



# The Impact of Asymmetrical Interpenetration between Work and Non-work on Employee Well-being

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## ABSTRACT

Allowing interpenetration between work and non-work is usually regarded by organizations as an important management strategy to improve employee well-being. However, numerous empirical studies fail to provide consistent support for this view. Based on social exchange equity theory and conservation of resources theory, this paper argues that the impact of interpenetration between work and non-work on employee well-being depends not only on the degree of boundary permeability between the two domains, but also on the directionality and asymmetry of such boundary penetration. Specifically, employees exhibit higher well-being when work-to-nonwork penetration is lower than nonwork-to-work penetration, and lower well-being when work-to-nonwork penetration exceeds nonwork-to-work penetration. Under the condition of symmetrical interpenetration between work and non-work boundaries, higher boundary permeability is associated with higher employee well-being. These hypotheses are verified through sample data collection. The research conclusions provide a theoretical basis for the design and management of employees' work and non-work boundaries in organizations, and offer guiding significance for human resource management practices aimed at enhancing employee well-being. Corresponding strategic recommendations are put forward at the end of this paper.

## 1. Problem statement

Low well-being not only affects employees' physical and mental health, family life and interpersonal relationships, but also impairs their job performance and organizational creativity<sup>[1-3]</sup>. Therefore, practitioners and researchers have long been committed to identifying the factors influencing employee well-being and their mechanisms, so as to provide theoretical support for management practice. Early relevant studies mainly focused on employees themselves, holding that the main factors affecting well-being include income, health, competence, marital satisfaction, job satisfaction, leisure life satisfaction, etc.<sup>[4]</sup>. With the redefinition of work meaning by the new generation of employees<sup>[5]</sup> and the widespread use of network communication technologies, employees' social

activities have become more diverse, and work-life conflicts have intensified. The traditional 9-to-5 work model has become a major constraint to improving employee well-being<sup>[6]</sup>. An increasing number of organizations attempt to enhance employee well-being through work pattern reforms, such as implementing flexible work systems including telecommuting<sup>[7-9]</sup>.

The essence of these work pattern reforms is to permit interpenetration between employees' work and non-work, i.e., to increase the permeability of work and non-work boundaries. Some studies indicate that elevating the permeability of work and non-work boundaries can indeed boost employee well-being<sup>[6]</sup>, while others do not support this conclusion<sup>[10]</sup>. To resolve this contradiction, some scholars have introduced employees' preference for the permeability of work and non-work boundaries as a moderating variable<sup>[11,12]</sup>, and taken

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work-family conflict, job autonomy, work interruption as mediating variables into the research model<sup>[13,7]</sup>, attempting to develop a contingent explanatory theory. However, like any other contingent theory, while explaining specific contexts or phenomena, it loses its value as a general theory guiding universal practice. Thus, it is necessary to explore the impact of work and non-work boundary permeability on employees' psychology and behavior from the essence of boundary permeability, regardless of contexts.

Through literature review, this paper finds that existing relevant studies treat the permeability of work and non-work boundaries as an overall antecedent variable, only considering the degree of boundary penetration while ignoring its directionality and asymmetry, which may be the root cause of inconsistent research conclusions. Boundary theory has demonstrated<sup>[14,15]</sup> that in addition to the degree of work and non-work boundary penetration, the directionality and asymmetry of penetration also exert significant impacts on employees' psychology and behavior<sup>[16]</sup>. Accordingly, this paper posits that employee well-being is influenced not only by the degree of work and non-work boundary penetration, but also by its directionality and asymmetry. The essence of work and non-work boundary penetration is an exchange relationship between elements in employees' work domain and life domain.

Therefore, based on social exchange equity theory, when both work-to-nonwork and nonwork-to-work penetration exist, if the degree of work-to-nonwork penetration surpasses that of nonwork-to-work penetration, employees will perceive that their contributions to the organization exceed the rewards received, resulting in low well-being. On the other hand, under symmetrical interpenetration between work and non-work, higher penetration degree means greater freedom and flexibility for employees in exchanging elements between work and non-work domains, which can reduce work-family conflicts and the depletion of employees' energy and resources. According to conservation of resources theory<sup>[17]</sup>, employees' well-being will be enhanced in this case. Based on this, this paper proposes hypotheses regarding the relationships among asymmetry, directionality of work and non-work boundary penetration and employee well-being, and verifies these hypotheses using survey data collected from 299 employees of companies including Wanda, Huawei and Suning. The research findings of this paper have theoretical guiding value for the design and management of work and non-work boundaries in enterprises, and provide implications for human resource management practices aimed at improving employee well-being.

## 2. Theoretical framework and hypothesis development

### 2.1. Work and non-work boundaries and permeability

Early studies found that although work and family are designed as two distinct domains by organizations, employees still experience work-family conflict and family-work conflict, both of which negatively affect employees' psychology and behavior<sup>[18]</sup>. With the application of information and communication tools, especially for knowledge workers,

dividing daily life into work and family is inappropriate. Even if employees still commute to work from 9 to 5, they may not fully concentrate on work during working hours and can handle personal affairs via mobile phones and computers. On the other hand, many employees handle work outside traditional workplaces, giving rise to remote work modes such as home-based work, neighborhood centers and temporary offices. This makes the boundaries of employees' psychology, roles and relationships no longer restricted by space and time<sup>[19]</sup>, and work and non-work can be crossed and integrated through networks and work platforms<sup>[20]</sup>, namely the permeability of work and non-work boundaries. This has prompted scholars to expand the discussion on the relationship between employees' work and family to the study of work and non-work boundaries<sup>[21]</sup>, and argue that the permeability of work and non-work boundaries is a critical variable influencing employees' psychology and behavior<sup>[16,22]</sup>.

The permeability of work and non-work boundaries refers to the extent to which employees' work roles are psychologically or behaviorally involved in non-work roles<sup>[14]</sup>. Nevertheless, the degrees of penetration in the two directions—work-to-nonwork penetration and nonwork-to-work penetration—differ, meaning the permeability of work and non-work boundaries is directional and asymmetrical<sup>[15,23]</sup>. For example, in organizations implementing flexible work systems, employees are allowed to do non-work things during normal working hours but required to make up for delayed work after work. In this case, the permeability of employees' work and non-work boundaries is reflected in two directions: the former is nonwork-to-work penetration, and the latter is work-to-nonwork penetration. In some organizations, employees' personal affairs are kept outside the workplace, but they are required to work overtime or take work home after work. At this time, the degrees of work and non-work boundary penetration in the two directions are different, indicating asymmetrical penetration of work and non-work boundaries.

### 2.2. The relationship between asymmetrical interpenetration of work and non-work and employee well-being

If only the two special cases of completely asymmetrical penetration—work-to-nonwork penetration or nonwork-to-work penetration—are considered, the former means work affects non-work and the latter means non-work affects work. Obviously, these two scenarios exert different impacts on employees' psychology and behavior. Although this is intuitively perceptible, due to the inconsistent content and non-dimensionality of elements penetrated in the two directions, as well as the non-objectivity of outcome variables, it is difficult to compare their impacts on the same outcome. Therefore, previous studies on the impact of work and non-work boundary permeability on employees' attitudes and behaviors rarely pay attention to the directionality and asymmetry of penetration, and mostly treat permeability as an overall antecedent variable. As a result, these studies fail to reflect the differential impacts of asymmetrical penetration on outcome variables<sup>[16]</sup>, and even yield contradictory conclusions. For instance, Hill<sup>[24]</sup> found that flexible work systems increase the permeability of employees' work and

non-work boundaries, helping achieve work-life balance and improve job satisfaction<sup>[25,26]</sup>. However, Ashforth<sup>[14]</sup> argued that interpenetration between work and non-work leads to role ambiguity, increases role stress and reduces organizational identification<sup>[27]</sup>.

To address this dilemma, this paper draws on the idea of dividing work-family conflict into work-to-family conflict and family-to-work conflict in work-family conflict theory<sup>[28]</sup>, and splits the research on the impact of work and non-work boundary permeability into two directional dimensions: nonwork-to-work penetration and work-to-nonwork penetration, to explore the effects of directionality and symmetry of work and non-work boundary penetration on employees<sup>[29]</sup>. In addition, this paper holds that when evaluating the effectiveness of work and non-work boundary management strategies, it is incomplete to only use outcome indicators reflecting employees' work-related attitudes and behaviors such as job satisfaction and job performance. Since work and non-work boundary management strategies act on both work and non-work domains of employees, and employees' attitudes and behaviors in the work domain interact with those in the non-work domain, the impacts on non-work aspects such as family life should also be included in the evaluation indicators. Subjective well-being, a comprehensive psychological indicator that measures individual quality of life through people's overall assessment of their own life quality<sup>[30]</sup>, can comprehensively gauge the impact of work and non-work boundary permeability on employees.

Social exchange equity theory suggests that the most satisfactory social interaction is a fair relationship—people dislike being exploited by others and are unwilling to take advantage of others. If employees handle non-work affairs during work hours, they will be more willing to complete work tasks after work to make up for delayed work. If employees fail to make up for work, they will worry about the negative impacts on performance, salary and career promotion, thereby undermining their well-being<sup>[4]</sup>. When employees make up for work, they can balance work and life, and their well-being will be enhanced<sup>[31]</sup>. However, if organizations restrict employees' non-work activities during work hours but require them to undertake work tasks after work, such asymmetry in two-way penetration will generate a sense of unfairness among employees and impair their well-being experience. Thus, this paper proposes the following hypothesis:

H<sub>1</sub>: Employees exhibit higher well-being when work-to-nonwork penetration is lower than nonwork-to-work penetration, and lower well-being when work-to-nonwork penetration exceeds nonwork-to-work penetration.

What is the impact of different penetration degrees on employee well-being when work-to-nonwork penetration equals nonwork-to-work penetration (i.e., symmetrical interpenetration between work and non-work boundaries)? The development of communication technology, increasing work and family pressure, and unexpected events inevitably lead to conflicts between work and non-work. When work and non-work domains are completely separated with impermeable boundaries, employees cannot handle affairs in one domain while staying in the other, making work-nonwork

conflicts unsolvable. From the perspective of conservation of resources theory<sup>[17]</sup>, this depletes employees' energy and resources and affects their psychology and behavior. In contrast, interpenetration between work and non-work allows employees to independently rearrange the processing order of work and non-work affairs, arrange time reasonably, and meet different demands of work and family. Higher penetration degree represents greater autonomy, which is more likely to reduce the depletion of employees' energy and resources and promote the improvement of well-being. Therefore, this paper proposes the following hypothesis:

H<sub>2</sub>: Under the condition of symmetrical penetration between work and non-work boundaries, higher penetration degree is associated with higher employee well-being.

### 3. Research design

#### 3.1. Variable measurement

Given the inconsistent content and non-dimensionality of work-to-nonwork penetration and nonwork-to-work penetration, this paper measures these variables based on employees' perceptions. To ensure the validity and consistency of measurement tools, all variables in this paper adopt mature scales developed in existing literature. Through Chinese-English and English-Chinese back-translation, semantic revision, and review and testing by experts and enterprise employees, the questionnaire was appropriately modified to form the final measurement scale.

(1) Permeability of work and non-work boundaries. The measurement indicators of this variable are compiled based on<sup>[15,32]</sup> work-family boundary theory. Combined with<sup>[14]</sup> classification of boundary-spanning behaviors, the concept of family is extended to the non-work domain, including two dimensions: work-to-nonwork permeability and nonwork-to-work permeability. Sample items include: "I handle personal affairs unrelated to work during working hours" and "I handle work-related matters after work". The scale adopts a 5-point Likert scoring method, with 1 to 5 representing gradually increasing frequency or degree (1 = never, 5 = always). In this study, the Cronbach's alpha coefficient of the work-to-nonwork permeability scale is 0.88, and that of the nonwork-to-work permeability scale is 0.93, indicating good reliability of the scale.

(2) Well-being. Well-being can be objective or subjective<sup>[33]</sup>. Objective well-being is defined and judged by external standards, i.e., happiness in others' eyes. It is difficult to reach a consensus on external standards and value systems among different observers, so objectively defined well-being is hard to measure effectively. For this reason, psychologists define well-being based on individual subjective judgment. This kind of well-being measured by people's inner subjective feelings is also called subjective well-being. Independent of specific objective standards and value systems, subjective well-being refers to individuals' overall assessment of their life quality based on their own criteria<sup>[34]</sup>. The employee well-being discussed in this paper refers to subjective well-being, measured by the subjective well-being scale developed by<sup>[35]</sup>, which is widely used in academia due to its simplicity,

intuitiveness and effectiveness. The Chinese version of the scale has been proven to have good reliability and validity in many domestic empirical studies<sup>[36]</sup>. The overall affective index includes 8 items (with negative emotions on the left and positive emotions on the right), and there is 1 item for life satisfaction. A 5-point Likert scoring method is adopted, with 1 to 5 representing increasing positivity (1 = low positivity, 5 = high positivity). In this paper, the Cronbach's alpha coefficient of the scale is 0.94, indicating good reliability.

(3) Control variables. According to previous relevant studies, employees' subjective well-being may also be affected by marital status, work conditions and personal traits. Therefore, to verify the impacts of work-to-nonwork penetration and nonwork-to-work penetration on the research results, this paper controls for employees' age, monthly income, gender, education, marital and parental status, working years, organizational nature and position.

### 3.2. Sample collection

To verify the research hypotheses, the data collection objects of this paper only need to have permeable work and non-work boundaries, with no other restrictive conditions. Accordingly, after preliminary understanding of target enterprises, this paper finally selected more than 30 enterprises including Wanda, Huawei and Suning for investigation. With the help of alumni, 323 questionnaires were distributed, and 299 valid questionnaires were recovered,

with a recovery rate of 92.57%. Among them, 166 were male employees (55.52%); 161 were unmarried (53.85%); 27.42% had more than 7 years of working experience, 11.71% had 5-7 years, 18.73% had 3-5 years, 22.41% had 1-3 years, and the rest had less than 1 year. The largest number of employees had a monthly income of 3001-5000 yuan (30.43%), the smallest number had 7001-9000 yuan (9.70%), and the proportions of employees with monthly income of  $\leq 3000$  yuan (16.72%), 5001-7000 yuan (21.74%) and  $\geq 9001$  yuan (21.40%) were similar. In terms of company nature, 34.45% were from private enterprises, 31.44% from state-owned enterprises, 21.07% from foreign-funded enterprises, and 13.04% from other types of enterprises.

## 4. Data analysis

### 4.1. Discriminant validity of variables

This paper used LISREL 8.70 software to test the discriminant validity of work-to-nonwork permeability, nonwork-to-work permeability and subjective well-being through confirmatory factor analysis (CFA). The results are shown in Table 1. The three-factor model had the best fit ( $\chi^2/df = 3.43$ , CFI = 0.96, NNFI = 0.95, RMSEA = 0.088), indicating that the three variables involved in this paper have good discriminant validity.

Table 1. Results of confirmatory factor analysis

Model	Variables	$\chi^2$	df	$\chi^2/df$	CFI	NNFI	RMSEA
Three-factor model	NWP, WNP, SWB	637.80	186	3.43	0.96	0.95	0.088
Two-factor model	NWP+SWB, WNP	1585.35	188	8.43	0.87	0.85	0.189
Two-factor model	NWP+WNP, SWB	1576.18	188	8.38	0.87	0.85	0.188
Two-factor model	NWP, WNP+SWB	2297.13	188	12.22	0.80	0.78	0.228
Single-factor model	NWP+WNP+SWB	3221.37	189	17.04	0.71	0.68	0.290

Table 2. Descriptive statistics and Pearson correlations of research variables

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11
1. Gender	0.44	0.50	1										
2. Age	2.12	0.59	-0.10	1									
3. Education	3.87	0.98	0.02	-0.04	1								
4. Marital status	1.82	0.98	-0.13*	0.50**	-0.07	1							
5. Working years	3.10	1.56	-0.10	0.51**	-0.16**	0.60**	1						
6. Organizational nature	2.59	1.35	0.06	-0.09	0.09	-0.05	-0.13*	1					
7. Position	1.76	0.84	-0.09	0.29**	0.06	0.38**	0.47**	-0.01	1				
8. Monthly income	2.89	1.39	-0.28**	0.22**	0.20**	0.29**	0.42**	-0.09	0.41**	1			
9. Nonwork-to-work penetration	2.99	0.85	-0.03	0.10	0.10	0.06	0.09	-0.05	0.24**	0.19**	1		
10. Work-to-nonwork penetration	2.55	0.75	0.22**	-0.11	-0.19**	-0.03	0.06	-0.14*	0.08	-0.11	0.23**	1	
11. Subjective well-being	6.98	2.32	-0.06	0.11	0.21**	0.17**	-0.05	0.10	0.04	0.14*	0.12*	-0.25**	1

### 4.3. Hypothesis testing

#### 4.2. Descriptive statistical analysis

Table 2 presents the correlation coefficients, means and standard deviations of all variables. Work-to-nonwork permeability is significantly negatively correlated with subjective well-being ( $r = -0.25$ ,  $p < 0.01$ ), while nonwork-to-work permeability is significantly positively correlated with subjective well-being ( $r = 0.12$ ,  $p < 0.05$ ). In addition, employees' subjective well-being is significantly correlated with education ( $r = 0.20$ ), marital status ( $r = 0.20$ ) and monthly income ( $r = 0.14$ ).

In previous studies on the matching and consistency between two variables, scholars most commonly used the difference method, which combines the measured values of two variables into a single indicator (e.g., arithmetic difference, absolute value of difference or square of difference) to represent their matching or consistency degree, and then uses these indicators to predict outcome variables. Although this method is easy to operate, it confuses the effects of each variable on outcome variables<sup>[37]</sup>. Polynomial regression is a new model developed in recent years to analyze such issues.

Edwards<sup>[38]</sup> directly pointed out that polynomial regression is more advantageous than difference regression in terms of methodological standardization and practical significance when analyzing such problems. Accordingly, this paper adopts polynomial regression to test the impact of asymmetry between work-to-nonwork penetration and nonwork-to-work penetration on employees' subjective well-being.

This paper further uses response surface methodology to draw a 3D graph of the relationships among nonwork-to-work permeability, work-to-nonwork permeability and employees' subjective well-being, presenting the relationships between variables more clearly and intuitively. When  $Y=X$ , employees' subjective well-being reflects the status of symmetrical penetration between work and non-work boundaries ( $X=1,Y=1$ ;  $X=2,Y=2$ ;  $X=3,Y=3$ ;  $X=4,Y=4$ ;  $X=5,Y=5$ ). The subjective well-being of employees under completely asymmetrical penetration between nonwork-to-work and work-to-nonwork ( $X=1,Y=5$ ;  $X=2,Y=4$ ; ...;  $X=4,Y=2$ ;  $X=5,Y=1$ ) projects onto the XY plane as  $Y=-X$ . Points on the curved surface to the right of the line formed by subjective well-being when  $Y=X$  (perfect matching line) indicate higher employee subjective well-being when work-to-nonwork penetration is lower than nonwork-to-work penetration. After crossing the perfect matching line to the left, points indicate lower employee subjective well-being when work-to-nonwork penetration exceeds nonwork-to-work penetration. The farther the points on the curved surface deviate from the perfect symmetry line, the greater the asymmetry between work-to-nonwork and nonwork-to-work penetration and the corresponding employee subjective well-being.

The linear slope along  $Y=X$ :  $b_1+b_2+b_3+b_4+b_5 = 0.14$

The curvilinear slope along  $Y=-X$ :  $b_1-b_2+b_3-b_4+b_5 = -0.70$

It can also be seen that moving from the leftmost side of the response surface to the center, as work-to-nonwork permeability approaches nonwork-to-work permeability, employees' subjective well-being increases. Moving from the center to the rightmost side of the response surface, when work-to-nonwork permeability exceeds nonwork-to-work permeability, employees' subjective well-being begins to decline, which is consistent with the predicted direction of Hypothesis H<sub>1</sub>. Further confirming the significance of the results observed from the response surface graph through the slope of the subjective well-being line reflected by  $Y=-X$ , the quadratic coefficient ( $b_3-b_4+b_5 = -0.70$ ,  $p < 0.001$ ) is significant. Therefore, the relationship between the asymmetry of work and non-work boundary penetration and employees' subjective well-being is an inverted U-shaped curve: employees' well-being is high when work-to-nonwork penetration is lower than nonwork-to-work penetration, and low when work-to-nonwork penetration exceeds nonwork-to-work penetration, i.e., Hypothesis H<sub>1</sub> is supported. However, the primary coefficient of the subjective well-being line under symmetrical penetration of work and non-work boundaries ( $Y=X$ ) is  $b_1+b_2 = 0.03$ , which is not significant, so Hypothesis H<sub>2</sub> is not supported.

## 5. Conclusions and discussion

### 5.1. Conclusions

Enterprises implementing flexible work systems such as telecommuting grant employees greater job autonomy and flexibility, facilitating interpenetration between work and non-work to achieve positive outcomes in employees' attitudes and behaviors. However, merely increasing the permeability of work and non-work boundaries fails to deliver the expected effects. This paper divides the permeability of work and non-work boundaries into two directional dimensions: work-to-nonwork permeability and nonwork-to-work permeability, and defines the difference in boundary permeability between the two dimensions as asymmetry. Empirical results show that employees' well-being is high when work-to-nonwork penetration is lower than nonwork-to-work penetration, and low when work-to-nonwork penetration exceeds nonwork-to-work penetration. As work-to-nonwork permeability gradually approaches nonwork-to-work permeability from low to high, employees' well-being rises; when work-to-nonwork permeability surpasses nonwork-to-work permeability, employees' well-being declines instead. This means that, under the same conditions, employees' well-being under symmetrical penetration between work and non-work is higher than that under asymmetrical penetration.

For Hypothesis H<sub>2</sub> ("under symmetrical penetration, higher penetration degree leads to higher employee well-being"), although the data analysis shows a positive coefficient consistent with the expected result, it does not reach a significant level, i.e., Hypothesis H<sub>2</sub> is not verified. This paper proposes two possible reasons: first, under completely symmetrical penetration of work and non-work boundaries, the interpenetration between work and non-work is in a balanced state. Regardless of the penetration degree, employees in this balanced state can effectively handle work and non-work affairs, so it does not affect their subjective well-being. Second, the number of samples with completely symmetrical penetration of work and non-work boundaries in the actual sample is small, which may also lead to the failure of Hypothesis H<sub>2</sub>. Nevertheless, the conclusions of this paper still have positive reference value for organizational management practice. In addition, previous studies on work and non-work boundaries mainly focused on the impact of boundary penetration degree on employees' attitudes and behaviors, while this paper extends the research to the impacts of penetration directionality and asymmetry, expanding the research framework of work and non-work boundaries.

### 5.2. Management implications

The research conclusions and findings of this paper have the following practical guiding significance for employee work arrangement in enterprise organizations:

(1) While requiring or encouraging employees' work-to-nonwork penetration, enterprises should also allow their nonwork-to-work penetration, which helps improve employees' well-being. With increasingly fierce social competition, employees face growing work and life pressure, and overtime work is common, leading to intensified work-

nonwork conflicts. Moreover, given the widespread application of mobile network technology, it is difficult to require employees to be completely isolated from the outside world during working hours. Some enterprises spend a lot of time, energy and other resources to restrict employees' nonwork-to-work penetration, but require them to conduct work-to-nonwork penetration to achieve higher output. However, according to the verified Hypothesis 1, employees' well-being is low when work-to-nonwork penetration exceeds nonwork-to-work penetration. Low well-being will negatively affect employees' work and life. Therefore, if enterprises expect employees to work overtime after work, they can formulate policies allowing employees to conduct some non-work behaviors during working hours to offset the negative impacts of employees' after-hours work.

(2) Maintaining the symmetry of work and non-work boundary penetration helps improve employees' well-being. As profit-seeking organizations, enterprises will inevitably require employees' work-to-nonwork penetration when allowing nonwork-to-work penetration, i.e., making up for delayed work after work. However, such a requirement does not mean assigning more work tasks after work to make employees feel that the enterprise is "unreasonable", but to keep the degree of two-way interpenetration symmetrical as much as possible as a result of fair exchange. This requires enterprises to clarify the degrees of nonwork-to-work and work-to-nonwork penetration, specify which non-work affairs can penetrate into the work domain and which cannot, and set measurable standards to ensure that both employees and enterprises have clear rules to follow.

### 5.3. Limitations and future research directions

(1) Limitations. The limitations of this paper are as follows: First, according to<sup>[40]</sup>, self-report is more accurate than other methods for measuring variables with personality traits and self-perception. Therefore, this paper adopts self-report for variable measurement, which inevitably causes common method variance. Although single-factor variance test proves that the data have no serious common method variance, combining self-evaluation and other-evaluation can further improve the reliability of verification results. Second, work and non-work boundary permeability is stable over a period of time, so this paper adopts cross-sectional data. A more rigorous approach is to collect data through longitudinal tracking research. Third, this paper only focuses on the impact of work and non-work boundary penetration characteristics on well-being, without analyzing the influences of organizational nature, job nature, employees' family structure, marital status and other factors on the results, which may lead to inconsistent results when applying the research hypotheses to different types of organizations and employees.

(2) Future research directions. Starting from the essence of employees' work and non-work boundary permeability, this paper explores the impacts of boundary penetration directionality and asymmetry on employee well-being, expands the scope of work and non-work boundary research, and provides relatively universal suggestions for enterprises to formulate work and non-work boundary management plans. Future research can enrich the research framework from the

following aspects: First, expand research content. Future studies can explore how different work and non-work boundary permeability characteristics affect employees' attitudes and behaviors, and reveal the mechanism of work and non-work boundary permeability on employee well-being under different organizational types, job natures, family structures and marital statuses, so as to help organizations formulate contingent boundary management strategies. Second, expand research objects. Clark<sup>[15]</sup> research shows that multiple subjects participate in the shaping of employees' work and non-work boundaries, including colleagues and leaders from the work domain, and family members and friends from the non-work domain. These subjects affect employees' work and non-work boundary status. Future research can explore the specific forms of how different subjects influence employees' work and non-work boundary status, or the impacts of employees' work and non-work boundary status on the attitudes and behaviors of different subjects. Third, explore boundary composition. The well-known boundaries of employees' work and non-work are time boundary and space boundary, but psychological boundary is also an important boundary. Due to its invisibility and self-control by employees, it has been ignored by existing studies. Many domestic managers do not allow interpenetration between employees' work and non-work boundaries, requiring employees to work at specific times and places, which actually only restricts the penetration of time and space boundaries. However, when employees face high work-nonwork conflicts, their psychological boundaries may penetrate frequently—"being absent in body but present in mind", which affects employees' attitudes and behaviors. Therefore, the differential impacts of penetration of different boundaries on employees' attitudes and behaviors can be a future research direction. Fourth, explore boundary management strategies. Most existing studies have identified work and non-work boundary states that positively affect employees' attitudes and behaviors, but lack specific operable suggestions on how to shape such boundaries. Kreiner<sup>[41]</sup> summarized that boundaries can be shaped through constraints on behavior, time, location and communication. Future research can verify this and put forward more specific strategic plans.

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