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When and Why Skill Variety Influences Employee Job Crafting: Regulatory Focus and Social  
Exchange Perspectives

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When and Why Skill Variety Influences Employee Job Crafting: Regulatory Focus and Social Exchange Perspectives

**Abstract**

**Purpose** – The literature on job crafting has paid scant attention to the role of skill variety, one dimension of job characteristics, as a predictor of employee job crafting. By integrating regulatory focus and social exchange perspectives with job crafting literature, we investigate how skill variety promotes employee job crafting and the moderating roles of employee's promotion focus and procedural justice climate.

**Design/methodology/approach** – We conducted two questionnaire surveys, one with a sample of 205 employees from a variety of organizations in China, and the other one with a sample of 265 employees within 44 work groups at a state-owned enterprise in China, to examine our hypotheses.

**Findings** – Results suggest that a high level of skill variety within a job promotes employee job crafting, that such an effect is stronger when the employee's promotion focus is high rather than low, and that procedural justice climate mitigates the negative influence of a low level of promotion focus.

**Originality/value** – Our findings suggest that both self-regulatory and social exchange mechanisms play a critical role in promoting employee job crafting when individuals are engaged in jobs that entail a high level of skill variety.

**Keywords:** job crafting, skill variety, promotion focus, procedural justice climate

In recent decades, the top-down fashion of job design has hardly been adaptable to the decentralized workplace (Crant, 2000). Organizations need their employees to make initiative changes in the ever-changing environment. In other words, instead of passively accepting their job assignments, employees should actively optimize and modify their job components and work roles (Bell and Staw, 1989). By doing so, employees proactively engage in the “job crafting” process of sculpting and altering their jobs (Wrzesniewski *et al.*, 2013). Job crafting refers to “the physical and cognitive changes individuals make in the task or relational boundaries of their work” (Wrzesniewski and Dutton, 2001, p. 179) and consists of three forms: changing the task boundaries of the job (e.g., the number, scope, or types of job tasks performed at work), altering the relational boundaries of the job (e.g., the quality and/or amount of interaction with others at work), and modifying the cognitive task boundaries of the job (e.g., the meaning and significance of the job).

Recent studies have suggested that job crafting is widespread across a variety of occupations and that most employees have at least some latitude to sculpt the boundaries of their jobs (Zhang and Parker, 2019). Furthermore, job crafting may produce a number of positive effects, including employee subjective well-being, job satisfaction, organizational commitment, work engagement, job performance, and career success (Petrou *et al.*, 2017; Romeo *et al.*, 2019; Wang *et al.*, 2018). In essence, the extant literature suggests that by crafting jobs, employees achieve a better fit between their jobs and themselves and inspire initiative in the workplace (Berg *et al.*, 2013).

Due to job crafting’s value to employees and their organizations, researchers have investigated what job-related factors motivate employees to craft their jobs (Mäkikangas *et al.*, 2017). However, most research focuses on job autonomy, which reflects employees’ perceived

freedom to change the boundaries of the job (Petrou *et al.*, 2012). Research is required to understand what other job characteristics can promote employee job crafting and to identify the mechanisms that are involved in the motivational process (Zhang and Parker, 2019). To address this research gap, this paper focuses on an important, yet underexplored, dimension of job characteristics that may predict employee job crafting; namely, skill variety. Skill variety refers to the extent to which a job requires employees to use a wide range of skills, talents, and activities in performing the work (Hackman and Oldham, 1975).

In the present research, we integrate regulatory focus (Higgins, 1998) and social exchange (Blau, 1964) perspectives with job crafting literature to understand when and why skill variety influences employee job crafting. Specifically, we theorize the direct effect of skill variety on job crafting based on the premise that perceived challenges and opportunities make employees experience more meaningfulness (Hackman and Oldham, 1980). Because crafting a high skill variety job is risky and challenging, either internal (individual differences) or external (work context) factor motivates employees engage in job crafting. We then examine the boundary conditions: The first one is promotion focus as one dimension of self-regulatory focus (Higgins, 1998) that determines whether an employee wants to use the opportunities to promote themselves. The second one is procedural justice climate that reflects the social exchange relationship between employees and their work groups, which determines whether the employees are willing to contribute to groups and organizations (Tyler and Lind, 1992). Figure 1 shows our theoretical model.

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Insert Figure 1 about here  
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This article aims to advance the theory of job crafting in a meaningful way. First, by

focusing on skill variety with respect to a job, this research contributes to the deeper understanding of the role of employees' perceived challenges and opportunities to stretch their skills and talents as a critical predictor of job crafting. Next, we theorize and empirically examine the different mechanisms—namely, the regulatory focus and the social exchange processes—that interactively influence the effect of skill variety on employee crafting. We show that employees might react to the perceived challenges and opportunities to stretch their skills and talents with different motives for job crafting under varied situations. Moreover, because our theoretical model is multilevel, including job-, individual-, and group-level constructs with different theoretical mechanisms, our theory and findings generate a variety of practical implications to promote employee job crafting.

### **Theory and Hypotheses**

#### **Role of Skill Variety**

According to job crafting theory, employees craft their jobs if doing so fulfills their basic needs such as control over one's job, positive sense of self, and human connection with others (Wrzesniewski and Dutton, 2001). We propose that a high level of skill variety stimulates employee job crafting because crafting such a job will especially fulfill the needs of control over the jobs and a positive sense of self for the following reasons: First, because high skill variety requires a wide range of abilities, talents, and activities to complete the work, crafting such a job is difficult and challenging in comparison to a job with low skill variety. Traditional job design theory states that job tasks are more meaningful if they involve a greater variety of skills and challenges (Ghitulescu, 2006; Hackman and Oldham, 1980). Second, because a wide range of activities associated with different skills are included in a job with high skill variety, more opportunities exist to change the physical and cognitive boundaries of such a job. For the

above-mentioned reasons, a high level of skill variety generates employees' positive expectations that job crafting will improve productivity and meaningfulness (Berg *et al.*, 2013).

These characteristics of skill variety stimulate both perceived challenges and opportunities to foster an employee's skills and talents by crafting such a job (Humphrey *et al.*, 2007). Although a high level of skill variety makes job crafting riskier or more challenging, it also increases the job meaningfulness and promotes a flexible role expectation. Thus employees are more engaged in such a job. Accordingly, skill variety has been proposed as an antecedent for proactive behaviors (Ren *et al.*, 2018). Therefore, crafting a job will with high skill variety increases one's positive sense of self and perceived control over the job. In short, a high level of skill variety stimulates challenging and meaningful aspects of job crafting, and employees are motivated to craft such jobs to achieve a positive sense of self and control over the job by taking on those challenges and opportunities (Wrzesniewski and Dutton, 2001). Thus, we predict the following:

*Hypothesis 1: Skill variety will be positively related to job crafting.*

### **Moderating Role of Promotion Focus**

We argue that the degree to which employees respond positively to perceived challenges and opportunities to stretch their skills and talents toward crafting a job is influenced by other contingency factors. Drawing on the regulatory focus perspective, we propose that employees are motivated to craft high skill variety jobs especially if they have "a sense of possible gain" or the tendency to take on opportunities and challenges, which is closely related to promotion focus (Higgins, 2000).

Regulatory focus refers to the process through which people approach desired end states and avoid those that are unwanted (Brockner and Higgins, 2001). One of the distinctive

regulatory foci, promotion focus, is related to one's attention on "striving for ideals, approaching future gains, and accomplishment" (Crowe and Higgins, 1997). That is, high promotion-focused individuals perceive achieving goals as advancement and experience emotional pleasure when aspirations are achieved. In addition, these individuals prefer an approach-oriented strategy to meet, rather than avoid, challenges (Hung *et al.*, 2018).

For those high promotion-focused employees, a high level of skill variety can stimulate their job crafting because they are more likely to respond positively to the perceived challenges and opportunities to stretch their skills and talents (Hetland *et al.*, 2018). On the other hand, low promotion-focused employees are not inclined to make changes to their job boundaries, even if they perceive challenges, opportunities, and meaningfulness to demonstrate their skills and talents, nor will they be excited about challenging work activities such as job crafting (Bindl *et al.*, 2019; Petrou *et al.*, 2018). They are more comfortable with passively waiting for job assignments than making initiative changes. Thus we propose:

*Hypothesis 2: Employees' promotion focus will moderate the relationship between skill variety and job crafting such that the relationship is stronger when promotion focus is high rather than low.*

### **Moderating Role of Procedural Justice Climate**

We further propose that a mechanism other than regulatory focus—namely, the social exchange mechanism—plays a complementary role in the effect of skill variety on job crafting. According to the social exchange theory (Blau, 1964), employees are willing to reciprocate the favorable treatment they receive from the work group. The concept of justice is a critical indicator of the social exchanges between employees and their work groups.

One of the group-level constructs that reflect whether employees are treated fairly is the



procedural justice climate, or team members' shared and enduring cognition about how they are treated by work groups or organizations (Li *et al.*, 2010; Naumann and Bennett, 2000). We choose procedural justice climate because procedural justice focuses on the fairness of decision-making procedures and formal policies and it is a better predictor of employees' reactions to the work group as a whole. On the other hand, interactional justice pertains to interpersonal interactions (e.g., the supervisor-employee relations) and distributive justice is more concerned with the outcomes employees receive (Cropanzano *et al.*, 2002).

Drawing on the social exchange theory, employees are motivated to craft high skill variety jobs especially if they are treated fairly by their work groups. Those employees perceive a sense of being valued and attached to their work groups, resulting in their willingness and the feeling of obligation to reciprocate (McAllister *et al.*, 2007; Sung *et al.*, 2017). One way to achieve this is job crafting, which requires employees proactively change the boundaries of their jobs to better fit the organization's interests. In contrast, a low level of procedural justice climate does not trigger employees' job crafting behavior, even if the jobs require them execute their skills and talents (i.e., high skill variety). They will be more likely to define their jobs more narrowly than taking control to make initiative changes (Ren *et al.*, 2018). Thus we propose:

*Hypothesis 3: Procedural justice climate will moderate the relationship between skill variety and job crafting such that the relationship is stronger when procedural justice climate is high rather than low.*

### **Influence of Procedural Justice Climate on the Effect of Promotion Focus**

Drawing on theories of regulatory focus and social exchange, we explain how promotion focus and procedural justice climate promote employees' job crafting. We further propose that they may complement one another in shaping employee job crafting. That is,

procedural justice climate influences the moderating effect of promotion focus between skill variety and job crafting as predicted in Hypothesis 3.

When procedural justice climate is high, both high and low promotion-focused employees are motivated to contribute to the work groups by assuming the challenges and opportunities to stretch skills and talents, which leads to the engagement of job crafting under high skill variety jobs (Blader and Tyler, 2009). In other words, because of the favorable social exchange between employees and their work groups, a high level of procedural justice climate mitigates the negative aspect of the low level of promotion focus in promoting the job crafting of high skill variety jobs.

In contrast, when procedural justice climate is low, employees will not be motivated to contribute to their work groups because they lack the feelings of social exchange obligations (Kamdar *et al.*, 2006). In addition, low-quality social exchanges with the work groups reduce their desires to move beyond job requirements because they do not feel obliged to make such efforts (McAllister *et al.*, 2007). In this situation, only high promotion-focused employees will be motivated to job craft when skill variety is high to increase their positive sense of self and control over their jobs. That is, high promotion-focused employees set their own goals to make their jobs more interesting and meaningful in the course of crafting high skill variety jobs.

In summary, when the procedural justice climate is high, a high level of skill variety will facilitate employee job crafting, regardless of the levels of individuals' promotion focus, because these employees want to reciprocate fair treatment by the work group. In contrast, when the procedural justice climate is low, only high promotion-focused employees craft high skill variety jobs because they will be motivated by their own goals (i.e., goal-oriented self-regulation). Thus we predict the following:

*Hypothesis 4: Procedural justice climate influences the moderating effect of an individual's promotion focus on the relationship between skill variety and job crafting. In particular, skill variety is positively related to job crafting only among high promotion-focused employees when the procedural justice climate is low. In contrast, skill variety is positively related to job crafting, regardless of the level of promotion focus, when the procedural justice climate is high.*

We conducted two studies to examine our hypotheses. In Study 1, we administered a survey to 205 employees from various organizations in China to examine Hypotheses 1 to 2. Study 2 then used a sample of 265 employees within 44 work groups at a state-owned enterprise in China, replicating Hypotheses 1 to 2 and further examining Hypotheses 3 to 4.

### **Study 1**

#### **Participants and Procedures**

Participants consist of part-time MBA students from a national university in North China. All of them were employed full-time in various organizations at the time of the survey. With the help of the MBA program coordinator, we distributed questionnaires to 250 MBA students. A cover letter attached with the questionnaire ensured that their responses were voluntary. The participants were offered extra credit in return for their participation. To alleviate the potential for common method variance, we collected data at two points in time over a one-month period (Podsakoff *et al.*, 2003). Skill variety and promotion focus were measured at Time 1, and 219 usable surveys were returned. One month later, we measured participants' job crafting behavior and demographic variables (Time 2), and 205 usable surveys were returned, representing a response rate of 82.0%. We matched these data using the unique identifier codes generated by the participants.

Over half (65.4%) of the respondents were male, and their mean age was 29.54 years ( $SD = 4.46$ ). Most of them (76.1%) held bachelor degrees or above. On average, they had worked for 3.91 years ( $SD = 3.85$ ) in the company. No significant differences were found between the average age, gender, education, and organizational tenure of respondents and non-respondents.

### Measures

All the materials used in this study were presented in Chinese. Following the back-translation procedures, we translated the measures into Chinese to retain all the meanings of the items (Brislin *et al.*, 1973). We also adjusted some wordings to ensure clarity. All items were responded on a 7-point Likert scale from 1 (strongly disagree) to 7 (strongly agree). We computed a composite score by averaging all the items for each construct.

**Skill variety.** We used a 3-item scale adapted from Morgeson and Humphrey (2006) to measure skill variety. One sample item was “The job requires me to utilize a variety of different skills in order to complete the work.” The Cronbach’s alpha coefficient was .86.

**Promotion focus.** Promotion focus was measured with a 4-item scale developed by Lockwood *et al.* (2002) and adapted from Zhou *et al.* (2012). One sample item was “In general, I am focused on achieving positive outcomes in my life.” The Cronbach’s alpha coefficient was .65.

**Job crafting.** Job crafting reflects the extent to which employees’ redefine and modify their own jobs. We assessed employee job crafting using Sekiguchi and colleagues’ (2017) nine-item measure, which was based on Wrzesniewski and Dutton’s (2001) original conceptualization. Each dimension (i.e., task crafting, relational crafting, and cognitive crafting) has three items. Sample items included, “Change the content and/or procedure of my job to be

more desirable” for task crafting, “Actively interact with people through my job” for relational crafting, and “Reframe my job as significant and meaningful” for cognitive crafting. The results of a second-order factor model ( $\chi^2[24] = 53.89, p < .001; CFI = .97; IFI = .97; RMSEA = .08$ ) indicated that the three dimensions could be aggregated into a higher-order factor (i.e., job crafting). The overall Cronbach’s alpha coefficient was .88.

**Control variables.** We introduced several control variables into our analyses to minimize the potential influences of exogenous variables. Employees’ demographic information comprised our primary controls, including their gender (coded as 0 = male, 1 = female), age (in years), education (coded as 1 = high school or below, 2 = associate degree, 3 = bachelor degree, 4 = master degree, and 5 = doctoral degree), and organizational tenure (in years). Considering its effect on job crafting, job autonomy was also included as a control variable. It was assessed at Time 1 with the 3-item scale developed by Hackman and Oldham (1980) and modified by Idasak and Drasgow (1987). The Cronbach’s alpha coefficient was .88.

## Results

**Measurement properties.** Because our data were collected using self-reported measures, we conducted a Harman’s single-factor test to ensure that our findings were not attributed to common method variance. The results revealed no evidence of this concern. Next, to assess the measurements’ discriminant validity, we performed a series of CFAs using the package “lavaan” in R (Rosseel, 2012). Since the original measures consisted of too many indicators, we reduced the number of indicators for each latent construct. First, we parceled items under each dimension of job crafting to form three indicators. Then, we simplified the indicators for promotion focus following Mathieu and Farr (1991) to yield three aggregated indicators. Because skill variety had only three items, we did not parcel its items. The proposed

three-factor baseline model showed an excellent fit to the data ( $\chi^2[24] = 28.14, p < .001$ ; CFI = 1.00; IFI = .99; RMSEA = .03), with each indicator loaded on the intended latent construct (significantly at  $p < .01$  level). The results indicated adequate discriminant validity for scales used in hypotheses testing (Browne and Cudeck, 1993).

**Hypotheses testing.** Table 1 presents the means, standard deviations, and intercorrelations among all the variables in this study. Consistent with our predictions, skill variety correlates positively with job crafting ( $r = .54, p < .01$ ), lending preliminary support for Hypothesis 1.

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 Insert Table 1 about here  
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We conducted multiple regression analyses to examine Hypotheses 1 and 2. First, we centered the predictors to reduce multicollinearity (Aiken and West, 1991). In Model 1, we included the control variables and independent variables (skill variety and promotion focus) into the regression. In Model 2, we entered the two-way interaction term between skill variety and promotion focus into the regression. The results is presented in Table 2.

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 Insert Table 2 about here  
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As shown in Table 2 (Model 1), skill variety is significantly related to job crafting ( $\gamma = .38, t = 5.79, p < .01$ ) over and above the effects of control variables. Thus Hypothesis 1 is supported. Hypothesis 2 predicted that promotion focus would moderate the relationship between skill variety and job crafting. The results of Model 2 show that the interaction effect ( $\Delta R^2 = .02, \Delta F = 5.27, p < .05$ ) is significant. According to Aiken and West (1991), we plotted this significant interaction in Figure 2, which indicates that the moderating effect of promotion

focus is in the predicted direction. We also computed the simple slopes of job crafting onto skill variety (Aiken and West, 1991). We observed that the relationship between skill variety and job crafting is stronger when promotion focus is high (simple slope  $b = .32, t = 5.01, p < .01$ ) rather than low (simple slope  $b = .18, t = 4.48, p < .01$ ). Thus Hypothesis 2 is supported.

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Insert Figure 2 about here  
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The results of Study 1 supported Hypotheses 1 to 2. However, the nature of our sample that the participants were from a variety of organizations did not allow us to test the impact of group-level context (i.e., Hypotheses 3 to 4). Therefore, to ensure that our findings on Hypotheses 1 and 2 are robust and test Hypotheses 3 and 4 with a multi-level data, we conducted Study 2 using employees within one company.

## Study 2

### Participants and Procedures

Participants consisted of employees from a state-owned enterprise in the iron and steel industry located in North China. In consultation with the human resources managers, we invited 340 employees to participate. Survey packets were distributed during regular working hours. We attached a cover letter to ensure that participation was voluntary and that their responses were used only for research purposes. Participants could withdraw during the process of participation. In addition, we distributed two versions of questionnaires so that the order of survey items was counterbalanced. Confidentiality of the data collection procedures and the counterbalanced item order alleviate the potential for common method bias, with the latter also reducing the priming effect (Podsakoff *et al.*, 2003).

Two hundred and sixty-five usable responses from 44 work groups were returned,

resulting in an overall response rate of 77.9%. Respondents were almost evenly split by gender, with 48.4% of them were male. The average age of participants was 39.51 years ( $SD = 7.44$ ). For their education backgrounds, 41.0% reach high school or below, 36.9% held associate degrees, and 22.1% held bachelor degrees or above. The number of employees responded in each work group ranged from 3 to 13 with the average being 7.3 per work group. On average, they had worked for 18.10 years ( $SD = 8.99$ ) in the company. No significant differences were found between the average age, gender, education, and organizational tenure of respondents and non-respondents.

### Measures

**Skill variety.** As in Study 1, we measured participant's skill variety using the 3-item scale adapted from Morgeson and Humphrey (2006). The Cronbach's alpha coefficient was .82.

**Promotion focus.** As in Study 1, promotion focus was measured with a 4-item scale developed by Lockwood *et al.* (2002) and adapted from Zhou *et al.* (2012). The Cronbach's alpha coefficient was .75.

**Procedural justice climate.** Procedural justice climate was measured using a 4-item procedural justice scale from Rupp and Cropanzano (2002). One sample item was, "Our work group's procedures and guidelines are very fair." The Cronbach's alpha coefficient was .61. Following the direct-consensus composition approach (Chan, 1998), we created the construct of procedural justice climate, which was a group-level variable. In support of aggregation, the mean  $\gamma_{wg}$  (using a uniform null distribution) for the procedural justice climate was .82, above the acceptable criteria of .70 (James *et al.*, 1984). Besides that, the variance between work groups was significant,  $F(43, 216) = 1.93$ ;  $p < .01$ .  $ICC(1) = .14$ , and  $ICC(2) = .48$  also showed acceptable inter-rater reliability and the reliability for a group mean index. The relatively low



score of ICC(2) may stem from the small Level-2 sample size (Bliese, 2000). Considering all the above results as well as the theoretical foundation, we can conclude that aggregation for this variable was justified.

**Job crafting.** As in Study 1, we assessed employee job crafting using Sekiguchi and colleagues' (2017) nine-item measure. The results of a second-order factor model ( $\chi^2[24] = 56.48, p < .001$ ; CFI = .97; IFI = .97; RMSEA = .07) indicated that the three dimensions could be aggregated into a higher-order factor (i.e., job crafting). The overall Cronbach's alpha coefficient was .86.

**Control variables.** We introduced the same control variables as those used in Study 1. These are gender (coded as 0 = male, 1 = female), age (in years), education (coded as 1 = high school or below, 2 = associate degree, and 3 = bachelor degree or above), and organizational tenure (in years), and job autonomy (the 3-item scale used in Study 1). The Cronbach's alpha coefficient of job autonomy was .84.

## Results

**Measurement properties.** As a preliminary analysis, Harman's single-factor test was conducted to ensure that our findings were not attributed to common method variance. The results revealed no evidence of this concern. Next, we performed a series of CFAs using the R package "lavaan" (Rosseel, 2012). As in Study 1, we reduced the number of indicators for each latent construct. The proposed four-factor baseline model showed an excellent fit to the data ( $\chi^2[48] = 108.43, p < .001$ ; CFI = .93; IFI = .93; RMSEA = .07), with each indicator loaded on the intended latent construct (significantly at  $p < .01$  level). The results indicated adequate discriminant validity for the study variables (Browne and Cudeck, 1993).

**Hypotheses testing.** Table 3 presents the means, standard deviations, and

intercorrelations among all the variables in this study. Consistent with our predictions, skill variety correlates positively with job crafting ( $r = .35, p < .01$ ), lending preliminary support for Hypothesis 1.

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Insert Table 3 about here  
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In the present study, participants (Level-1) were grouped within their work groups (Level-2). That is, our data had a nested structure, so we used the package “lme4” (Bates *et al.*, 2013) in the R to examine the hypotheses. We group-mean centered all the Level-1 variables to avoid influencing the between-group and cross-level interactions (Hofmann and Gavin, 1998). In order to alleviate multicollinearity in the Level-2 estimation, we grand-mean centered procedural justice climate (Enders and Tofighi, 2007).

We followed the procedures suggested by Aguinis *et al.* (2013) to examine our hypotheses. In the first step, we ran a null model (Model 1) with no predictors but job crafting as the outcome. The results, including those of variance analyses, were reported in Table 4. Then, we computed the intraclass correlation (ICC) for the null model, which explains the percentage of the total variation in employee job crafting behavior accounted for by group differences (Aguinis *et al.*, 2013). The results (ICC = .26) indicated that there exists Level 2 variables (i.e., procedural justice climate) that can explain the heterogeneity of job crafting scores across work groups. Therefore, multilevel modeling is an appropriate analytical technique for the hypothesized relationships (Mathieu *et al.*, 2012). In the following steps, we employed a series of moderated multiple regressions in multilevel modeling to examine our hypotheses.

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Hypothesis 1 predicted the main effect of skill variety on employee job crafting. The results of Model 2 suggest that, after control variables are accounted for, skill variety is significantly related to job crafting ( $\gamma = .14, t = 2.51, p < .05$ ), indicating the significant effect of skill variety. Therefore, Hypothesis 1 is supported.

Hypothesis 2 predicted that promotion focus moderates the relationship between skill variety and job crafting. The results of Model 3 indicate the existence of this interactive effect ( $\gamma = .11, t = 2.23, p < .05$ ). Following the Johnson-Neyman (J-N) technique outlined in Bauer and Curran (2005), we plotted and examined the pattern of this interaction (see Figure 2). We also calculated the simple slopes of job crafting on skill variety (Preacher *et al.*, 2006). Simple slope analyses reveal that the effect of skill variety on job crafting is stronger when promotion focus is high rather than low ( $b = .24, z = 3.13, p < .01$  and  $b = .04, z = .51, n.s.,$  respectively). Therefore, Hypothesis 2 is supported.

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Insert Figure 3 about here  
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Hypothesis 3 predicted that procedural justice climate moderates the relationship between skill variety and job crafting. The results of Model 4 indicate this interactive effect ( $\gamma = .17, t = 1.83, p = .07$ ) is nonsignificant at  $p < .05$  level. Therefore, Hypothesis 3 is not supported.

Hypothesis 4 predicted a cross-level three-way interaction between promotion focus, skill variety, and procedural justice climate on job crafting. Specifically, the interactive effects of promotion focus and skill variety differ depending on the levels of procedural justice climate.

The results of Model 5 reveal a significant three-way interaction term ( $\gamma = -.39, t = -2.82, p < .01$ ). Following prior research (Hofmann *et al.*, 2003), we assessed the effect size of the interaction term using ordinary least squares (OLS) regression (with group-level procedural justice climate scores disaggregated to the individual level). The results demonstrate that this interaction accounts for an additional 2% of the variance in job crafting (i.e.,  $\Delta R^2 = .02$ ), indicating its significance (Champoux and Peters, 1987). Finally, following the common practice, we probed the pattern of this interaction by substituting group-level data into individual data and creating two groups on high and low levels of procedural justice climate (Herold *et al.*, 2008). Graphical illustrations are shown in Figure 3 and 4. Because simple slope analyses are less appropriate to test whether the magnitude of the interaction effect varies according to the level of a moderator (Richter *et al.*, 2012), we conducted a simple interactions test (Aiken and West, 2000) to investigate the interactive effect between skill variety and promotion focus at both high (+1 *SD*) and low (-1 *SD*) levels of procedural justice climate separately. The results reveal that while the skill variety  $\times$  promotion focus interaction is significant when procedural justice climate is low ( $t = 3.50, p < .01$ ), it is nonsignificant when procedural justice climate is high ( $t = -1.01, n.s.$ ). These results suggest that the moderating effect of promotion focus on the relationship between skill variety and job crafting is observed only in low procedural justice climate, which is consistent with our prediction. That is, a high level of procedural justice climate mitigates the negative influence of the low level of promotion focus in influencing job crafting. Taken together, Hypothesis 3 is supported.

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Insert Figure 4 about here  
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### **Discussion**

The literature on job crafting has paid scant attention to the role of skill variety—one dimension of job characteristics—as a predictor of employee job crafting. Therefore, the current study investigated when and why skill variety promotes job crafting by incorporating different theoretical perspectives, namely, regulatory focus and social exchange, with job crafting theory. The results of our two empirical studies generally support our major hypotheses. In Study 1, skill variety is positively related to job crafting and such an effect is stronger when employees' promotion focus is high rather than low. In Study 2, the two-way interaction between skill variety and procedural justice climate is slightly below the level of significance, but the crosslevel framework enables us to identify the more complex relationship. That is, a high level of skill variety influences employee job crafting regardless of the level of promotion focus when procedural justice climate is high, whereas the effect only applies to the employees with a high level of promotion focus when procedural justice climate is low.

### **Theoretical Implications**

Our theoretical model and empirical findings, which are multilevel in nature and integrating different theoretical perspectives with job crafting theory, extend the knowledge of job crafting in several ways. First, we explicitly hypothesized and found that skill variety is an important predictor of employee job crafting. Our finding enriches the understanding of the role of job characteristics as a major predictor of employee job crafting. Unlike other dimensions of job characteristics, such as job autonomy (Petrou *et al.*, 2012), the role that skill variety plays in job crafting has not been explicitly examined in past studies. However, our study shows that

skill variety can promote employee job crafting because doing so increases the employee's positive sense of self and control over the jobs by stretching their skills and talents.

Second, from the regulatory focus perspective, our findings suggest that, in general, although a high level of skill variety motivates employees to craft their jobs, the strength of this effect depends on employees' inner motivational mechanism. That is, whether these employees will craft their jobs depends on their tendency to take on opportunities and challenges. This is consistent with the regulatory fit theory (Higgins, 2000), which states that the relationship between an employee's regulatory focus (the level of promotion focus in this study) and the situation (the level of perceived challenges and opportunities to stretch his/her skills and talents) determines whether an employee is willing to craft a job.

Third, our findings involving the procedural justice climate have important theoretical implications for understanding the purpose and motivation of job crafting. That is, employees craft their jobs not only for themselves, but also for the benefit of work groups and organizations. It appears that past research on job crafting heavily relies on the "self-interest" view that employees want to craft their jobs to obtain meaningfulness from their positions (e.g., Mäkikangas, 2018). Our study, on the other hand, sheds light on the social exchange view that employees might craft their jobs to reciprocate favorable treatment by the work groups. Thus, our findings suggest the possibility that employees will react to the opportunities to job craft by different motives (e.g., self-interest and social exchange motivations).

### **Managerial Implications**

Our theoretical model is multilevel, including job-, individual-, and group-level constructs with different theoretical mechanisms. Therefore, our findings suggest a variety of managerial implications to promote employee job crafting. First, managers can consider

increasing the level of skill variety of the jobs that are assigned to the employees as an option to promote employee job crafting. The importance of job characteristics in predicting job crafting has been theorized and examined by researchers (Petrou *et al.*, 2012). Our results add to this literature by proposing that skill variety can also facilitate employee job crafting.

Second, at the individual level, our findings shed light on the importance of a promotion focus as an individual difference factor that moderates the effect of skill variety on job crafting. In particular, our results suggest that managers should consider the level of an employee's promotion focus if they want to promote job crafting by increasing the level of skill variety or the perceptions of challenges and opportunities to stretch their skills and talents.

Third, at the workplace level, our findings involving the procedural justice climate as a group-level variable indicate that treating employees fairly in groups and organizations could be more effective in promoting job crafting by providing challenges and opportunities to stretch skills and talents. This is because employees with both high and low promotion focus might be motivated to contribute to groups and organizations by taking advantage of job crafting opportunities. They may be motivated to craft their jobs to benefit their work groups and organizations instead of themselves.

### **Limitations and Future Research Directions**

The encouraging results from the present research should also be viewed in light of the limitations. First, the measures adopted in this article are self-reported. However, it might be unreasonable to measure some variables, such as job crafting, by using the other-rated method. For example, it is hard for supervisors and peers to accurately rate one's job crafting, which involves cognitive deliberation processes (Wrzesniewski and Dutton, 2001). It is employees themselves who determine their modifications of job tasks and interpersonal interactions, which

is a challenging process to observe. Moreover, cognitive crafting is difficult for others to perceive because it occurs in one's mind (Berg *et al.*, 2013). Therefore, it is appropriate to capture employee job crafting by the self-report measure.

Nonetheless, because our data are from the same source, common method variance may artificially influence the major findings. In this regard, we mitigated this concern by adopting both procedural and statistical remedies, such as collecting data at different points in time in Study 1, ensuring the confidentiality of respondents, using a counterbalanced item ordering approach in Study 2, and conducting a post hoc statistical test (Podsakoff *et al.*, 2003). The results of Harman's single-factor analysis ensured that common method variance was not a serious issue. Moreover, because the major findings are complex, such as a cross-level and three-way interaction in Study 2, they are less influenced by common method bias (Spector, 2006). Another potential limitation pertaining to the research design is that our study is essentially cross-sectional. Therefore, our data provides only limited support for causal inferences.

Future research could extend our theoretical framework and key findings involving job characteristics, employees, and their work group contexts as major determinants of job crafting. For example, other job characteristics, such as feedback and task independence, warrant further investigation. An examination of other individual difference factors, including employee knowledge and skills related to the abilities to change job boundaries, is also expected. Furthermore, investigating the outcomes of job crafting, such as individual and group performance at high versus low levels of a social exchange relationship, could indicate whether employee job crafting is driven by different motives (e.g., self-interest or social exchange inclinations) and whether it produces different outcomes, such that the effect of job crafting on



productivity might be high when it is based on the motivation to help work groups and organizations rather than to bring benefit to an individual.

### References

- Aguinis, H., Gottfredson, R.K. and Culpepper, S.A. (2013). "Best-practice recommendations for estimating cross-level interaction effects using multilevel modeling", *Journal of Management*, Vol. 39 No. 6, pp. 1490-1528.
- Aiken, L.S. and West, S.G. (1991). *Multiple Regression: Testing and Interpreting Interactions*, Sage, Newbury Park, CA.
- Aiken, L.S. and West, S.G. (2000, August). "Probing three-way interactions in multiple regression: Simple interaction tests", Poster presented at the annual meeting of the American Psychological Association, Washington, DC.
- Bates, D., Maechler, M., Bolker, B. and Walker, S. (2013). "lme4: Linear mixed-effects models using Eigen and S4 (version 1.0-5) [Computer software]". Retrieved from <http://cran.r-project.org/web/packages/lme4/index.html>
- Bauer, D.J. and Curran, P.J. (2005). "Probing interactions in fixed and multilevel regression: Inferential and graphical techniques", *Multivariate Behavioral Research*, Vol. 40 No. 3, pp. 373-400.
- Bell, N.E. and Staw, B.M. (1989). "People as sculptors versus sculpture: The roles of personality and personal control in organizations", in Arthur, M., Hall, D. and Lawrence, B. (Eds.), *Handbook of Career Theory*, Cambridge University Press, Cambridge, UK, pp. 232-251.
- Berg, J.M., Dutton, J.E. and Wrzesniewski, A. (2013). "Job crafting and meaningful work", in Dik, B.J., Byrne, Z.S. and Steger, M.F. (Eds.), *Purpose and Meaning in the Workplace*, American Psychological Association, Washington, DC, pp. 81-104.
- Bindl, U.K., Unsworth, K.L., Gibson, C.B. and Stride, C.B. (2019). "Job crafting revisited:

- Implications of an extended framework for active changes at work”, *Journal of Applied Psychology*, Vol. 104 No. 5, pp. 605-628.
- Blader, S.L. and Tyler, T.R. (2009). “Testing and extending the group engagement model: Linkages between social identity, procedural justice, economic outcomes, and extrarole behavior”, *Journal of Applied Psychology*, Vol. 94 No. 2, 445-464.
- Blau, P. (1964). *Exchange and Power in Social Life*, John Wiley, New York, NY.
- Bliese, P.D. (2000). “Within-group agreement, non-independence, and reliability: Implications for data aggregation and analysis”, In Klein, K.J. and Kozlowski, S.W.J. (Eds.), *Multilevel Theory, Research, and Methods in Organizations*, Jossey-Bass, San Francisco, CA, pp. 349-381.
- Brislin, R.W., Lonner, W.J. and Thorndike, R.M. (1973). *Cross-Cultural Research Methods*, Wiley, New York, NY.
- Brockner, J. and Higgins, E.T. (2001). “Regulatory focus theory: Implications for the study of emotions at work”, *Organizational Behavior and Human Decision Processes*, Vol. 86, No. 1, pp. 35-66.
- Browne, M.W. and Cudeck, R. (1993). “Alternative ways of assessing model fit”, in Bollen, K.A. and Long, J.S. (Eds.), *Testing Structural Equation Models*, Sage, Newbury Park, CA, pp. 136-162.
- Chan, D. (1998). “Functional relations among constructs in the same content domain at different levels of analysis: A typology of composition models”, *Journal of Applied Psychology*, Vol. 83 No. 2, pp. 234-246.
- Champoux, J.E. and Peters, W.S. (1987). “Form, effect size and power in moderated regression analysis”, *Journal of Occupational Psychology*, Vol. 60 No. 3, pp. 243-255.

- Cohen-Charash, Y. and Spector, P.E. (2001). "The role of justice in organizations: A meta-analysis", *Organizational Behavior and Human Decision Processes*, Vol. 86 No. 2, pp. 278-321.
- Crant, J.M. (2000). "Proactive behavior in organizations", *Journal of Management*, Vol. 26 No. 3, pp. 435-462.
- Cropanzano, R., Prehar, C.A. and Chen, P.Y. (2002). "Using social exchange theory to distinguish procedural from interactional justice", *Group & Organization Management*, Vol. 27 No. 3, pp. 324-351.
- Crowe, E. and Higgins, T.E. (1997). "Regulatory focus and strategic inclinations: Promotion and prevention in decision-making", *Organizational Behavior and Human Decision Processes*, Vol. 69 No. 2, pp. 117-132.
- Enders, C.K. and Tofighi, D. (2007). "Centering predictor variables in cross-sectional multilevel models: A new look at an old issue", *Psychological Methods*, Vol. 12 No. 2, pp. 121-138.
- Ghitulescu, B.E. (2006). *Shaping Tasks and Relationships at Work: Examining the Antecedents and Consequences of Employee Job Crafting*, Unpublished doctoral dissertation, University of Pittsburgh.
- Hackman, J.R. and Oldham, G.R. (1975). "Development of the job diagnostic survey", *Journal of Applied Psychology*, Vol. 60 No. 2, pp. 159-170.
- Hackman, J.R. and Oldham, G.R. (1980). *Work Redesign*, Addison-Wesley, Reading, MA.
- Herold, D.M., Fedor, D.B., Caldwell, S. and Liu, Y. (2008). "The effects of transformational and change leadership on employees' commitment to a change: A multilevel study", *Journal of Applied Psychology*, Vol. 93 No. 2, pp. 346-357.

- Hetland, J., Hetland, H., Bakker, A.B. and Demerouti, E. (2018). "Daily transformational leadership and employee job crafting: The role of promotion focus", *European Management Journal*, Vol. 36 No. 6, pp. 746-756.
- Higgins, E.T. (1998). "Promotion and prevention: Regulatory focus as a motivational principle", *Advances in Experimental Social Psychology*, Vol. 30, pp. 1-46.
- Higgins, E.T. (2000). "Making a good decision: Value from fit", *American Psychologist*, Vol. 55 No. 11, pp. 1217-1230.
- Hofmann, D.A. and Gavin, M.B. (1998). "Centering decisions in hierarchical linear models: Theoretical and methodological implications for organizational science", *Journal of Management*, Vol. 24 No. 5, 623-641.
- Hofmann, D.A., Morgeson, F.P. and Gerras, S.J. (2003). "Climate as a moderator of the relationship between leader-member exchange and content specific citizenship: Safety climate as an exemplar", *Journal of Applied Psychology*, Vol. 88 No. 1, pp. 170-178.
- Humphrey, S.E., Nahrgang, J.D. and Morgeson, F.P. (2007). "Integrating motivational, social, and contextual work design features: A meta-analytic summary and theoretical extension of the work design literature", *Journal of Applied Psychology*, Vol. 92 No. 5, pp. 1332-1356.
- Hung, C.C., Huan, T.C., Lee, C.H., Lin, H.M. and Zhuang, W.L. (2018). "To adjust or not to adjust in the host country? Perspective of interactionism", *Employee Relations*, Vol. 40 No. 2, pp. 329-345.
- Idasak, J.R. and Drasgow, W.F. (1987). "A revision of the job diagnostic survey: Elimination of measurement artifacts", *Journal of Applied Psychology*, Vol. 72 No. 1, pp. 69-74.
- James, L.R., Demaree, R.G. and Wolf, G. (1984). "Estimating within-group interrater reliability

- with and without response bias”, *Journal of Applied Psychology*, Vol. 69 No. 1, 85-98.
- Kamdar, D., McAllister, D.J. and Turban, D.B. (2006). “‘All in a day’s work’: How follower individual differences and justice perceptions predict OCB role definitions and behavior”, *Journal of Applied Psychology*, Vol. 91 No. 4, pp. 841-855.
- Li, N., Liang, J. and Crant, J.M. (2010). “The role of proactive personality in job satisfaction and organizational citizenship behavior: A relational perspective”, *Journal of Applied Psychology*, Vol. 95 No. 2, pp. 395-404.
- Lockwood, P., Jordan, C.H. and Kunda, Z. (2002). “Motivation by positive or negative role models: Regulatory focus determines who will best inspire us”, *Journal of Personality and Social Psychology*, Vol. 83 No. 4, 854-864.
- Mäkikangas, A. (2018). “Job crafting profiles and work engagement: A person-centered approach”, *Journal of Vocational Behavior*, Vol. 106, pp. 101-111.
- Mäkikangas, A., Bakker, A.B. and Schaufeli, W.B. (2017). “Antecedents of daily team job crafting”, *European Journal of Work and Organizational Psychology*, Vol. 26 No. 3, pp. 421-433.
- Mathieu, J.E. and Farr, J.L. (1991). “Further evidence for the discriminant validity of measures of organizational commitment, job involvement, and job satisfaction”, *Journal of Applied Psychology*, Vol. 76 No. 1, pp. 127-133.
- Mathieu, J.E., Aguinis, H., Culpepper, S.A. and Chen, G. (2012). “Understanding and estimating the power to detect cross-level interaction effects in multilevel modeling”, *Journal of Applied Psychology*, Vol. 97 No. 5, pp. 951-966.
- McAllister, D.J., Kamdar, D., Morrison, E.W. and Turban, D.B. (2007). “Disentangling role perceptions: How perceived role breadth, discretion, instrumentality, and efficacy

- relate to helping and taking charge”, *Journal of Applied Psychology*, Vol. 92 No. 5, 1200-1211.
- Morgeson, F.P. and Humphrey, S.E. (2006). “The Work Design Questionnaire (WDQ): Developing and validating a comprehensive measure for assessing job design and the nature of work”, *Journal of Applied Psychology*, Vol. 91 No. 6, pp. 1321-1339.
- Naumann, S.E. and Bennett, N. (2000). “A case for procedural justice climate: Development and test of a multilevel model”, *Academy of Management Journal*, Vol. 43 No. 5, pp. 881-889.
- Petrou, P., Bakker, A.B. and van den Heuvel, M. (2017). “Weekly job crafting and leisure crafting: Implications for meaning-making and work engagement”, *Journal of Occupational and Organizational Psychology*, Vol. 90 No. 2, pp. 129-152.
- Petrou, P., Demerouti, E., Peeters, M.C.W., Schaufeli, W.B. and Hetland, J. (2012). “Crafting a job on a daily basis: Contextual correlates and the link to work engagement”, *Journal of Organizational Behavior*, Vol. 33 No. 8, 1120-1141.
- Petrou, P., Demerouti, E. and Schaufeli, W.B. (2018). “Crafting the change: The role of employee job crafting behaviors for successful organizational change”, *Journal of Management*, Vol. 44 No. 5, pp. 1766-1792.
- Podsakoff, P.M., MacKenzie, S.M., Lee, J. and Podsakoff, N.P. (2003). “Common method variance in behavioral research: A critical review of the literature and recommended remedies”, *Journal of Applied Psychology*, Vol. 88 No. 5, pp. 879-903.
- Preacher, K.J., Curran, P.J. and Bauer, D.J. (2006). “Computational tools for probing interaction effects in multiple linear regression, multilevel modeling, and latent curve analysis”, *Journal of Educational and Behavioral Statistics*, Vol. 31 No. 4, pp. 437-448.

- Ren, R., Simmons, A.L., Barsky, A., See, K.E. and Gogus, C.I. (2018). "It's not my job: Compensatory effects of procedural justice and goal setting on proactive preventive behavior", *Journal of Management & Organization*. doi: 10.1017/jmo.2018.69
- Richter, A.W., Hirst, G., van Knippenberg, D. and Baer, M. (2012). "Creative self-efficacy and individual creativity in team contexts: Cross-level interactions with team informational resources", *Journal of Applied Psychology*, Vol. 97 No. 6, pp. 1282-1290.
- Romeo, M., Yepes-Baldó, M., Piñeiro, M.Á., Westerberg, K. and Nordin, M. (2019). "Job crafting and well-being in the elderly care sector: The effect of over-commitment", *Employee Relations*, Vol. 41 No. 3, pp. 405-419.
- Rosseel, Y. (2012). "lavaan: An R package for structural equation modeling", *Journal of Statistical Software*, Vol. 48 No. 1, pp. 1-36.
- Rupp, D.E. and Cropanzano, R. (2002). "The mediating effects of social exchange relationships in predicting workplace outcomes from multifoci organizational justice", *Organizational Behavior and Human Decision Processes*, Vol. 89 No. 1, pp. 925-946.
- Sekiguchi, T., Li, J. and Hosomi, M. (2017). "Predicting job crafting from the socially embedded perspective: The interactive effect of job autonomy, social skill, and employee status", *Journal of Applied Behavioral Science*, Vol. 53 No. 4, pp. 470-497.
- Spector, P.E. (2006). "Method variance in organizational research: Truth or urban legend?", *Organizational Research Methods*, Vol. 9 No. 2, pp. 221-232.
- Sung, S.Y., Choi, J.N. and Kang, S.C. (2017). "Incentive pay and firm performance: Moderating roles of procedural justice climate and environmental turbulence", *Human Resource Management*, Vol. 56 No. 2, pp. 287-305.



- Tyler, T.R. and Lind, E.A. (1992). "A relational model of authority in groups", *Advances in Experimental Social Psychology*, Vol. 25, pp. 115-191.
- Wang, H.J., Demerouti, E., Blanc, P.L. and Lu, C.Q. (2018). "Crafting a job in 'tough times': When being proactive is positively related to work attachment", *Journal of Occupational and Organizational Psychology*, Vol. 91 No. 3, pp. 569-590.
- Wrzesniewski, A. and Dutton, J.E. (2001). "Crafting a job: Revisioning employees as active crafters of their work", *Academy of Management Review*, Vol. 26 No. 2, pp. 179-201.
- Wrzesniewski, A., LoBuglio, N., Dutton, J.E. and Berg, J.M. (2013). "Job crafting and cultivating positive meaning and identity in work", In Bakker, A.B. (Ed.), *Advances in Positive Organizational Psychology*, Emerald, London, UK, pp. 281-302.
- Zhang, F. and Parker, S.K. (2019). "Reorienting job crafting research: A hierarchical structure of job crafting concepts and integrative review", *Journal of Organizational Behavior*, Vol. 40 No. 2, pp. 126-146.
- Zhou, Q., Hirst, G. and Shipton, H. (2012). "Context matters: Combined influence of participation and intellectual stimulation on the promotion focus–employee creativity relationship", *Journal of Organizational Behavior*, Vol. 33 No. 7, pp. 894-909.

Table 1

*Means, standard deviations, and correlations in Study 1*

Variable	Mean	SD	1	2	3	4	5	6	7	8
1. Skill variety	5.23	1.28	--							
2. Promotion focus	5.58	.93	.25**	--						
3. Job crafting	5.42	.88	.54**	.35**	--					
4. Gender	.35	.48	-.12	-.04	.05	--				
5. Age	29.54	4.46	.18**	.12	.11	-.07	--			
6. Education	3.08	.91	.03	-.05	-.12	-.05	.25**	--		
7. Organizational tenure	3.91	3.85	.03	-.05	.07	-.09	.56**	.04	--	
8. Job autonomy	4.55	1.48	.52**	.28**	.50**	.02	.16*	.05	.08	--

*Notes.*  $N = 205$ .

Gender: 0 = male; 1 = female.

\*  $p < .05$ ; \*\*  $p < .01$ .

Table 2

*Results of the moderated regression in Study 2*

Variable	Job crafting	
	Model 1	Model 2
<b>Control variables</b>		
Gender	.10	.12
Age	-.03	-.02
Education	-.12*	-.12*
Organizational tenure	.08	.08
Job autonomy	.25**	.23**
<b>Independent variables</b>		
Skill variety	.38**	.37**
Promotion focus	.19**	.24**
<b>Interaction</b>		
Skill variety × promotion focus	—	.14*
Total $R^2$	.41	.43
$\Delta R^2$	—	.02*

Notes.  $N = 205$ .

\*\*  $p < .05$ ; \*  $p < .01$ .

We entered the control variables firstly in all analyses.

Skill variety, promotion focus, and their interaction were centered prior to analysis.

$\Delta R^2$  is the change in  $R^2$  for the addition of the skill variety × promotion focus interaction to the regression.

Table 3

*Means, standard deviations, and correlations in Study 2*

Variable	Mean	SD	1	2	3	4	5	6	7	8	9
1. Skill variety	4.86	1.15	--								
2. Promotion focus	4.92	1.00	.33**	--							
3. Procedural justice climate	4.64	.48	-.07	.19**	--						
4. Job crafting	5.12	.89	.35**	.33**	.21**	--					
5. Gender	.52	.50	-.02	.03	.13*	.19**	--				
6. Age	39.51	7.44	.02	-.07	.01	.01	-.04	--			
7. Education	1.81	.77	.10	.00	-.02	-.07	.03	-.34**	--		
8. Organizational tenure	18.10	8.99	.04	-.06	.02	.04	-.05	.90**	-.46**	--	
9. Job autonomy	4.25	1.36	.39**	.31**	.09	.38**	-.01	.08	-.13	.10	--

*Notes.* Team  $N = 44$ ; individual  $N = 265$ .

Gender: 0 = male; 1 = female.

\*  $p < .05$ ; \*\*  $p < .01$ .

The correlations and significance tests between individual-level variables and procedural justice climate are cross-level because the mean values of procedural justice climate were disaggregated to each member in the same work group.

Table 4

*Results of multilevel modeling analyses in Study 2*

Level and Variable	Job crafting				
	Model 1	Model 2	Model 3	Model 4	Model 5
Level 1					
Control variables	—	—	—	—	—
Intercept ( $\gamma_{00}$ )	5.14**(.08)	4.86**(.46)	4.82**(.45)	4.80**(.46)	4.87**(.43)
Skill variety ( $\gamma_{10}$ )		.14*(.06)	.14*(.06)	.12*(.06)	.17**(.06)
Promotion focus ( $\gamma_{20}$ )			.06(.06)		.10(.06)
Level 2					
Procedural justice climate ( $\gamma_{01}$ )				.16(.14)	.26(.14)
Two-way interactions					
Skill variety $\times$ promotion focus ( $\gamma_{30}$ )			.11*(.05)	.17(.09)	.09(.06)
Skill variety $\times$ procedural justice climate ( $\gamma_{11}$ )					.02(.10)
Promotion focus $\times$ procedural justice climate ( $\gamma_{21}$ )					.16(.17)
Three-way interaction					
Skill variety $\times$ promotion focus $\times$ procedural justice climate ( $\gamma_{31}$ )					-.39**(.14)
Within-group (Level-1) variance ( $\sigma^2$ )	.56	.51	.50	.50	.43
Intercept (Level-2) variance ( $\tau_{00}$ )	.19	.08	.08	.08	.07

Notes. Team  $N = 44$ ; individual  $N = 265$ .

\*\*  $p < .05$ ; \*  $p < .01$ .

Multilevel coefficients (standard errors) are reported.

We entered the control variables firstly in all analyses. Owing to space limitation, results for control variables are not shown here, but are available from the authors.

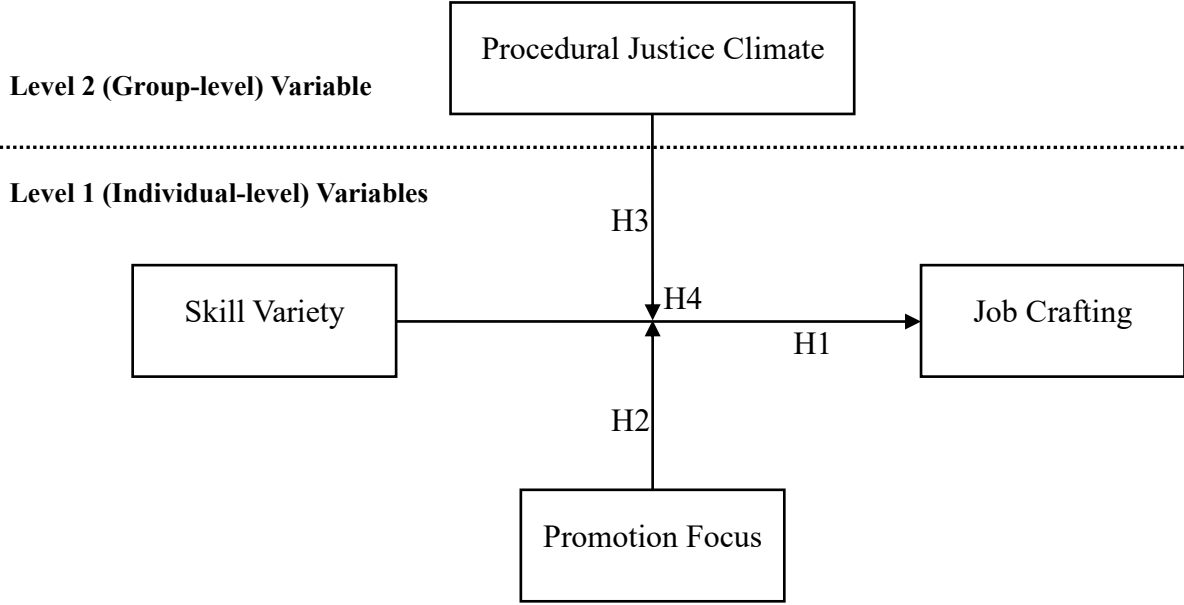


Figure 1. Hypothesized model

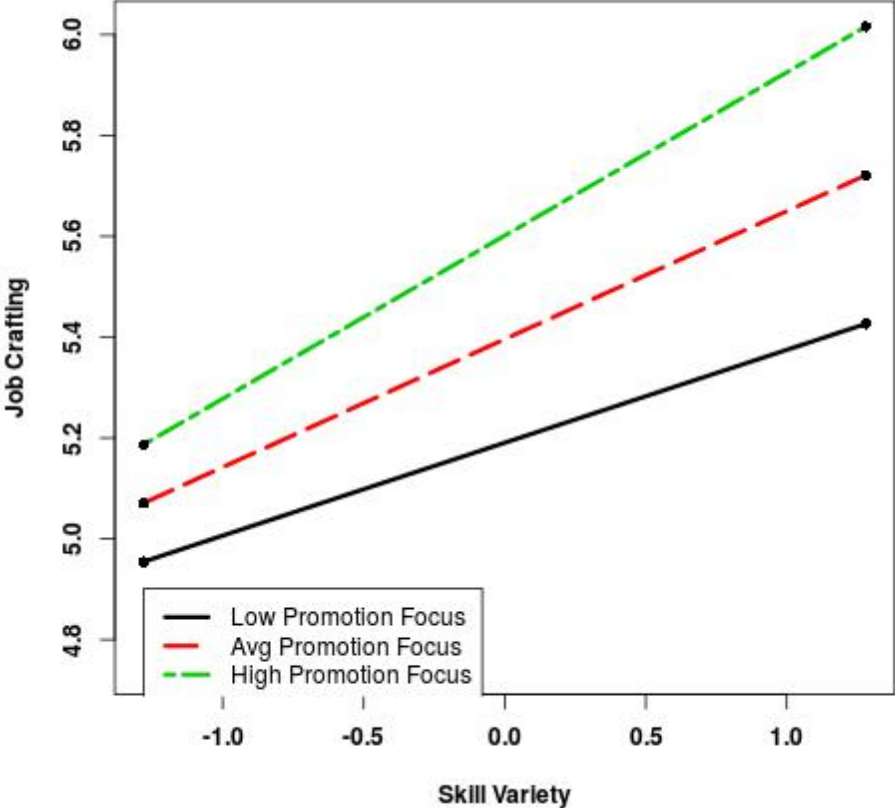


Figure 2. Interaction of promotion focus and skill variety on job crafting in Study 1

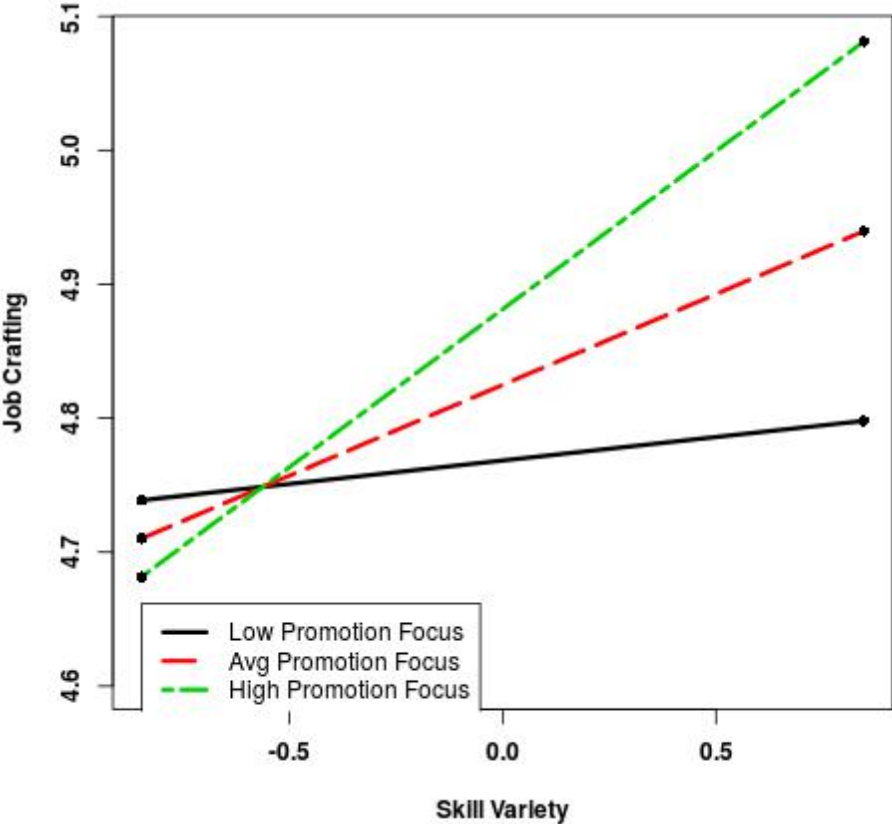


Figure 3. Interaction of promotion focus and skill variety on job crafting in Study 2



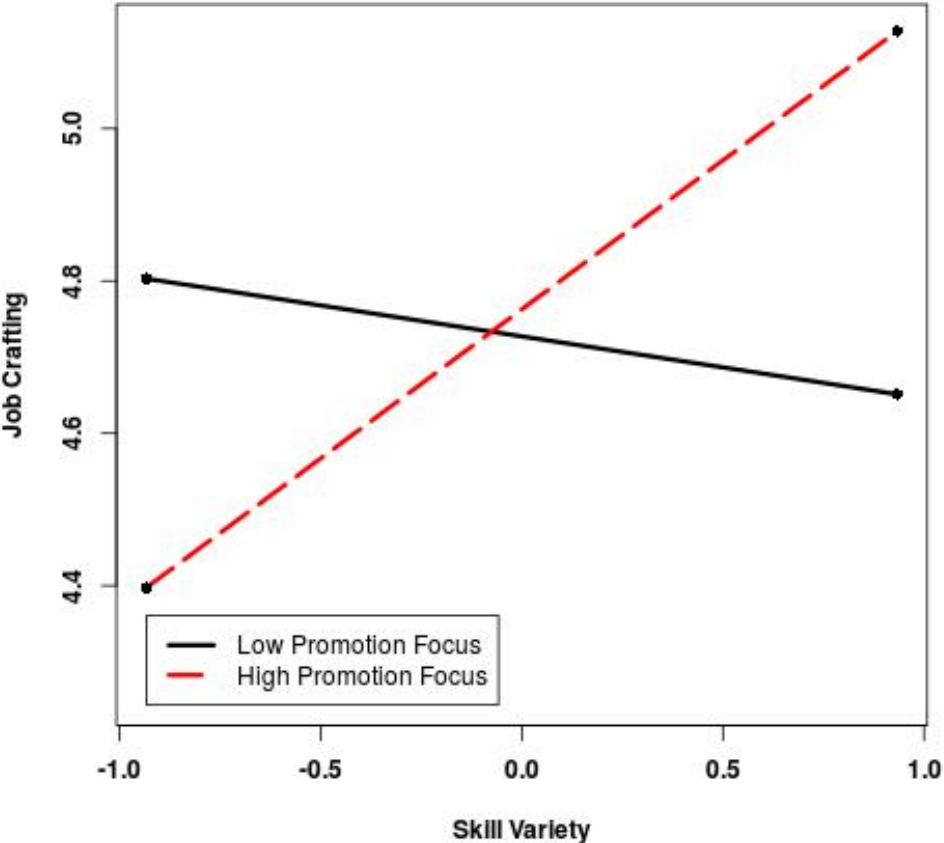


Figure 4. Interaction of promotion focus and skill variety on job crafting when procedural justice climate is low

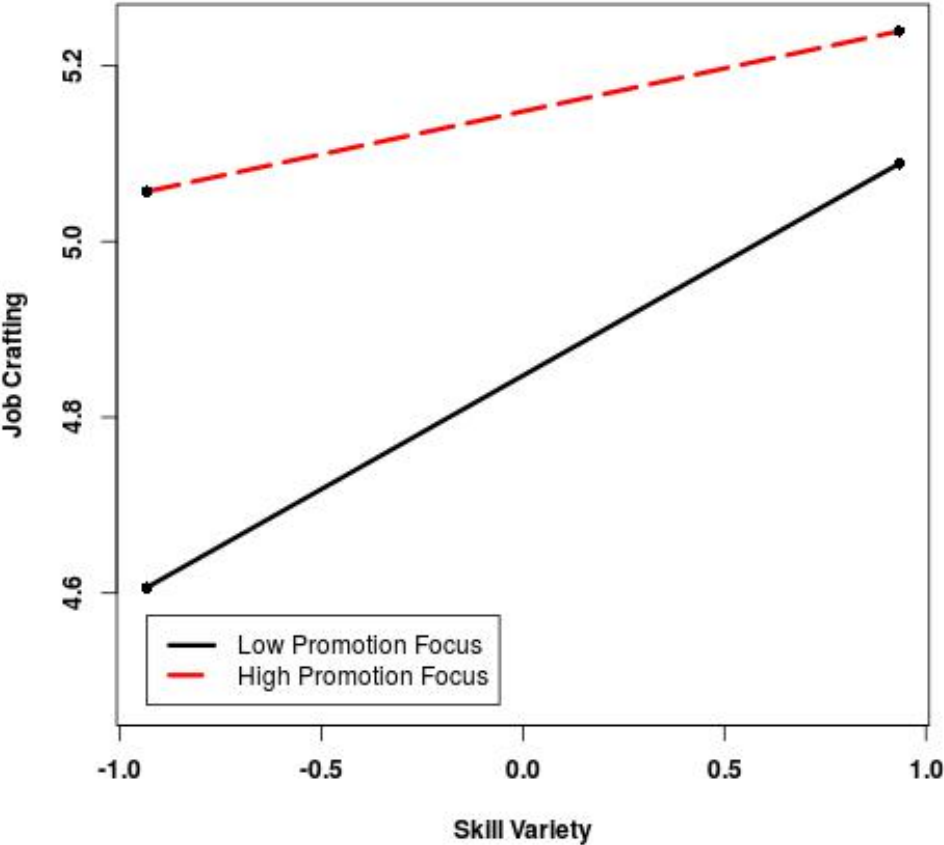


Figure 5. Interaction of promotion focus and skill variety on job crafting when procedural justice climate is high