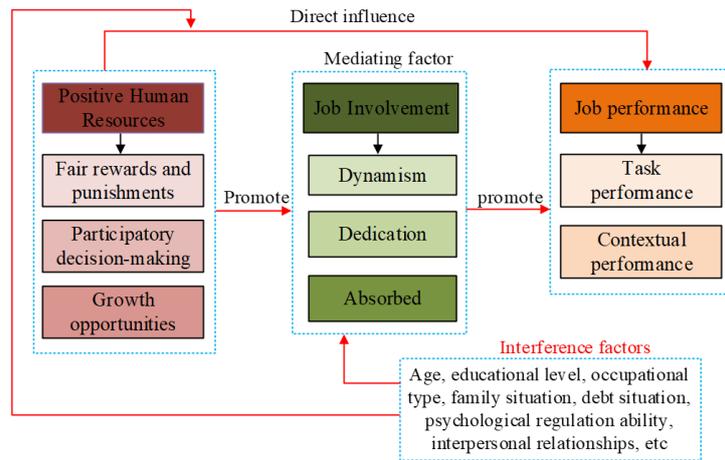
Fig. 3.2: Schematic diagram of internal mechanism relationship

with higher job satisfaction, lower employee turnover rates, and higher job performance. PHRP is the process by which an organization develops and implements policies that address the individual needs and development of its employees. Employee performance and job content are significantly impacted by management effectiveness, which also helps to promote employee loyalty to the company, lower turnover rates, and successful long-term personal development. Employees therefore place greater emphasis on performance appraisal, training and promotion under the scale dimension, as well as on their sense of autonomy and the growth of their personal talents. Communication is key to the success of positive HR. Leaders use good communication to build trust and transparency between themselves and their employees, so that employees feel that their work is taken seriously [33]. It can be said that there is a certain backward and forward linkage and influence effect between HR practices, work performance and work commitment, and grasping this effect can effectively provide reference value for enterprise development and personal growth. The purpose of the study is to use questionnaire results and statistical analysis to understand how PHRPs affect employee performance, and to reveal its underlying mechanisms, including the impact of work engagement on PHRPs and employee performance, as well as related mediating effects. At the same time, based on literature review and empirical results, it aims to provide better guidance and suggestions for enterprise managers and HRs professionals in formulating and implementing HRs strategies, promote enterprise development, and apply HRs practices to improve overall employee performance and drive organizational goals in a timely manner. Figure 3.2 is a schematic diagram of the internal mechanism relationship of the research content.

In this graph, work engagement is mainly a mediating factor, manifested in three aspects: validity, dedication, and abstraction. Positive work engagement can promote PHRP development and also enhance employee performance capabilities. Age, educational level, occupational type, family situation, debt situation, psychological regulation ability, interpersonal relationships, and other factors can all affect the degree of work engagement. PHRPs mean that the overall management ability of the enterprise has been improved, which has a positive promoting effect on employee performance. The study collected raw data through online surveys, distributed a total of 350 questionnaires, collected 350, and had 338 valid questionnaires.

The study focused on the employees of some foreign trade enterprises in Shanghai, China, and collected data on their basic information. Subsequently, they were invited to participate in the experimental design using the three scales designed for the study. The determination of sample size is influenced by various factors, including research design, survey objectives, population size, expected confidence levels and confidence intervals, data availability, budget and time constraints, etc. Considering the issues of this study, the ratio of sample size to population size in the research design was 1:1.2, and the confidence interval of the questionnaire results was designed to be 95%. To ensure the comprehensiveness and randomness of the questionnaire distribution, this

Table 4.1: Reliability test results

Scale	Total coefficient	Variable dimension	coefficient
Positive human resources practice	0.885	Fair rewards and punishments	0.837
		Decision participation	0.749
		Growth opportunities	0.891
Work performance	0.943	Task performance	0.852
		Relationship performance	0.917
Work involvement	0.936	Vitality	0.863
		Dedication	0.942
		Abstraction	0.851

study conducted a survey using random sampling among selected foreign trade enterprises. A random number list is generated using an online random number generator to randomly select sample units and determine the research subjects to participate in the experiment. And it distributed the scale in paper form and online form such as Questionnaire Star. And when randomly generating data, it needed to ensure that the selection range and number of people are relatively large, and have a high correlation with the dimensions of the scale design as much as possible, and try to avoid invalid questionnaires, not limited to a single social group [34]. It collected data and information on their basic information, and collated and analyzed the data with three scales designed by the study. Statistical analysis, correlation analysis and regression test analysis on the variables were carried out with the software SPSS22.0, and three hypotheses were put forward:

- H0: There is a positive correlation between fair rewards and punishments, decision-making participation, growth opportunities, and work performance in PHRPs.
- H1: There is a positive correlation between PHRPs and work engagement.
- H2: Work engagement is a mediating variable between PHRPs and work performance.
- H3a: Vitality plays a mediating role in the relationship between PHRPs and work performance.
- H3a: Vitality plays a mediating role in the relationship between PHRPs and work performance.
- H3b: Dedication plays a mediating role in the relationship between PHRPs and work performance.
- H3c: Focusing on mediating the relationship between PHRPs and work performance.

4. Analysis of the empirical results. The Conbach's α coefficient was utilized as an assessment indicator, and the study started with the aid of a reliability test of the three suggested scales to confirm the validity of the data measurement results. If this coefficient was between 0.6 and 0.8, it needed to be reviewed and improved. A result of 0.8 or higher indicated good reliability. Tables 4.1 and 4.2 present the findings.

In Table 4.1, the reliability values of the three scales were all above 0.8, among which the Conbach's α coefficients for positive HR practices, work performance and work engagement were 0.885, 0.943, and 0.936, respectively, and the corresponding meaning contents also showed good reliability, except for decision making participation under resource practices which needs to be corrected. The Conbach's α coefficients of the other sub-dimensions were the KMO index, which is an important indicator of factor analysis, had a value between 0.7 and 0.9, indicating good validity, and if the Bartlett's sphericity test results were highly significant, then the scale was suitable for regression analysis. Table 4.2 displays the validity test's outcomes.

In Table 4.2, the KMO indices for the three scales were 0.867, 0.928 and 0.939, respectively, with good overall validity. The Bartlett's sphericity test results (all significant at 0.000) qualified as independent hypothesis tests. The analysis of the exploratory factors in Table 3 revealed that the factors of the corresponding scales all had eigenvalues above 1 after orthogonal rotation, and the cumulative contribution of the variable components in PHRPs, work performance and work engagement were 26.924%, 53.010%, 69.564%, 26.126%, 51.784%, 35.678%, 55.727% and 73.446%, respectively. The descriptive statistics presented by the three variable dimensions were then analyzed to obtain Table 4.3.

In Table 4.3, fair rewards and punishments had a high mean value (3.4756) in current PHRPs, followed by opportunities for growth. Relationship performance and validity were more important on the Work Performance and Work Engagement scales, with mean values of 4.0966 and 3.5076, respectively. These results suggested that companies are now more concerned with fairness, with better reward and punishment systems and space

Table 4.2: Validity test results

Scale	Validity		
Positive human resources practice	Kaiser Meyer Olkin metric for sampling adequacy		0.867
	Bartlett test	Approximate chi square	1323.032
		Df	55
		Sig.	0.000
	Characteristic explanatory variable		
	Variable components	Extract sum of squares load	
		% of variance	Accumulated%
	1 (2.961)	26.924	26.924
	2 (2.864)	26.071	53.010
	3 (1.821)	16.539	69.564
Work performance	Validity		
	Kaiser Meyer Olkin metric for sampling adequacy		0.928
	Bartlett test	Approximate chi square	3173.687
		Df	170
		Sig.	0.000
	Characteristic explanatory variable		
	Variable components	Extract sum of squares load	
		% of variance	Accumulated%
	1 (4.961)	26.126	26.126
	2 (4.867)	25.672	51.784
Work involvement	Validity		
	Kaiser Meyer Olkin metric for sampling adequacy		0.939
	Bartlett test	Approximate chi square	2781.891
		Df	105
		Sig.	0.000
	Characteristic explanatory variable		
	Variable components	Extract sum of squares load	
		% of variance	Accumulated%
	1 (5.354)	35.678	35.678
	2 (3.012)	20.091	55.727
	3 (2.649)	17.662	73.446

Table 4.3: Descriptive statistical results of scale variable dimensions

Scale	Variable dimension	M±Mean	Std.
Positive human resources practice	Fair rewards and punishments	228±3.475	0.895
	Decision participation	228±3.064	0.947
	Growth opportunities	228±3.443	0.961
Work performance	Task performance	228±3.785	0.761
	Relationship performance	228±4.096	0.704
Work involvement	Vitality	228±3.506	0.884
	Dedication	228±3.393	1.002
	Abstraction	228±3.493	0.851

for growth prospects. Employees are more concerned about maintaining workplace relationships and their own mental state, and having good interpersonal relationships is still a more important concern in the corporate workplace [35, 36, 37]. Table 5 displays the findings from the one-way ANOVA analysis of the prior differences between the demographic factors and the research variables.

In Table 4.4, there is no correlation between the demographic variables and the study variables. But given the reality of the situation where there is some influence of the demographic variables, the study used this statistical variable factor as a control variable. The Pearson correlation analysis between the three scales of the study was then investigated and the results are shown in Table 4.5.

In Table 4.5, all dimensions between positive HRs and work engagement and work performance showed good correlations and all were significantly positive at the 0.01 statistical level (P<0.01). The relationship between the variables was then tested with the help of regression analysis, which enables a quantitative analysis of the

Table 4.4: Differences analysis results of variables

Statistical variables		Fair rewards and punish- ments	Participa- tory decision making	Growth opportu- nities	Validity	Dedica- tion	Abstrac- tion	Task perfor- mance	Relation- ship perfor- mance
Gender	F	5.472	10.294	6.214	6.114	0.385	6.208	4.032	1.598
	Sig.	0.474	0.352	0.336	0.337	1.393	0.336	4.871	0.579
Age	F	1.178	2.136	0.579	2.507	0.664	0.689	0.332	0.387
	Sig.	0.538	0.485	1.366	0.435	2.978	1.055	2.776	1.328
Education	F	1.248	1.469	0.705	1.770	0.354	2.793	0.367	0.724
	Sig.	3.155	0.654	5.830	0.539	3.072	0.383	1.101	0.623
Job content	F	0.359	2.649	0.401	3.31	0.364	1.913	0.826	2.396
	Sig.	0.586	0.395	0.421	0.352	2.627	0.512	4.699	0.424
Title	F	1.171	2.433	1.579	0.396	0.398	1.936	0.395	1.052
	Sig.	1.468	0.42	0.503	2.897	2.282	0.507	2.753	0.854
Working hours	F	0.651	1.619	1.228	0.375	0.441	1.436	0.386	0.947
	Sig.	1.467	0.596	6.214	0.692	1.289	6.208	0.545	0.919
Unit Dependency Quality	F	0.651	0.594	0.336	1.094	0.723	0.336	1.199	1.598
	Sig.	5.472	1.164	0.579	6.114	0.385	0.689	4.032	0.579

Table 4.5: Correlation analysis between PHRPs, work engagement, and work performance

Positive human resource practice and work engagement						
Variable	Fair rewards and punish- ments	Decision par- ticipation	Growth op- portunities	Vitality	Dedication	Abstraction
Fair rewards and punishments	1	-	-	-	-	-
Decision participation	0.575**	1	-	-	-	-
Growth opportunities	0.571**	0.573**	1	-	-	-
Vitality	0.495**	0.571**	0.608**	1	-	-
Dedication	0.516**	0.513**	0.632**	0.794**	1	-
Abstraction	0.487**	0.405**	0.567**	0.736**	0.836**	1
Positive human resource practice and job performance						
Variable	Fair rewards and punish- ments	Decision par- ticipation	Growth op- portunities	Task perfor- mance	Relationship performance	
Fair rewards and punishments	1	-	-	-	-	
Decision participation	0.575**	1	-	-	-	
Growth opportunities	0.571**	0.573**	1	-	-	
Task performance	0.319**	0.342**	0.432**	1	-	
Relationship performance	0.465**	0.371**	0.467**	0.643**	1	

dependencies between the variables, and a hypothesis study was conducted with regression analysis, the results of which are shown in Table 4.6.

In Table 4.6, there were significant positive correlations between the dimensions of PHRPs and work engagement and performance, with regression coefficients of 0.657, 0.591, and 0.721 for the three dimensions of vitality and HR practices, coefficient values of 0.614, 0.615, and 0.751 for the three dimensions of dedication and resource practices, coefficient values of 0.588, 0.612, and 0.674 for the three dimensions of focus and resource practices, and Hypotheses 1 and 2 hold. The results of the correlation and regression tests between work engagement and work performance were analyzed and the results are presented in Tables 4.7 and 4.8.

In Table 4.7, there was a positive correlation between the dimensions of work engagement and work performance (P<0.05), and the largest correlation value was reached between focus and relationship performance (0.517). The regression results for both were analyzed and the results are shown in Table 4.7.

The regression analysis revealed a significant positive relationship between the dimensions of work engagement and job performance, with regression coefficients of 0.469, 0.466, 0.536, 0.562, 0.521, and 0.567 for the

Table 4.6: Regression analysis results between positive human resource practices and work engagement and performance

Variable dimension		β	t value	Adjusted R2	F value
Vitality	Positive human resources practice	0.772	15.124***	1.541	84.661
	Fair rewards and punishments	0.657	11.727***	1.426	51.898
	Decision participation	0.591	10.176***	1.372	39.751
	Growth opportunities	0.721	13.356***	1.469	63.059
Dedication	Positive human resources practice	0.781	15.102***	1.522	14.609
	Fair rewards and punishments	0.614	10.585***	1.373	40.236
	Decision participation	0.615	10.533***	1.364	38.553
	Growth opportunities	0.751	14.115***	1.489	137.128
Abstraction	Positive human resources practice	0.691	12.392***	1.428	105.414
	Fair rewards and punishments	0.588	9.907***	1.342	34.222
	Decision participation	0.612	7.901***	1.264	42.19
	Growth opportunities	0.674	11.949***	1.412	97.932
Work performance	Positive human resources practice	0.501	8.343***	1.310	20.212
	Fair rewards and punishments	0.382	6.070***	1.247	12.163
	Decision participation	0.394	6.276***	1.253	26.635
	Growth opportunities	0.492	8.152***	1.315	19.438
Contextual performance	Positive human resources practice	0.661	10.571***	1.375	40.656
	Fair rewards and punishments	0.558	9.347***	1.331	32.024
	Decision participation	0.434	6.104***	1.227	31.116
	Growth opportunities	0.576	9.740***	1.344	34.675

Table 4.7: Correlation between work engagement and work performance

Variable	Vitality	Dedication	Abstraction	Work performance	Relationship performance
Vitality	1	-	-	-	-
Dedication	0.776**	1	-	-	-
Abstraction	0.752**	0.817**	1	-	-
Work performance	0.449**	0.508*	0.445**	1	-
Relationship performance	0.471**	0.511**	0.517**	0.617*	1

three dimensions of work engagement and work performance and relationship performance, respectively. The findings supported the validity of Hypothesis 3. According to the data above, there was a connection between HR management strategies, employee engagement, and work performance. With the aid of the SPSS 22.0 analysis tool, the study thus examined whether work engagement has a mediating influence. The results are presented in Table 4.9.

In Table 4.9, when the dependent variable was relational performance, the control variables of educational attainment and working hours showed high significance, with the coefficient in model 1(education) = 0.157 and the coefficient (work time) = 0.182, and the p-values for both were less than 0.05. And when work performance was the dependent variable, its regression coefficient under the control and independent variables had a maximum value of 0.524, which was highly significant on a two-sided test relationship (P<0.001). When work engagement was the mediating variable, the regression coefficients of relational performance and task performance on validity, dedication and concentration in work engagement under the control and independent variables were 0.257, 0.374, 0.276, 0.228, 0.287 and 0.326, respectively, and they showed a good correlation (P<0.001). The above results suggested that work dedication played a partially mediating role between HR practices and work performance, and that it was also influenced to some extent by the interference of other factors.

The results showed that HR practices and their dimensions had a significant positive impact on work engagement and its dimensions. This indicated that caring, fair, respectful, valuing, and cultivating HR practices had a significant promoting effect on employee work attitudes, and could improve employee work efficiency. As a whole, PHRPs have a greater impact on work engagement than a single dimension. Specifically, the impact of growth opportunities was most significant. When organizations enhanced employee passion and motivation

Table 4.8: Regression results between job engagement and job performance

Variable dimension		Standard regression coefficient	t value	Adjusted R2	F value
Task Performance	Work engagement	0.479	9.179**	0.308	34.726
	Vitality	0.469	7.797**	0.249	26.541
	Dedication	0.466	7.716**	0.246	26.088
	Abstraction	0.536	9.226**	0.311	35.074
Contextual performance	Work engagement	0.595	10.389**	0.319	106.924
	Vitality	0.562	9.574**	0.282	90.912
	Dedication	0.521	8.679**	0.243	74.691
	Abstraction	0.567	4.212**	0.289	93.602

Table 4.9: Test results of mediating effect

Dependent variable		Contextual performance						Work Performance			
Model		1	2	3	4	5	6	7	8	9	10
Control variable	Gender	-0.048	0.034	0.034	0.032	0.035	-0.003	0.111	0.113	0.108	0.115
	Age	0.015	-0.005	-0.013	0.002	-0.013	0.126	0.135	0.125	0.137	0.127
	Education	0.157*	0.163*	0.156*	0.134*	0.157*	0.004	0.008	0.004	-0.016	0.003
	Job content	-0.032	-0.027	-0.031	0.001	-0.031	-0.084	-0.073	-0.075	-0.045	-0.075
	Title	0.091	0.056	0.027	0.033	0.053	0.075	0.025	0.004	0.008	0.019
	Working hours	0.182*	0.203*	0.186*	0.1645*	0.182*	-0.004	0.027	0.012	-0.006	-0.001
	Unit Dependency Quality	-0.006	-0.004	-0.011	0.026	0.014	-0.083	-0.081	-0.087	-0.062	-0.063
	Human resources practice	-	0.418***	0.255*	0.179*	0.258*	-	0.524***	0.367**	0.351***	0.345***
Mediating variable (work engagement)	Vitality	-	-	0.257**	-	-	-	-	0.228**	-	-
	Dedication	-	-	-	0.374***	-	-	-	-	0.287***	-
	Abstraction	-	-	-	-	0.276***	-	-	-	-	0.326***
δR^2		-	-	-	-	0.258	-	-	-	-	0.338
F		2.278***	8.022***	8.573***	10.438***	9.227**	1.156***	10.958***	11.054***	11.927***	13.036***

through training and promotion, a fair and reasonable reward and punishment system could guide employee behavior, enhance their sense of belonging and ownership of the company. The three dimensions of positive HRs, namely fair rewards and punishments, decision-making participation, and growth opportunities, had a significant positive impact on work engagement and performance. The most significant effect was growth opportunities, followed by fair competition. Therefore, to further promote HR management in enterprises, the following suggestions are proposed:

1. Starting from the establishment and improvement of training mechanisms and employee career planning, providing employees with a learning foundation and growth space. Specifically, it is important to explain the importance of improving employees' self-learning ability and participating in organizational training, helping them specify learning content, focusing on capacity building, and improving their ability level. Enterprises should also provide employees with a training system that can help them develop comprehensively, make corresponding adjustments based on their work content, age, work experience, etc., enrich training methods, build a "learning organization", and motivate employees to participate in enterprise training. Enterprises also need to help employees formulate career development plans, help them recognize their strengths and weaknesses, and promote their comprehensive development in addition to realizing their contribution value to the enterprise.

2. Establish a fair competition mechanism and encourage employees to participate in management and make independent decisions: Enterprise organizations should establish a fair competition mechanism, which is fair, competitive, and selecting talents based on merit, in order to enhance employee work engagement and maximize the utilization of HRs. Encouraging employees to participate in transparent and fair decision-making can effectively convey their suggestions. Enterprises should dare to delegate power, provide employees with development opportunities, and form a good division within the organization, timely feedback on employee

proposals.

3. Strive to improve employee work engagement: Regularly observe employee work attitudes and phased work results, and help them better analyze the reasons for insufficient work engagement or low work effectiveness, solve problems, and help them maximize employee work efficiency.

When using regression analysis to explore the relationship between work engagement as a mediating variable and PHRP and work performance, choosing education level and work time as control variables is to eliminate the potential impact of these factors on relationship performance as much as possible. The reasons for selecting these specific control variables and how they affect the results are as follows: Education level is often regarded as a predictive factor for employees' ability to analyze and solve problems, which can indirectly reflect an individual's cognitive ability, skill level, and ability to obtain and process information. The level of education received can lead to different behaviors of employees when communicating and interacting with leaders and colleagues. Employees who have received higher education may have more flexible and comprehensive thinking on certain work tasks, and their communication with superiors and colleagues will be more efficient, which can better solve problems within the team. This is closely related to employee work performance, interpersonal relationships, etc.

Working time or years of experience can be used as a representative of work experience. Experienced employees may have a deeper understanding of their work content and work environment, as well as a deeper and more comprehensive understanding of work content and industry development, which can help them better adapt to the work environment and improve their work efficiency. Long term work experience may make employees more proficient in building interpersonal relationships, understanding organizational culture, and managing interpersonal relationships in their work, helping them establish more stable and long-lasting work relationships, which has a promoting effect on the development of their work abilities. Incorporating education level and work time into the model as control variables can more accurately evaluate the impact of PHRPs and work engagement on relationship performance, effectively reducing the bias caused by uncontrollable variable factors on the results, and ensuring the reliability and effectiveness of research results. Simultaneously controlling variables can help explain the variation of outcome variables other than mediator variables and independent variables, which can also enrich the content of research conclusions to a certain extent. In future research, attention can be paid to the time span, and data can be collected from different time periods to reflect practical significance. In the HRs practice testing section, measurements can be taken at the organizational level to reduce the subjectivity of the participants. At the same time, expanding the scope and age stage of sample selection, improving the applicability of application recommendations, and considering the mediating effects of other variables such as work satisfaction, organizational commitment, and power distance orientation, can provide reference value for the enrichment of HR management practice content.

5. Conclusion. The study analyzed different content dimensions based on HR practices and work performance, and explored the mediating role of finding work inputs, tested by regression analysis with variable hypothesis conditions. The results showed that all three scales proposed in the study had good reliability and validity, with their Conbach's α coefficients above 0.8 and Bartlett's sphericity test of 0.000. There was a significant positive relationship between positive HR and work engagement and work performance ($P < 0.01$). The regression results indicated that there were significant positive correlations between the dimensions of PHRPs and work engagement and performance, with regression coefficients of 0.657, 0.591 and 0.721 between the three dimensions of vitality and HR practices and coefficient values of 0.614, 0.615 and 0.751 for the three dimensions of dedication and resource practices. Hypothesis 1 and Hypothesis 2 were valid. The regression coefficients between the three variables of work engagement and task performance and relationship performance were 0.469, 0.466, 0.536, 0.562, 0.521, and 0.567, respectively, proving that Hypothesis 3 holds. And the results of the mediating effect indicated that the control variables of education and working hours showed high significance when the dependent variable was relationship performance. When work performance was the dependent variable, its maximum regression coefficient under the control and independent variables was 0.524 ($P < 0.001$). When work engagement was the mediating variable, the regression coefficients of relationship performance and task performance on energy, dedication and concentration in work engagement under the control and independent variables were 0.257, 0.374, 0.276, 0.228, 0.287 and 0.326, and they showed a good correlation ($P < 0.001$). The mediating effect shown by work engagement can effectively help companies to have better targeting in resource

management and work performance adjustment. Work engagement plays a mediating role in HR practice and work performance. Based on the survey results, companies can strengthen HR practice and work performance management by increasing employee work engagement. Specifically, the content can be expanded from the following aspects:

1. Provide positive feedback and recognition, create opportunities for growth and development: Give positive recognition and rewards to employees for their contributions and contributions to the company, and help employees recognize their importance to the company's development. At the same time, provide employees with maximum opportunities for development and promotion, help them plan their career well, and encourage them to develop personal career skills and abilities.

2. Ensure the establishment of a relatively fair and reasonable salary system, adjust working hours, and provide multiple office options when conditions permit, so that employees have other time and energy to balance work and life in their spare time.

3. Strengthen participatory management and increase work autonomy: Encourage employees to participate in the decision-making process, including project planning, goal setting, and solution selection, giving them greater control and decision-making space, enhancing their sense of belonging, mission, and responsibility towards the enterprise.

4. Create a diverse and inclusive work environment, strengthen the construction of the company's spiritual culture: Respect the differences of each colleague with an open and inclusive work attitude, ensure that they feel accepted and respected in their work, and transparent communication methods, so that employees have a clear and recognized understanding of the company's development direction and goals. At the same time, it is necessary to actively establish a team culture, organize team building activities, emphasize the importance of teamwork and positive communication, and thereby improve employee retention rates and enhance their work performance. Enhancing the sample size and scope of selection is an important element of subsequent research for improvement.

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