How does Employees' Increasing Challenge Demands Affect their Job Involvement and Work Alienation? An Explanation from Self-determination Theory

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Abstract. Based on two-wave data from 203 employees, we found that employees' increasing challenge demands was positively related to their basic psychological need satisfaction, which then positively related to job involvement and negatively related to work alienation. By revealing the influencing mechanism among these constructs, this study made some theoretical and practical contributions.

Keywords: Increasing challenge demands; Job involvement; Work alienation; Basic psychological need satisfaction; Self-determination theory

1   Introduction

Various tensions in the workplace constantly affect how employees psychologically view their relationship with their work. This psychological state of employees is well described by the concept of work alienation, which refers to the psychological state in which individuals perceive themselves estranged from their work [1]. Chiaburu et al. exhibited that work alienation can bring about various terrible consequences, including poor performance, negative attitudes and depressed well-being [2]. It is significant to explore how to reduce workers' work alienation. Job involvement refers to a cognitive state in which individuals identify psychologically with their work [3]. Chiaburu et al. believed job involvement and work alienation are different slightly and suggested future research to examine them together [2]. Previous research indicated that job involvement can result in many desirable outcomes, such as better organizational commitment and more innovation behaviors [4-5]. Considering the different nature of these two concepts, we focus on how to reduce employees' work alienation and improve their job involvement.

According to self-determination theory (SDT), the basic psychological need satisfaction (PNS) can stimulate individuals' process of internalization and integration, which could enable them to invest many cognitive resources into their work and to deeply interact with their work [6]. Thus, we propose that if employees can satisfy their three basic psychological needs, they will internalize the requirements, norms, and

values of their work, and then experience job involvement. On the contrary, the lack of satisfaction of basic psychological needs will make individuals feel work alienation.

Existing research on antecedents of job involvement or work alienation has largely ignored the role of individuals' proactive behaviors [2-3]. Job crafting refers to individuals' self-initiated changes to the level of job resources or job demands of their work for better meeting their own preferences, needs, and abilities [7]. As a classic job crafting strategy, increasing challenge demands may enable employees to proactively improve the potential of their work in satisfying their three psychological needs, which then to improve job involvement and reduce work alienation. Some scholars have found some possible associations between job crafting and work alienation [8], but they did not reveal the influencing mechanism.

In conclusion, with the help of the insights from SDT, we will explore the relationship between increasing challenge demands and job involvement as well as work alienation, and the mediating role of PNS. It has potential to advance theoretical developments and bring some practical insights.

2   Theory and Hypotheses

2.1   Self-Determination Theory

SDT posited that all individuals possess three basic psychological needs, namely, the need for autonomy, relatedness, and competence [6]. The need for autonomy refers to the desires that individuals feel a sense of volition and choice on their behaviors, and own their behaviors [9]. The need for relatedness refers to the desires that individuals feel connected, chosen and cared for by others, and the need for competence refers to the desires that individuals feel they can effectively interact with environment, finish difficult tasks, and attain desirable results [10].

SDT proposed that if work context can satisfy individuals' three basic psychological needs, they will activate intrinsic motivation and internalize or integrate extrinsic motivations [6], which enables individuals to integrate the requirements, norms, and values of work with themselves. On the contrary, if work context cannot satisfy individuals' these needs, it will disrupt their internalization or integration of extrinsic motivations, thus leading to individuals' alienation and ill-being [6].

2.2   Increasing Challenge Demands and PNS

SDT believed that positive work context will support the satisfaction of individuals' three psychological needs [11]. Employees can proactively build a stimulating work environment to better satisfy their basic psychological needs by increasing challenge demands to change the level of challenge demands of their job [7]. Previous research recognized that challenge demands can promote the satisfaction of individuals' three psychological needs [12].

In summary, we believe that increasing challenge demands may promote employees' PNS, and propose following hypothesis:

H1: Increasing challenge demands is positively related to employees' PNS.

2.3 Results of PNS: Job involvement and Work Alienation

According to SDT, if employees can derive PNS from their work, they may feel driven by intrinsic motivation, experience more enjoyment and excitement, and better internalize and integrate the requirements, norms, and values of their work [6], which enables them to connect themselves with their work, that is, feel job involvement. On the contrary, if employees cannot get satisfaction of basic psychological needs, their internalization and integration of behavioral regulations may be blocked, which makes them perceive themselves estranged from their work, that is, feel work alienation.

In summary, we believe that PNS may improve employees' job involvement and reduce their work alienation, and propose following hypotheses:

H2a: PNS is positively related to employees' job involvement.
H2b: PNS is negatively related to employees' work alienation.

2.4 The Mediating Role of PNS

Synthesizing above-mentioned opinions of hypotheses development, we believe that increasing challenge demands may improve employees' job involvement and reduce their work alienation via promoting PNS, and propose following hypotheses:

H3a: PNS mediates the positive association between increasing challenge demands and job involvement.

H3b: PNS mediates the negative association between increasing challenge demands and work alienation.

Figure 1 shows the theoretical model, including all proposed hypotheses.
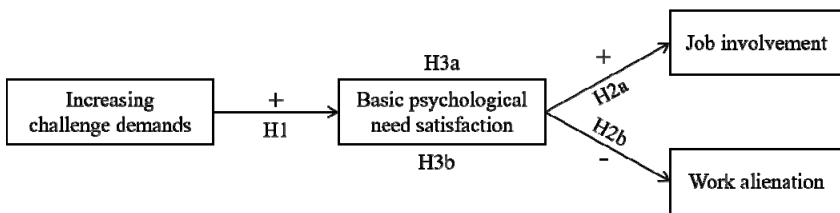

Fig. 1. Proposed theoretical model
Note: "+" represents positive effect; "-" represents negative effect.

3 Method

3.1 Sample and Procedures

We recruited employees through network of relationships and online survey platform named Credamo, and used a two-stage study including two online surveys to reduce common method variance. In time 1, we distributed the first-stage questionnaires to collect participants' increasing challenge demands, job autonomy, distributive justice, and some demographic information. After two weeks (time 2), we sent the second-stage questionnaires to collect participants' PNS, job involvement, and work alienation.

We finally collected valid two-wave responses from 203 employees, with a re-sponse rate of 44.9%. Among the final sample, 55.2% were female; the average age was 28.34 years (SD = 7.82); 94.9% of participants had a bachelor's degree or above.

3.2   Measures

All variables were measured by mature scales. Increasing challenge demands was evaluated by a 5-item scale proposed by Tims et al. [7], and used a 5-point Likert scale (1 = "never", 5 = "always"). PNS was measured by a 12-item scale proposed by Chen et al. [13]. The measurement of this variable used a 7-point Likert scale (1 = "strongly disagree", 7 = "strongly agree), so did the subsequent variables. Job involvement was evaluated by a 10-item scale constructed by Kanungo [14]. Work alienation was evaluated by an 8-item scale constructed by Nair and Vohra [15]. The Cronbach's α of all aforementioned variables ranged from 0.77 to 0.95, bigger than 0.7, which means all of them had a good reliability.

Control variables. For improving the reliability of study results, this study decided to control some variables. Considering the possible influence on PNS, job involvement, or work alienation [3, 16-17], we decided to control distributive justice, which meas-ured by a 5-item scale developed by Niehoff and Moorman [18], with a good reliabil-ity (α = 0.91). We also controlled some demographic variables, including age, gender, and education.

3.3   Analytical Strategy

We used SPSS 26 to conduct the descriptive statistics and correlations analysis. Sub-sequently, we used SPSS 26 and Amos 26 to conduct reliability and validity test as well as confirmatory factor analysis. Finally, we used SPSS 26 to conduct stepwise regression analysis to test proposed hypotheses.

4   Results

4.1   Descriptive Statistics and Correlations

The means and standard deviations of all variables, as well as the Pearson's correlation coefficients among variables are showed in Table 1. All correlation coefficients among increasing challenge demands, PNS, work alienation and job involvement were significant and consistent with our assumptions. Therefore, these preliminary evidences supported proposed hypotheses.

Table 1. Descriptive statistics, correlations and square roots of AVE among variables

	M	SD	1	2	3	4	6	7	8
1. CHD	3.39	0.74	(0.71)						
2.	5.20	0.88	0.61**	(0.81)					

PNS									
3. WOA	3.29	1.44	-0.53**	-0.69**	(0.83)				
4. JBI	4.27	1.17	0.48**	0.51**	-0.66**	(0.74)			
6. DIJ	5.02	1.18	0.45**	0.56**	-0.61**	0.43**	(0.83)		
7. GEN	0.55	0.50	-0.02	-0.10	0.11	-0.02	-0.02		
8. AGE	28.34	7.82	0.25**	0.26*	-0.35**	0.29**	0.27**	-0.02	
9. EDU	3.16	0.58	0.00	-0.07	0.09	-0.01	-0.06	0.07	-0.15*

Note: Individual N = 203. The square roots of average variance extracted values (AVE) are in parentheses. *p < 0.05; **p <0.01.

Abbreviations: CHD, increasing challenge demands; WOA, work alienation; JBI, job involvement; DIJ, distributive justice; GEN, gender; EDU, education.

4.2   Validity Testing and Confirmatory Factor Analysis

The minimum standardized factor loading of items of all variables was 0.67 and bigger than 0.6. The minimum CR of all variables was 0.84 and bigger than 0.7. Meanwhile, the minimum AVE of all variables was 0.51 and bigger than 0.5. Therefore, all variables of this study had a good convergent validity.

As exhibited in Table 1, the square root of AVE of all variables were bigger than their correlation coefficients with each other variable. Meanwhile, these indicators of goodness fit of model of proposed model all reached acceptable levels ($\chi^2/df = 1.60$, lower than 3.0; CFI = 0.93, TLI = 0.92, higher than 0.9; RMSEA = 0.05, SRMR = 0.06, lower than 0.08), thus all variables had an acceptable discriminant validity.

4.3   Hypothesis Testing

Table 2 (Model 2) indicates that increasing challenge demands had a positive association with PNS (b = 0.37, p < 0.01), which provided support for Hypothesis 1. Table 2 (Model 5 and Model 8) shows that PNS was positively associated with job involvement (b = 0.24, p < 0.01), and negatively associated with work alienation (b = -0.40, p < 0.01), which provided supports for Hypothesis 2a and 2b. Table 2 (Model 4 and Model 5) shows that PNS positively was related with job involvement, and the positive effect of increasing challenge demands on job involvement turned down, which supported hypothesis 3a. Table 2 (Model 7 and Model 8) shows that PNS showed a negative effect on work alienation, and the negative effect of increasing challenge demands on work alienation became smaller, which supported hypothesis 3b.

Table 2. Stepwise regression analysis

	PNS		JBI			WOA		
	M1	M2	M3	M4	M5	M6	M7	M8
Control								

variables:								
Gender	-0.09	-0.08	-0.01	-0.01	0.01	0.10	0.09	0.06
Age	0.11	0.06	0.19**	0.15*	0.13*	-0.20**	-0.16**	-0.14**
Education	-0.02	-0.04	0.04	0.03	0.04	0.02	0.03	0.02
Distributive justice	0.53**	0.34**	0.38**	0.24**	0.15*	-0.55**	-0.42**	-0.28**
Predictors:								
CHD		0.44**		0.34**	0.23**		-0.31**	-0.12*
PNS					0.25**			-0.42**
R^2	0.33	0.49	0.22	0.31	0.34	0.41	0.49	0.58
ΔR^2	0.33	0.16	0.22	0.09	0.03	0.41	0.08	0.09
F	24.59**	37.45**	13.79**	17.75**	17.01**	34.87**	37.49**	44.48**

Note: Individual N = 203; Standardized coefficients are shown in each model. *p < 0.05; **p < 0.01.

Abbreviations: CHD, increasing challenge demands; JBI, job involvement; WOA, work alienation.

5   Conclusions

5.1   Theoretical Implications

First, our study has enriched the antecedents research on job involvement and work alienation [2-3], by examining the effect of increasing challenge demands. We found that employees can proactively increase their level of challenge demands to enable them to improve job involvement and reduce work alienation.

Second, this study has revealed the influencing mechanism between increasing challenge demands and job involvement as well as work alienation, by examining the mediating role of PNS. Our findings can further explain the association between job crafting and work alienation observed by existing research [8].

5.2   Practical Implications

First, managers should encourage employees to exert more increasing challenge demands within their capability, given the important effect of increasing challenge demands on job involvement and work alienation. Then managers could provide employees with some trainings on job crafting intervention to help them better exert increasing challenge demands.

Second, managers should pay attention to the satisfaction state of psychological needs of employees, given the significant role of PNS in improving job involvement and reducing work alienation. They could also change the job characteristics or social context to help employees achieve satisfaction of these psychological needs.

5.3 Limitations and Future Directions

First, this study used cross-section data, thus cannot examine the causal relationship among variables. Future research could use longitudinal design to better examine the causal relationship between increasing challenge demands and job involvement as well as work alienation.

Second, this study used self-report data from employees, which may weaken the reliability of study findings. For improving the reliability of results, multi-source design and statistical remedies may be good choices for future research.

Third, this study did not explore the boundary condition of the influencing process of increasing challenge demands on PNS, job involvement, and work alienation. Future research could make important contributions by exploring some potential moderating variables.

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