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## A Multilevel Examination of High-Performance Work Systems and Organizational Citizenship Behavior: A Social Exchange Theory Perspective

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### ABSTRACT

Drawing on social exchange theory, this study investigated the cross-level influence of high-performance work systems on organizational citizenship behavior, and verified the mediating role of psychological contract and the moderating effect of Chinese traditionality. With a sample of 51 enterprises and 1015 employees, results from cross-level analyses indicated that: (1) High-performance work systems had a significant positive impact on employees' organizational citizenship behavior. (2) High-performance work systems enhanced organizational citizenship behavior through the improvement of relational psychological contract and balanced psychological contract, at the same time, the high-performance work system could improve the organizational citizenship behavior by reducing transactional psychological contract. (3) Balanced psychological contract and relational psychological contract had a significant positive impact on organizational citizenship behavior, and the relationship with employee's organizational citizenship behavior was stronger for the balanced psychological contract, while transactional psychological contract had a significant negative impact on organizational citizenship behavior. (4) Chinese traditionality moderated the relationship between psychological contracts and employees' organizational citizenship behavior.

**Keywords:** high-performance work systems, psychological contract, organizational citizenship behavior, Chinese traditionality

### INTRODUCTION

The potential benefits of using high-performance work systems (HPWS) have received considerable research attention as significant contributors to sustained competitive advantage. HPWS refer to a group of separate but interconnected HR management practices, including comprehensive recruitment and selection procedures, incentive compensation and performance management systems, and extensive employee involvement and training, which are designed to enhance employee and firm performance outcomes through improving workforce competence, attitudes, and motivation (Huselid, 1995). Previous studies have shown that HPWS can improve job satisfaction and organizational commitment (Takeuchi, Chen, & Lepak, 2009; Heffernan & Dundon, 2016), positively correlate with employee in-role behavior and organizational citizenship behavior (Miao, Zhou, Liu, &

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#### State of the literature

- High performance work systems could improve employee performance.
- Social exchange theory can explain the relationship between HPWS and OCB to a certain extent, and psychological contract could reflect the exchange relationship between employees and organizations.
- Employees' behavior decisions are influenced by values (e.g. Chinese Traditionality).

#### Contribution of this paper to the literature

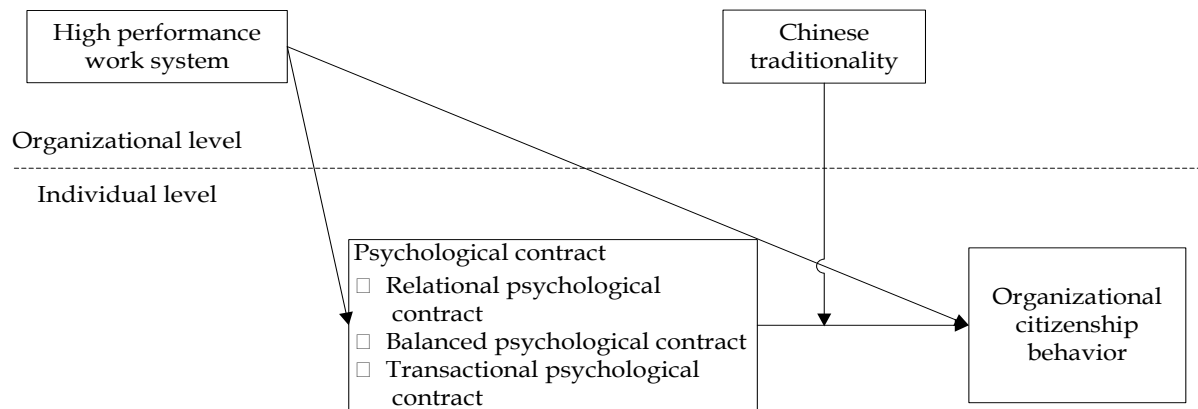
- Confirms the cross-level positive impact of HPWS on employees' OCB, and identifies the mediating role of psychological contract.
- The results show that three types of psychological contract have different effects on organizational citizenship behavior.
- The findings of the study demonstrate that although Chinese Traditionality has no direct influence on OCB, it weakens the relationship between psychological contract and OCB.

Li, 2013; Yan & Chen, 2016; Zhang & Long, 2017), and enhance the firm-level performance (Chowhan, 2016; Zhang & Long, 2017). Recognized by formal reward systems, in-role behavior is part of the requirements as described in job description, while organizational citizenship behavior (OCB) is "individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organization" (Organ, 1989). The employee's discretionary power of OCB is more prominent, so the effect of HPWS on OCB has more research value. However, part of studies used the employee perceived HPWS as the research variables, which is significantly different from management perspective of HPWS (Liao, Toya, Lepak, & Hong, 2009). Management perspective of HPWS has more practical significance to the enterprise human resource management practice. Therefore, this study uses the HPWS reported by human resource manager as the organizational level variables to explore the cross-level effect on OCB.

The social exchange theory (Blau, 1964) has been increasingly used to explain HPWS and employee performance (Miao et al., 2013). Through HR management practices, organization provides various benefits to employees, in exchange for the positive contributions of employees. HPWS affects employee OCB through the formation of employee and organizational exchange relationships. As an important conception of exchange relationship between employees and organizations, psychological contracts (PC) are employees' beliefs regarding the terms and conditions of a reciprocal exchange agreement between them and their employers (Rousseau, 2000). PC are understood through employee perceptions shaped by HR practices (Rousseau, 2000; Chien & Lin, 2013), and employees' OCB are influenced by their psychological contracts (Chien & Lin, 2013; Long, Yi, & Zhang, 2015; Li & Yu, 2016). For this reason, psychological contracts should be viewed as the linking mechanism between HPWS and OCB. However, most previous researches focused on PC fulfillment and PC violation. Recent studies have begun to analyze the effects of psychological contracts from the perspective of exchange types (Long et al., 2015).

The response of employees to psychological contract is influenced by Chinese traditionality (Liu, Hui, Lee, & Chen, 2012), Which is defined and measured as the extent to which an individual endorses the traditional hierarchical role relationships prescribed by Confucian social ethics (i.e., emperor-subject, father-son, husband-wife, older brother-younger brother, and friend-friend) (Farh, Hackett, & Liang, 2007). The behavior of high traditionality employees is less consideration of the balance between inducement and contributions. Therefore, Chinese traditionality may weaken the relationship between psychological contract and OCB. Most empirical studies regarded traditionality as an individual level variable, while Farh et al. (2007) pointed out that traditionality can also be used as an organizational level variable because that the values of employees in the same enterprise will present the phenomenon of convergence. Unfortunately, there are still few cross-level study of the Chinese traditionality as a firm-level variable.

Accordingly, this paper adopts social exchange theory as a framework to discuss the influences of HPWS on employees' OCB, and mainly discusses the following 3 questions: (1) to examine the cross-level effect of HPWS on employees' OCB, (2) to investigate social exchange mechanism of different types of psychological contract by testing the mediation role of psychological contract, (3) to investigate the moderating effect of Chinese traditionality



**Figure 1.** Theoretical framework

on the relationship between psychological contract and OCB. Concretely, the theoretical framework of this paper is shown in [Figure 1](#).

## LITERATURES REVIEW

### High-performance Work Systems and Organizational Citizenship Behavior

According to social exchange theory (Blau, 1964), social interaction is a kind of exchange behavior based on pay and return, the core of which is reciprocity rules. When employees receive organization support, trust, feedback, resources, opportunities and other tangible or intangible benefits from the HPWS, they would have the sense of obligation to return, and therefore improve OCB. These behaviors, which promote the effective functioning of the organization, are employee's return on benefits from HPWS. Many empirical studies have made similar conclusions. Zhang, Fan, and Zhu (2014) demonstrated that HPWS was positively related to OCB, and there were multiple mediators between them, indicating more complicated mechanisms through which HPWS lead to desired HR outcomes. Miao et al. (2013) found that HPWS was positively related to followers' OCB, and followers' perceived organizational support and leader-member exchange partially mediated the relationships between HPWS and OCB. Yan & Chen (2016) proved that HPWS had significantly positive influences on OCB, with psychological empowerment partially mediating the relationships. Therefore, it was predicted that:

**Hypothesis 1:** HPWS will positively associate with employees' OCB.

### The Mediating Role of Psychological Contract

Psychological contracts refer to the employee's perceptions about the nature of the relationship with the organization. Rousseau (2000) classified three typical psychological contracts using the dimensions of duration (short-term vs. open-ended) and performance-reward contingencies (high vs. low or non-contingent). Relational psychological contracts refer to long-term or open-ended employment arrangements based upon mutual trust and loyalty, and rewards are only loosely conditioned on performance (Rousseau, 2000). This is a kind of social exchange and, accordingly, employees with relational psychological contracts focus on socio-emotional as well as economic terms and conditions in their exchange agreement with the employer (Chien & Lin, 2013). Transactional psychological contracts are characterized by a short term, specified performance terms, monetary scope, with little mutual involvement (Rousseau, 2000). This is a kind of economic exchange, and employees with transactional psychological contracts highly focus on the monetary or economic terms and conditions in their reciprocal exchange agreement with the employers. Finally, balanced psychological contracts refer to dynamic and open-ended employment arrangements conditioned on economic success of firm and worker opportunities to develop career advantages of their own (Rousseau, 2000). Balanced psychological contracts simultaneously focus on socio-emotional and economic terms and conditions in a reciprocal exchange agreement between employees and employers (Chien & Lin, 2013).

Employees' psychological contracts are generated and developed with the interaction between employee and organization, and the interaction normally starts from recruitment, affected by a series of human resource practices including performance appraisal, compensation, training, job description and welfare. The essence of psychological contracts are the cognition of human resources practices. Furthermore, the impact of HPWS on different types of psychological contract is not the same. HPWS refer to a group of separate but interconnected HR management practices, including clear job description, selective staffing, results-oriented appraisal, incentive reward, extensive training, internal mobility, participation, and employment security. Balanced psychological contracts are formed when the employer has committed to providing continuous training, and relational psychological contracts are formed when the employer has committed to offering long term employment (Rousseau, 2000). Firms provide extensive training and internal mobility programs through HPWS to develop employees' career advantages, and attempt to set up long-term employments through internal mobility and employment security, consequently, HPWS could enhance employees' perceptions of balanced and relational psychological contracts. In contrast, employees will perceive transactional psychological contracts when the employer has committed to offer them only a specific or short-term employment (Rousseau, 2000). On the basis of the above, HPWS could reduce transactional psychological contracts, because it indicates that the organization is not only interested in short-term gains, but is also concerned with long-term growth and developmental of employees. Previous studies (e.g. Dora Scholarios, 2008; Chien & Lin, 2013; Bal, Kooij, & Jong, 2013) also confirmed that career management, training, internal promotion could increase balanced and relational psychological contracts, and decrease transactional psychological contracts. Therefore, it was proposed that:

**Hypothesis 2a:** HPWS will positively associate with relational psychological contracts.

**Hypothesis 2b:** HPWS will positively associate with balanced psychological contracts.

**Hypothesis 2c:** HPWS will negatively associate with transactional psychological contracts.

According to social exchange theory, the reason why HPWS can improve employees' OCB is to promote the beneficial social exchange between employee and organization. HPWS could enhance employees' perceptions of balanced and relational psychological contracts, and reduce transactional psychological contracts. When perceived positive psychological contract relationship, employees have more obligation and motivation to improve organizational citizenship behavior as the return of HPWS. Basing on the logical view of social exchange theory, the transformation mechanism of elements (HPWS, psychological contracts and OCB) describes the social exchange process of organization's payout, exchange relationship perception, and repay to the enterprise. In short, HPWS will not only affect the type of employees' psychological contract, but also affect employees' OCB through psychological contract. Chien and Lin (2013) and Bal et al. (2013) also confirmed that human resource management practices had positive effects on employees' OCB through different types of psychological contract. Therefore, it was predicted that:

**Hypothesis 3a:** HPWS will positively influence employees' OCB through their relational psychological contracts.

**Hypothesis 3b:** HPWS will positively influence employees' OCB through their balanced psychological contracts.

**Hypothesis 3c:** HPWS will positively influence employees' OCB through their transactional psychological contracts.

### **The Moderating Role of Chinese Traditionality**

Organizational citizenship behaviors are not required for work role, and not directly or explicitly recognized by the formal reward system (Organ, 1989). Therefore, employees will adopt OCB to reciprocate only when they have positive experiences including respect, commitment and support with the organization. Employees with both relational and balanced psychological contracts believe that the organization is trustworthy, is willing to maintain long-term relations, pays attention to the employees' vital interests and career development (Rousseau, 2000). Then these employees are more likely to adopt OCB to reciprocate the organization (Li & Yu, 2016). On the

contrary, employees with transactional psychological contracts perceive the firm offers them short term employment relationship and limited financial obligations. This is a kind of economic exchange, and employees highly focus on performing their in-role behaviors, and will not tend to reciprocate the organization with their OCB (Long et al., 2015).

From the perspective of social dilemma, it should be noted that the influence of relational psychological contracts and balanced psychological contracts on OCB are different. Employees usually face a social dilemma in that exhibiting OCB gain no immediate individual benefit but contribute to the long-term well-being of an organization. According to the social dilemma analysis of OCB, whether or not employees benefit from OCB in a timely manner determines the perceived extent of the social dilemma (Shih & Chen, 2011). Balanced psychological contracts not only ensure the continuity of the contract, but also provide a clearly specified performance and reward system, allowing employees to receive an eventual payoff from the investment in OCB and benefit from OCB as much as an employer does. Therefore, the balanced psychological contracts should involve a low level of social dilemma. Relational psychological contracts commit a long-term duration, but rewards are only loosely conditioned on performance. OCB are primarily beneficial to organizations, while employees' investment in OCB has no guaranteed payoff. Therefore, relational psychological contracts would belong to a medium level of social dilemma. The higher the social dilemma, the lower the OCB (Shih & Chen, 2011). Therefore, the impact of balanced psychological contracts on OCB is stronger than that of relational psychological contracts. Accordingly, the study proposed the following hypotheses:

**Hypothesis 4a:** both relational psychological contracts and balanced psychological contracts will positively influence employees' OCB, and the effect of balanced psychological contracts on OCB is stronger than that of relational psychological contracts.

**Hypothesis 4b:** transactional psychological contracts will negatively influence employees' OCB.

Although the values of Chinese people are constantly changing due to the impact of economic and social changes, the Confucian ideology rooted in the traditional society is still the foundation of Chinese values. In the social exchange relationship, the principle of reciprocity is of universal significance, but it is still influenced by the situational factors such as values. "High traditionalists" (those with high scores on a measure of traditionalism) are more intense likely than "low traditionalists" in submission to authority, and they will respond to their employers more according to their perceived social role obligations and less according to their perceptions of an inducement-contribution balance (Farh et al., 2007). In other words, high traditionalists are more likely to dedicate themselves to their work and engage in OCB because they are "assigned to assume certain responsibilities and obligations", while low traditionalists would engage in OCB for the reasons that "the organization offers a lot, so I should return". At the same time, several empirical literature also found that the traditionality played a moderating role in the relationship between psychological contracts and OCB: traditionality can weaken the negative relationship between psychological contract breach and OCB (Chen, Tsui, & Zhong, 2008), and the relationships between perceived organizational support and OCB are stronger for low traditionalists (Farh et al., 2007).

According to attraction-selection-attrition theory (Schneider, 1987), through the employees' self-determination and the organizations' screening and elimination, those who are similar to organizational values or organizational characteristics are more likely to be attracted, selected and retained in the enterprise, while employees with a large difference from organizational values may not enter the enterprise or withdraw from the enterprise. As a result, the values of employees in the same enterprise will present the phenomenon of convergence. Traditionality can also be construed and measured at the societal and individual levels (Farh et al., 2007). Specifically, this study regards the traditionality as the firm-level variable. Accordingly, the study hypothesized:

**Hypothesis 5a:** traditionality will moderate the relationship between relational psychological contracts and employees' OCB in such a way that the relationships are stronger for those lower, rather than higher, in traditionality.

**Hypothesis 5b:** traditionality will moderate the relationship between balanced psychological contracts and employees' OCB in such a way that the relationships are stronger for those lower, rather than higher, in traditionality.

**Hypothesis 5c:** traditionality will moderate the relationship between transactional psychological contracts and employees' OCB in such a way that the relationships are stronger for those lower, rather than higher, in traditionality.

## RESEARCH METHODS

### Sample

First of all, a preliminary test was carried out to test the validity of the scale, and to make necessary adjustments to the items. Then the formal survey was administered across fifty-six organizations in China to collect data at two levels: firm-level HPWS from HR managers, and a survey of employee for psychological contracts, Chinese traditionality and organizational citizenship behaviors. Care was taken to select companies that are somewhat representative of various industry sectors. All employees were white-collar, full-time, permanent employees. In total, 1568 employee questionnaires from 56 enterprises were returned. After eliminating the invalid questionnaire, this study finally got 51 sample of enterprises, the effective questionnaires were 51 HPWS questionnaire and 1015 staff questionnaire.

For the enterprise sample, were predominantly large enterprise with more than 500 employees (64.7%), 24 companies had been established for more than 20 years (47%), 37.3% were private enterprises, the number of foreign-funded enterprises, state-owned enterprises and joint ventures were roughly equal. For the employee sample, 52.5% were male, 62.3% had a bachelor's degree, 21.6% had a master's degree, 31.5% were born after 1990, 51% were born between 1980 and 1989, were predominantly common staff (73.5%).

### Measures

Back translation was used to translate the scale items in order to ensure the validity of the questionnaire. Given the central tendency bias observed among Chinese respondents, a 6-point scale was used. The common method variance (CMV) was controlled through the design of questionnaire, such as hidden investigation purpose of items, all items were randomly arranged, and used reverse item.

High-performance work systems. HPWS was measured through 27 items developed by Sun, Aryee, and Law (2007). The item "Promotion in this organization is based on seniority" was deleted according to the reliability analysis results of preliminary test (CITC  $-0.044 < 0.4$ , and Cronbach's Alpha if Item Deleted  $0.829 > Cronbach's alpha 0.677$ ). Sample items included "Extensive training programs are provided for individuals in customer contact or front-line jobs", "Employee appraisals emphasize long term and group-based achievement". The scale's alpha reliability in this study was 0.893.

Psychological contracts. Three types of psychological contracts were assessed through Psychological Contract Inventory (PCI) developed by Rousseau (2000). The relational psychological contracts scale contained 8 items, and Cronbach's  $\alpha$  was 0.871. The balanced psychological contracts were measured through 14 items, and Cronbach's  $\alpha$  was 0.913. The transactional psychological contracts scale contained 6 items, and Cronbach's  $\alpha$  was 0.829.

Organizational citizenship behavior. OCB was measured through 9 items scale used in Farh et al. (2007). Sample items included "Actively raises suggestions to improve work procedures or processes" and "Willing to offer assistance to coworkers to solve work-related problems". The scale's alpha reliability in this study was 0.895.

Chinese traditionality. This variable was assessed by the five-item scale used in Farh et al. (2007), which was originally developed in Chinese. Items included "When people have a dispute, they should ask the most senior person to decide who is right", "Children should respect those people who are respected by their parents", "The best way to avoid mistakes is to follow the instructions of senior persons", "Before marriage, a woman should

**Table 1.** Result of CFA

| Model                            | Factor                  | $\chi^2$ | df  | $\chi^2/df$ | CFI  | GFI  | TLI  | RMR  | RMSEA |
|----------------------------------|-------------------------|----------|-----|-------------|------|------|------|------|-------|
| five-factor model                | PCB,PCR,PCS,TRA,OCB     | 1147.989 | 809 | 1.419       | .981 | .949 | .979 | .016 | .020  |
| four-factor model                | PCB+PCR,PCS,TRA,OCB     | 2594.514 | 813 | 3.191       | .898 | .836 | .892 | .028 | .046  |
| three-factor model               | PCB+PCR+PCS,TRA,OCB     | 3330.976 | 816 | 4.082       | .857 | .801 | .849 | .036 | .055  |
| two-factor model                 | PCB+PCR+PCS,TRA+OCB     | 4707.638 | 818 | 5.755       | .778 | .743 | .767 | .064 | .068  |
| one-factor model                 | PCB+PCR+PCS+TRA+OCB     | 5730.076 | 819 | 6.996       | .720 | .696 | .706 | .065 | .077  |
| model with the latent CMV factor | PCB,PCR,PCS,TRA,OCB,CMV | 2032.233 | 808 | 2.515       | .930 | .917 | .926 | .071 | .039  |

Notes: PCR-relational psychological contracts, PCB- balanced psychological contracts, PCS- transactional psychological contracts, OCB-organizational citizenship behavior, TRA- traditionality, CMV- common method variance.

subordinate herself to her father; after marriage, to her husband” and “The chief government official is like the head of a household; the citizen should obey his decisions on all state matters”. In this study, coefficient alpha was 0.798.

Control variables. The control variables were as follows: gender, age, education level and position rank of employee-level, ownership of enterprise and enterprise age of firm-level. The employee age and enterprise age were the ordinal level variable, the others were the nominal level variable, and dummy-coded variable was used. Gender was transformed into 1 dummy variables with female as the reference group; education level was transformed into 3 dummy variables with high school as the reference group; position rank was transformed into 3 dummy variables with common staff as the reference group; ownership of enterprise was transformed into 3 dummy variables with state-owned enterprise as the reference group. Finally, 12 control variables were formed. In regression analysis, only part of dummy variables were reported due to the large number of control variables but not the focus of research.

## RESULTS

### Discriminant Validity, CMV and Aggregation Tests

To examine discriminant validity, the study ran the CFA through software AMOS17.0. Fit indices are presented in **Table 1**. Compared to the other models, the proposed five-factor model fit much better ( $\chi^2/df=1.419$ , CFI=0.981, GFI=0.949, TLI=0.979, RMR=0.016, RMSEA=0.020). The results implied an acceptable construct distinctiveness.

Single unmeasured latent method factor approaches (Podsakoff, Mackenzie, Lee, & Podsakoff, 2003) was carried out to examine whether a biasing effect emerged in the CMV. Items were allowed to load on their theoretical constructs, as well as on a latent common methods variance factor, and the significance of the structural parameters was examined both with and without the latent common methods variance factor in the model, and to test CMV by comparing fit indices. According to **Table 1**, the model with the latent CMV factor and the model without the latent CMV factor (five-factor model) were significantly different, and the five-factor model without the latent CMV factor fit much better. The result indicated that CMV didn't pose as a significant threat to the validity of results and conclusions.

To support the aggregation of traditionality to the firm level, the study examined three aggregation statistics: one interrater agreement indices ( $R_{wg}$ ; James, Demaree, & Wolf, 1984) and two interrater reliability indices (ICC1 and ICC2: Bliese, 2000). The mean  $R_{wg}$  was 0.85, the maximum value was 0.98, the minimum value was 0.57, and the median was 0.86. Only two groups of data  $R_{wg}$  value was less than 0.7, and  $R_{wg}$  value exceeded 0.7 by a percentage of 96.1%. The ICC (1) values were 0.29. The ICC (2) values were 0.89. Thus, these statistics supported the aggregation of traditionality to the firm level, as they suggested ratings were highly shared within firm and reliably different across firms.

**Table 2.** Means, standard deviations and correlations

| Variables                  |   | Mean  | SD   | 1       | 2       | 3      |
|----------------------------|---|-------|------|---------|---------|--------|
| Firm-level<br>N=51         | 1 HPWS                                  | 4.725 | .533 |         |         |        |
|                            | 2 Chinese traditionality                | 3.642 | .464 | -.267   |         |        |
| Individual-level<br>N=1015 | 1 relational psychological contracts    | 4.340 | .576 |         |         |        |
|                            | 2 transactional psychological contracts | 2.648 | .715 | -.486** |         |        |
|                            | 3 balanced psychological contracts      | 4.612 | .450 | .558**  | -.592** |        |
|                            | 4 OCB                                   | 4.711 | .508 | .545**  | -.566** | .666** |

Notes: \*\*p<0.01.

### Descriptive Statistics

**Table 2** shows the means, standard deviations, and correlations among the key variables in this study. There was no significant correlation between HPWS and traditionality ( $r=-0.267$ ,  $p>0.05$ ). OCB showed a significant positively correlation with relational psychological contracts ( $r=0.545$ ,  $p<0.01$ ) and balanced psychological contracts ( $r=0.666$ ,  $p<0.01$ ). Transactional psychological contracts and OCB was negatively correlated ( $r=-0.566$ ,  $p<0.01$ ).

### Hypothesis Testing

The model to be tested was multilevel in nature, and this study used HLM 6.08 software to carry out multi-level model analysis. Fixed effects estimation used a robust standard errors method. Only when the psychological contract acts as an intermediary variable, psychological contract were centered around its grand mean. In other cases, individual level variables were centered around its group mean. Firm-level variables were centered around its grand mean. The results of HLM analysis are shown in **Table 3** and **Table 4**.

Hypothesis 1 proposed a positive relationship between firm-level HPWS and employee-level OCB. According to null model test (model 1), for OCB, ICC (1) was 0.383,  $\tau_{00}=0.101$ ,  $p<0.001$ , indicating that 38.3% of the total variance in OCB resided between firms, and multilevel regression model analysis was appropriate. According to the Model 2 and 3 (see **Table 3**), the control variables had a certain influence on employees' OCB ( $\Delta R^2_{level-1}=0.006$ ,  $\Delta R^2_{level-2}=0.050$ ), and the parameter estimates of HPWS was significant and positive ( $\beta=0.520$ ,  $p<0.001$ ). HPWS explained 72.9% additional variance in concern for OCB over and above those explained by the set of 12 control variables included in model 2 ( $\sigma^2=0.162$ ,  $\tau_{00}=0.026$ ,  $\Delta R^2_{level-2}=0.729$ ). These provided support for Hypothesis 1.

Hypotheses 2 posited that HPWS would positively associate with relational psychological contracts (H2a) and balanced psychological contracts (H2b), and negatively associate with transactional psychological contracts (H2c). Model 4-12 (see **Table 3**) were used to test these three hypotheses. According to null model test (model 4), for relational PCs, ICC (1) was 0.473,  $\tau_{00}=0.160$ ,  $p<0.001$ , indicating that 47.3% of the total variance resided between firms. According to the Model 6, HPWS had a significant positive impact on relational psychological contract ( $\beta=0.701$ ,  $P<0.001$ ), and HPWS explained 81.8% additional variance between groups ( $\Delta R^2_{level-2}=0.818$ ). The results supported Hypotheses 2a. For balanced PCs, ICC (1) was 0.403,  $\tau_{00}=0.081$ ,  $p<0.001$ , indicating that 40.3% of the total variance resided between firms (model 7). HPWS had a significant positive effect on balanced PCs ( $\beta=0.528$ ,  $p<0.001$ : model 9). The results supported Hypotheses 2b. For transactional PCs, ICC (1) was 0.184,  $\tau_{00}=0.094$ ,  $p<0.001$ , indicating that multilevel regression model analysis was appropriate (model 10). The parameter estimates of HPWS was significant and negative ( $\beta=-0.458$ ,  $p<0.001$ : model 12). The results supported Hypotheses 2c.

Hypotheses 3 predicted that relational psychological contracts (H3a), balanced psychological contracts (H3b) and transactional psychological contracts (H3c) would mediate the relationships of HPWS and individual OCB. According to Baron & Kenny (1986), the study adopted three steps to test the mediating role of psychological contracts. The first step (relationship between the independent and dependent) and the second step (relationship between the independent and mediating variables) had been completed, then the study completes the third step



**Table 3.** HLM Analyses of HPWS, psychological contract and OCB

| Variable                           | OCB            |          |          |              |          |           |                   |          |          |          |          |          |          |          |           |
|------------------------------------|----------------|----------|----------|--------------|----------|-----------|-------------------|----------|----------|----------|----------|----------|----------|----------|-----------|
|                                    | relational PCs |          |          | Balanced PCs |          |           | Transactional PCs |          |          |          |          |          |          |          |           |
|                                    | Model 1        | Model 2  | Model 3  | Model 13     | Model 14 | Model 15  | Model 4           | Model 5  | Model 6  | Model 7  | Model 8  | Model 9  | Model 10 | Model 11 | Model 12  |
| Y <sub>00</sub>                    | 4.733***       | 4.733*** | 4.732*** | 4.727***     | 4.722*** | 4.726***  | 4.352***          | 4.352*** | 4.356*** | 4.628*** | 4.627*** | 4.629*** | 2.629*** | 2.630*** | 2.629***  |
| <b>LEVEL-1</b>                     |                |          |          |              |          |           |                   |          |          |          |          |          |          |          |           |
| Age                                |                | 0.009    | 0.009    | 0.011        | -0.008   | -0.003    | -0.007            | -0.007   | -0.007   | 0.025    | 0.025    | 0.025    | 0.025    | -0.034   | -0.034    |
| Gender                             |                | -0.010   | -0.010   | -0.014       | -0.016   | 0.000     | 0.010             | 0.010    | 0.010    | 0.010    | 0.010    | 0.010    | 0.010    | 0.031    | 0.031     |
| Rank <sup>a</sup>                  |                | 0.083*   | 0.083*   | 0.082**      | 0.046    | 0.062*    | 0.002             | 0.002    | 0.002    | 0.059*   | 0.059*   | 0.059*   | 0.059*   | -0.066   | -0.066    |
| Education <sup>b</sup>             |                | 0.033    | 0.033    | 0.020        | 0.022    | 0.109     | 0.034             | 0.034    | 0.034    | 0.018    | 0.018    | 0.018    | 0.018    | 0.231    | 0.231     |
| relational PCs                     |                |          |          | 0.377***     |          |           |                   |          |          |          |          |          |          |          |           |
| Balanced PCs                       |                |          |          |              | 0.637*** |           |                   |          |          |          |          |          |          |          |           |
| Transactional PCs                  |                |          |          |              |          | -0.329*** |                   |          |          |          |          |          |          |          |           |
| <b>LEVEL-2</b>                     |                |          |          |              |          |           |                   |          |          |          |          |          |          |          |           |
| Firm age                           |                | -0.040   | -0.048   | -0.074*      | -0.041   | -0.044    | 0.080             | 0.071*   | 0.071*   | -0.003   | -0.010   | -0.010   | 0.004    | 0.004    | 0.009     |
| Ownership <sup>c</sup>             |                | 0.327**  | 0.018    | 0.057        | 0.039    | -0.009    | 0.305*            | -0.102   | -0.102   | 0.280**  | -0.040   | -0.040   | -0.357** | -0.357** | -0.080    |
| HPWS                               |                |          | 0.520*** | 0.257***     | 0.185**  | 0.371***  | 0.701***          | 0.701*** | 0.701*** | 0.528*** | 0.528*** | 0.528*** | 0.528*** | 0.528*** | -0.458*** |
| <b>Variance</b>                    |                |          |          |              |          |           |                   |          |          |          |          |          |          |          |           |
| T <sub>00</sub>                    | 0.101***       | 0.096*** | 0.026*** | 0.029***     | 0.025*** | 0.029***  | 0.160***          | 0.159*** | 0.029*** | 0.081*** | 0.077*** | 0.005**  | 0.094*** | 0.079*** | 0.025***  |
| σ <sup>2</sup>                     | 0.163          | 0.162    | 0.162    | 0.136        | 0.114    | 0.117     | 0.178             | 0.178    | 0.178    | 0.120    | 0.119    | 0.119    | 0.418    | 0.414    | 0.414     |
| ΔR <sup>2</sup> <sub>level-1</sub> |                |          |          | 0.006        | 0.160    | 0.296     | 0.278             | 0.006    | 0.818    | 0.008    | 0.049    | 0.935    | 0.160    | 0.160    | 0.684     |
| ΔR <sup>2</sup> <sub>level-2</sub> |                |          |          | 0.050        | 0.729    |           |                   |          |          |          |          |          |          |          |           |
| -2LL                               | 1172.88        | 1201.30  | 1150.34  | 989.34       | 813.99   | 843.06    | 1278.37           | 1310.66  | 1243.93  | 863.82   | 892.76   | 800.24   | 2083.12  | 2095.09  | 2059.93   |

Notes: \*p<0.05; \*\*p<0.01; \*\*\*p<0.001. Only part of dummy variables are reported due to the large number of control variables but not the focus of research. <sup>a</sup> first-line managers, <sup>b</sup> bachelor's degree, <sup>c</sup> foreign-owned enterprises

**Table 4.** HLM Analyses of psychological contract , traditionality and OCB

| Variable                           | Model 16 | Model 17 | Model 18  | Model 19 | Model 20 | Model 21  | Model 22  | Model 23  | Model 24  |
|------------------------------------|----------|----------|-----------|----------|----------|-----------|-----------|-----------|-----------|
| Y <sub>00</sub>                    | 4.733*** | 4.733*** | 4.733***  | 4.733*** | 4.733*** | 4.733***  | 4.733***  | 4.733***  | 4.733***  |
| LEVEL-1                            |          |          |           |          |          |           |           |           |           |
| Age                                | 0.011    | 0.011    | 0.008     | -0.008   | -0.008   | -0.011    | -0.000    | -0.000    | -0.004    |
| Gender                             | -0.014   | -0.015   | -0.016    | -0.011   | -0.011   | -0.009    | -0.000    | -0.000    | -0.001    |
| Rank <sup>a</sup>                  | 0.087**  | 0.087**  | 0.087**   | 0.042    | 0.042    | 0.047     | 0.059*    | 0.059*    | 0.058*    |
| Education <sup>b</sup>             | 0.022    | 0.019    | 0.024     | 0.027    | 0.025    | 0.027     | 0.099     | 0.099     | 0.098*    |
| relational PCs (A)                 | 0.395*** | 0.396*** | 0.385***  |          |          |           |           |           |           |
| Balanced PCs (B)                   |          |          |           | 0.657*** | 0.657*** | 0.647***  |           |           |           |
| Transactional PCs (C)              |          |          |           |          |          |           | -0.329*** | -0.329*** | -0.321*** |
| LEVEL-2                            |          |          |           |          |          |           |           |           |           |
| Firm age                           | -0.041   | -0.042   | -0.040    | -0.040   | -0.040   | -0.040    | -0.042    | -0.041    | -0.041    |
| Ownership <sup>c</sup>             | 0.339**  | 0.338*   | 0.323*    | 0.326**  | 0.314*   | 0.315*    | 0.308**   | 0.307*    | 0.308*    |
| Traditionality (D)                 |          | -0.121   | -0.028    |          | -0.068   | -0.031    |           | -0.002    | -0.032    |
| Interaction term                   |          |          |           |          |          |           |           |           |           |
| (D)×(A)                            |          |          | -0.337*** |          |          |           |           |           |           |
| (D)×(B)                            |          |          |           |          |          | -0.503*** |           |           |           |
| (D)×(C)                            |          |          |           |          |          |           |           |           | 0.303***  |
| Variance                           |          |          |           |          |          |           |           |           |           |
| τ <sub>00</sub>                    | 0.098*** | 0.102*** | 0.100***  | 0.099*** | 0.101*** | 0.101***  | 0.099***  | 0.101***  | 0.101***  |
| τ <sub>11</sub>                    | 0.014*   | 0.015*   | 0.002     | 0.036**  | 0.037**  | 0.000     | 0.017***  | 0.017***  | 0.003     |
| σ <sup>2</sup>                     | 0.133    | 0.133    | 0.131     | 0.109    | 0.109    | 0.108     | 0.110     | 0.110     | 0.109     |
| ΔR <sup>2</sup> <sub>level-1</sub> | 0.179    |          |           | 0.327    |          |           | 0.321     |           |           |
| ΔR <sup>2</sup> <sub>level-2</sub> |          | -0.041   |           |          | -0.020   |           |           | -0.020    |           |
| ΔR <sup>2</sup> <sub>inter</sub>   |          |          | 0.867     |          |          | 1.000     |           |           | 0.824     |
| -2LL                               | 1030.63  | 1034.58  | 1004.97   | 852.63   | 856.95   | 819.72    | 866.68    | 871.18    | 836.97    |

Notes: \*p<0.05; \*\*p<0.01; \*\*\*p<0.001.

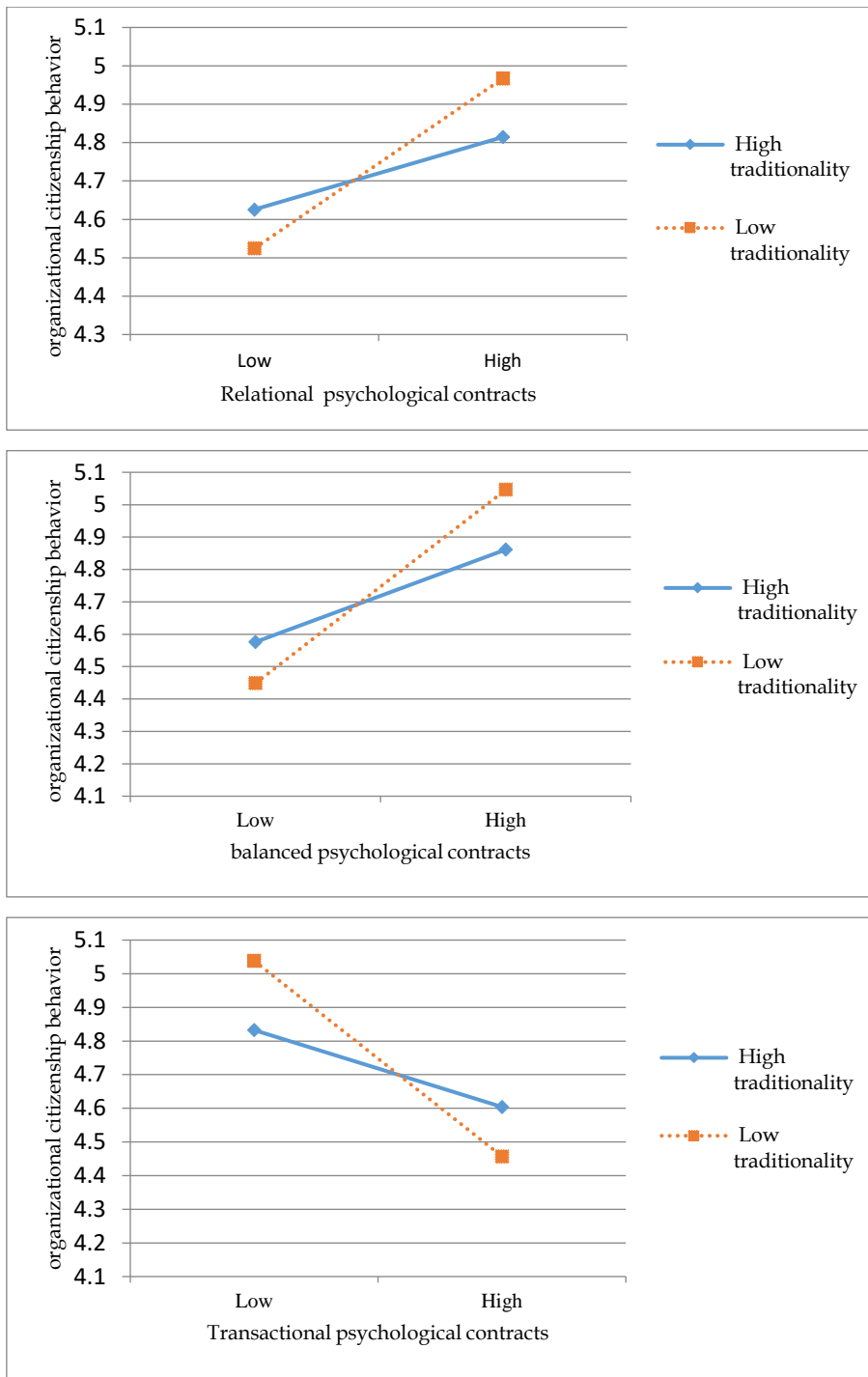
Only part of dummy variables are reported due to the large number of control variables but not the focus of research. <sup>a</sup> first-line managers, <sup>b</sup> bachelor's degree, <sup>c</sup> foreign-owned enterprises.

test by model 13-15. Comparing Model 3, the effect of HPWS on employees' OCB dropped from 0.520 (p<0.001) to 0.257 (p<0.001: model 13), 0.185 (p<0.01: model 14), and 0.371 (p<0.001: model 15). The parameter estimates of relational PCs (β=0.377, p<0.001), balanced PCs (β=0.637, p<0.001) and transactional PCs (β=-0.329, p<0.001) were significant. This showed that the relationship between HPWS and OCB was partially mediated by psychological contracts. Thus, Hypotheses 3a, Hypotheses 3b and Hypotheses 3c were fully supported.

Hypotheses 4 predicted that relational PCs and balanced PCs would positively influence employees' OCB, and the effect of balanced PCs were stronger (H4a), while transactional PCs would negatively influence OCB (H4b). Model 16, 19, 22 (see Table 4) were used to test these two hypotheses. The results showed that relational PCs positively influence employees' OCB (β=0.395, P<0.001: model 16), and relational PCs explained 17.9% additional variance of OCB (ΔR<sup>2</sup><sub>level-1</sub>=0.179). Meanwhile, balanced PCs were positively correlated with employees' OCB (β=0.657, P<0.001: model 19), and balanced PCs explained 32.7% additional variance of OCB (ΔR<sup>2</sup><sub>level-1</sub>=0.327). Thus, Hypotheses 4a was supported. Transactional PCs were negatively correlated with employees' OCB (β=-0.329, P<0.001: model 22). Thus, Hypotheses 4b was supported.

Hypotheses 5 predicted that Chinese traditionality would moderate the relationship between relational PCs (H5a) and employees' OCB, balanced PCs (H5b) and employees' OCB, transactional PCs (H5c) and employees' OCB. Firstly, the random regression coefficient model was established to test the influence of independent variables on dependent variables, then added moderating variables and interaction items successively, and determine whether the moderating effect exist by interaction coefficient and ΔR<sup>2</sup><sub>inter</sub>.

As shown in Table 4, traditionality had no significant effect on OCB (β=-0.121, p>0.05, ΔR<sup>2</sup><sub>level-2</sub>=-0.041: model 17), τ<sub>11</sub> value was 0.015, P<0.05, so it was necessary to further examine moderating effect. According to model 18, coefficient of interaction term was -0.337, p<0.001, explained 86.7% additional between-group variance of OCB (ΔR<sup>2</sup><sub>inter</sub>=0.867). These results showed a significant moderating effect of traditionality on the relationship between relational PCs and employees' OCB. Figure 2 presents the specific moderating effects of traditionality through a



**Figure 2.** Moderating effect of traditionality

simple slope method. High and low level of traditionality were defined by plus and minus one standard deviation from the mean. As shown in **Figure 2**, the relationship between relational PCs and OCB was weaker for more traditional than for less traditional firm. Hypothesis 5a was supported.

Following the same steps and methods, the study test hypothesis H5b and H5c. According to model 21, interaction items had significant effect on OCB ( $\beta=-0.503$ ,  $p<0.001$ ), indicating a significant moderating effect of traditionality on the relationship between balanced PCs and OCB. According to model 24, coefficient of interaction term was 0.303,  $P<0.001$ , explained 82.4% additional between-group variance of OCB ( $\Delta R^2_{\text{inter}}=0.824$ ). These results showed a significant moderating effect of traditionality on the relationship between transactional PCs and employees' OCB. **Figure 2** indicated that the patterns of the interactions were consistent with the predictions. Together, these results provided support for Hypothesis H5b and H5c.

## DISCUSSION AND RECOMMENDATION

### Theoretical Implications

The cross-level influence of HPWS on employees' OCB. The study confirmed the positive relationship between HPWS and employees' OCB. This conclusion was consistent with the previous empirical results of Miao et al. (2013), Yan & Chen (2016), Zhang et al. (2014). Except the effect on corporate performance of the macro level, HPWS has an important influence on employees output. In fact this is the most important way of HPWS to play the strategic role. This study used HPWS as the firm-level variable, and verified the cross-level relationship between HPWS and OCB, which overcame the problems of previous research on the measurement and research level of HPWS, and enriched the empirical evidence.

The mediating effects of different types of psychological contract. Firstly, the study distinguished the different types of psychological contract. Rousseau (2000) pointed out that the characteristics of three types psychological contract were differences. However, most of the previous studies focused on the status of contract fulfillment (such as psychological contract violation), rarely distinguished different types of psychological contract. The study found the three types psychological contracts had different generation process (Hypothesis 2) and the result effect (Hypothesis 4). This finding will help to understand the role of psychological contract more accurately, and provide some inspiration for the research of psychological contract. Secondly, the study found that HPWS had positive influence on relational psychological contract and balanced psychological contract, and negative impact on transactional psychological contract. Rousseau (2000) pointed out that the organization human resource management practice shaped the employee psychological contract. The results of this study supported the above point of view, and were consistent with the previous empirical results (Dora Scholarios et al., 2008; Chien & Lin, 2013; Bal et al., 2013). Finally, hypothesis 3 were supported, indicating that psychological contracts play an intermediary role in the relationship between HPWS and OCB. This results supported previous conclusion under social exchange theory (Miao et al., 2013; Chien & Lin, 2013). Previous studies found that perceived organizational support, leader-member exchange and psychological empowerment had certain mediating effect between HPWS and employee OCB (Miao et al., 2013; Yan & Chen, 2016). This study verified the mediating effects of different types of psychological contract, and enriched the research on the mechanism of HPWS.

The Moderating role of Chinese traditionality. Firstly, the results supported hypothesis H4a and H4b, identified the effects of different psychological contract on OCB. On one side, relational psychological contract and balanced psychological contract had positive influence on OCB, while the transactional psychological contract had negative impact. This conclusion was consistent with Chien & Lin (2013) and Long et al. (2015). On the other side, the effect of balanced psychological contract and relational psychological contract on OCB were not consistent, balanced psychological contract had more prediction effect, which supported the view of social dilemmas. Currently social dilemmas theory was less used in the field of business management, this study broadens the application field of this theory, and also brings some enlightenment to the study of OCB. Secondly, the empirical results supported hypothesis H5, verified the cross-level moderating effect of Chinese traditionality on relation between psychological contract and OCB. Traditionality had no direct impact on OCB, but weaken the relationship between psychological contract and OCB, which is similar to the conclusion of Liu et al. (2012), Farh et al. (2007) and Chen et al. (2008). It will be helpful to correct understand the effect of traditional values, and to grasp the impact of psychological contract on OCB.

## Practical Implications

First of all, the study is helpful for enterprises to improve employees' organizational citizenship behavior through human resource management practices. Specifically, enterprises should improve the recruitment process, provide more training, internal mobility and promotion opportunities, provide necessary occupational safety, timely and complete job description, improve employee participation opportunities, set up performance oriented performance evaluation and incentive compensation. The combination of all these human resource management practices can effectively improve employees' organizational citizenship behavior.

Moreover, managers should pay more attention to the psychological contract, and actively guide and manage employees' psychological contract. Firstly, managers should improve the trust degree of enterprises to employees and continuous investment, improve balanced psychological contract and relational psychological contract, reduce the transactional psychological contract. From the practice of human resource management point view, enterprises should be more emphasis on the projects which will build long-term investment and trust, for instance, deeply training, internal transfer, employee participation and occupational safety. Secondly, managers should guide and intervene psychological contract content through the realistic job preview, to avoid excessive expectations of employees resulting in low levels of psychological contract fulfillment. Thirdly, in the face of unable to fulfill the terms of the psychological contract, the enterprise should explain and discuss with the staff in time, to avoid the formation of PC breach.

In the end, managers should be aware of employees' traditionality, and to promote low Chinese traditionality values. It was found that the traditional values of Chinese enterprises were still high, which weakened the influence of psychological contract on organizational citizenship behavior. Managers should combine the cultural values into human resource management and psychological contract management, intended to create the atmosphere of low traditionality. For instance, increase the opportunity for equal and free dialogue between employees and managers, set up the institution of employee rationalization proposal, establish the institution of employee feedback and complain, emphasize the service and support roles of managers, create an employee oriented corporate culture.

## Limitations and Prospects

This study has limitations in three aspects. First, both psychological contract and organizational citizenship behavior questionnaire were filled out by employees, the control of CMV was not good enough. Another limitation is that data have been collected at one time. This is not conducive to the analysis of causal relationship between HPWS and OCB. Third, electronic questionnaires were used in some companies, then researcher did not conduct the on-site questionnaire explanation and instruction, so error cannot be eliminated completely.

There are two contents which are worth further discussion in the existing theoretical framework. First, HPWS may have a negative impact on employees. The majority of studies believed that HPWS had positive impact on both organizational performance and employee performance, which was widely proved by empirical studies, the same conclusion was reached in this study. However, some studies pointed out that HPWS probably had negative impact on employees recently, lead to employee role overload, reduce employee well-being and performance through the negative attribution (Sun & Wang, 2016). The study of the negative effect of HPWS on employees is still in the exploratory stage with little empirical evidence, and need more and deeper research. Second, Future research should consider the longitudinal study of different time points, and combine it with the horizontal research, which will help to better describe the internal relations between variables.

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