# The Effect of Job Crafting on Performance: Mediating Role of Work Engagement

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## Abstract

***Purpose*** − The purpose of this study is to test the impact of job crafting on in/extra-role performance in Chinese context. In addition, it intends to verify the mediating effect of work engagement on the relationship between job crafting and in/extra-role performance.

***Research design, data, and methodology*** − Survey data were collected from employees of the companies in Hebei, China, for about two months, from early January 2022 to early March 2022. A total of 300 copies were distributed, and 240 copies were collected (80%), of which 222 copies were used for the final analysis. Data were analyzed for statistical tests of the measurement model and hypotheses using IBM SPSS Statistics 25 and Amos 25.

***Result*** − The analysis results are as follows. First, job crafting has a direct effect on work engagement. Second, work engagement increased employees' in/extra-role performance. Third, the mediating effect of work engagement was verified in the relationship between job crafting and employees' in/extra-role performance.

***Conclusion*** − This study expands the job demand-resource model by revealing the effect of job crafting, which changes the job given to oneself, on in/extra-role performance. In addition, this study investigated the impact of work engagement on the relationship between job crafting and in/extra-role performance.

**Keywords:** Job Crafting, Work Engagement, In-role Performance, Extra-role Performance.

**JEL Classification Code**: M12, M19, M50, M54, M59

## 1. Introduction

In the 21st-century knowledge economy era, the external environment of an organization is rapidly changing, so the boundaries of work roles are not so clear compared to the past. Organizations increasingly rely on employees to bridge the gap between clear job needs and the extra-role behaviors necessary to remain competitive (Demeroutiet et al., 2015). To achieve organizational goals, employees are not only required to complete the in-role performance (Demerouti & Cropanzano, 2010) given by the organization. Moreover, employees are also required to pursue the extra-role performances of spontaneous non-task actions of members that are informal but improve organizational efficiency (Kim et al., 2016), such as citizenship performance (Borman et al., 2001).

According to previous research, a task means a task assigned to an individual and was considered static, so employees had to follow the job designed by the manager (Tims & Bakker, 2010). However, the current organizations require employees not only to complete the things needed for the organization but also to do some voluntary behaviors that are beneficial to the organization to maximize the interests of the organization. This is because when the boss sets the requirements for the job in advance and operates it in a top-down method that provides the structural characteristics of the job, the employees cannot cope with the particularly changing working environment (Demerouti, 2014). So, in dealing with the changing organizational climate, an individual's dynamic behavior (i.e., job crafting) is considered important (Petrou et al., 2012; Tims et al., 2012; Wrzesniewski & Dutton). In this bottom-up way, it is helpful for the organization's development to understand the effect of voluntary work behavior on job performance in detail (Lee & Lee, 2018).

Previous studies have shown that employees' voluntary behavior can have multiple effects, including on employees' job attitudes and job behaviors. Therefore, more attention needs to be paid to the importance of employees as the core of the organization to maximize corporate profits (Head et al., 1995), especially employees' job attitudes (Brayfield & Crockett, 1955; Fisher et al., 2010). Work engagement is an important job attitude, defined as "a positive, fulfilling, work-related state of mind characterized by vigor, dedication, and absorption" (Schaufeli et al.,2002). Through this positive job attitude, the behavioral results of employees may be more positive. Therefore, it is necessary to explore how employees' job crafting affects their job performance through work engagement.

## 2. Theoretical background and hypotheses

### 2.1. Job Crafting

Wrzesniewski and Dutton (2001) argued that job crafting is an activity, that the performer is a job crafter, and that all performers inherently have potential as job crafters. However, this was previously introduced by Kulik, Oldman, and Hackman (1987) as the concept that 'employees will redesign their entire job on their own regardless of manager's intervention.' However, job crafting by Wrzesniewski and Dutton (2001) does not mean redesigning the entire job but changing only the task of a specific job (Berg et al., 2008). Accordingly, they defined job crafting as "physical and cognitive behaviors that change the task area or relationship area of one's work by oneself." Ghitulescu (2007) described job crafting as "the behavior in which an individual conceptualizes his/her task, establishes relationships with stakeholders to complete the job, and considers the job assigned to him/her to be meaningful." Tims and Bakker (2010) defined it as "the behavior of individuals to create a balance between the job demand and resource given to them within their abilities and needs." Petrou et al. (2012) defined it as "a voluntary action in which an organizational member who acts proactively seeks resources, seeks challenges, and reduces demands."

More specifically, according to the job demand-resources theory, job crafting can be classified into seeking resource, seeking challenge, and reducing demands (Petrou et al., 2012; Lee & Lee, 2018). Seeking resource refers to the actions used to obtain resources. These resources include learning opportunities, feedback, and advice from colleagues and supervisors. Seeking challenge refers to proactive behaviors related to finding new tasks or more responsibilities. It means minimizing one's physical workload or psychological pressure on work that reduces job demand. That is, job crafting is known to cause small changes within the boundaries, conditions, and relationships of a seeking challenge (e.g., acquiring new responsibilities), reducing demands (e.g., combining tasks), or seeking resource (Wrzesniewski & Dutton, 2001). The average employee tends to tweak their work when they feel the job needs a change (Petrou et al., 2012).

## 2.2. In-role and Extra-role Performance

Given the importance of job performance, prior researchers have explored the impact of job performance in various contexts. (Lee & Lee, 2018). For example, job performance has been defined as a key dimension in the organizational psychology of management and human resource management, among other areas related to organizational behavior research (Sonnentag & Frese, 2002); similarly, employees also give more weight to job performance because their job performance directly shapes their salary and further working planning (De Clercq et al., 2018). This means that grasping the influencers on employees' ability to achieve the organization's performance expectation is significant for both organization managers and employees. Then, in this paper, we tend to demonstrate job performance from two dimensions: in-role performance (Williams & Anderson, 1991; Holton, 2002) and extra-role performance (Becker & Kernan, 2003; Lynch et al., 1999), related to the purpose of this paper.

In-role performance, also known as task performance, refers to the outputs or outcomes related to the organizational goal (Holton, 2002). This is also in line with Williams and Anderson's research, which indicated that in-role performance could be defined as the behavior directed toward formal duties, tasks, and responsibilities such as those included in a job description (Williams & Anderson, 1991). That is to say, meeting quantity and quality standards and fulfilling obligations or managing responsibilities are significant parts of task performance.

Similarly, extra-role performance, known as citizenship performance or organizational citizenship behavior, refers to outcomes of employees' discretionary behaviors that are beneficial to an organization (Becker & Kernan, 2003). According to Lynch et al. (1999)' research, extra-role performance is the activities that are necessary for organizational effectiveness but are discretionary. To be more specific, the differences between in-role and extra-role performance are citizenship performance does not refer to task-related output but to production that contributes to creating a positive social and psychological work environment.

## 2.3. Work Engagement

### 2.3.1. Job Crafting
According to Schaufeli et al.'s research, work engagement refers to the positive, fulfilling, and work-related state of mind (Schaufeli et al., 2002). And the significant features of work engagement are absorption, dedication, and vigor (Schaufeli et al., 2006). More specifically, absorption refers to the employee who fully focuses on and is engrossed in their work happily. Thus, it's difficult for them to escape from work and to perceive the loss of time. Dedication is related to the sense of involvement. Employees who are strongly involved in their job are more likely to experience a feeling of enthusiasm, challenge, and achievement. And vigor refers to high levels of energy and mental energy (Schaufeli and Bakker, 2004). That is to say, employees with high work engagement more easily feel enthusiastic about their work and get a sense of accomplishment.

### 2.3.2. Job Crafting and Work Engagement
As we mentioned before, seeking resources and challenges, as the two dimensions of job crafting, are about proactively changing the job features, prior researchers also indicated that once employees tend to seek more job resources and challenges, their mind and work environment would also be changed (Tims et al., 2013). That is, these two dimensions of job crafting include changing what one want in the job, how one approaches this and how one interacts with others. Lined with JD-R theory, Bakker documented that job challenges and job resources are associated with work engagement and that encourage employees change their own job challenges and job resources (Bakker, 2011). Particularly, compared to traditional job design literature, research on job crafting is a bottom-up approach where employees take the initiative to change their job characteristics to align job with their personal preferences and abilities (Tims & Bakker, 2010; Wrzesniewski & Dutton, 2001). Followed, more and more studies proved the theoretical and empirical evidence that the dimensions of seeking resource and challenges of job crafting positively influence employees' individual outcomes including well-being and work engagement (Tims et al., 2013; Wrzesniewski & Dutton, 2001).

Research on job crafting shows the different effects of the dimension of reducing demands of job crafting on work outcomes. For example, some results are not statically significant with work engagement (Tims, Bakker & Derks, 2012; 2013), and others are negatively related (Brenenninkmeijer & Hekert-Koning, 2015; Demerouti, et al., 2015). It also showed negative insignificant results (Tims et al., 2015). However, Sakuraya, Shimazu, Lmamura, Namba, and Kawakami (2016) said that the implementation of the job crafting program had the effect of improving the work engagement and reducing stress of Japanese managers. Which means, the dimension of reducing demands of job

crafting could decrease the deficit between employees and their work context, which finally leads to increased well-being. In other words, finding the balance between employees themselves and job requirement is more easily to makes employees feel better and more interested in their work, resulting in more engagement into their work.

Therefore, the hypotheses could be presented as followed:

**Hypothesis 1-1:** Job crafting in the form of seeking resource is positively associated with work engagement.
**Hypothesis 1-2:** Job crafting in the form of seeking challenge is positively associated with work engagement.
**Hypothesis 1-3:** Job crafting in the form of reducing demands is positively associated with work engagement.

### 2.3.3. Work Engagement and in/extra-role performance

Prior research also revealed the positive relationship between work engagement and job performance including both in-role and extra-role performance (Schaufeli & Bakker, 2010, 2004). Stemmed from the definition of work engagement, work engagement refers to "the positive, fulfilling and work-related state of mind that is characterized by vigor, dedication, and absorption" (Schaufeli & Bakker, 2004, p.295). That is to say, employees who are engaged in their work, are more likely to feel a sense of energy and create an effective connection with their job, which finally increased their job performance. Moreover, it's easy to understand that once employees are immersed in their work, they will be fully engaged in the work, and feel fun and a sense of achievement in their work, which ultimately enhances their job performance. More specifically, based on Motowidlo and Van Scotter (1994), in-role performance refers to the outcomes that contribute to the goal of the organization and behaviors as described in their job profile. Thus, research on work engagement has confirmed the positive relationships between work engagement and in-role performance from various perspectives (Leana et al., 2009; Van Wingerden, 2016).

Regarding to the extra-role performance, some researchers also illustrated the positive impact of work engagement on the extra-role performance. For example, according to the social cognitive theory, Salanova, Lorente, Chambel, and Martínez (2011) found that staff nurses' extra-role performance could be determined by work engagement and nurse self-efficacy. Applied to the hotel and restaurants context, employee's extra-role performance also could be shaped by work engagement positively (Salanova et al., 2005). Specifically, extra-role performance is related to the employee's work behaviors at a level that is over minimally required or expected level (Becker & Kernan, 2003). In a words, in order to get more goals beyond the generally expected levels, employees need to invest more energy, enthusiasm as well as time. Thus, employees with high work engagement are more likely to show extra-role performance. Taken together, we therefore hypothesize the following.

**Hypothesis 2:** Work engagement positively affects in-role performance.
**Hypothesis 3:** Work engagement positively affects extra-role performance.

### 2.3.4. The mediating role of work engagement

The two dimensions of seeking resources and challenges of job crafting are not only positively associated with work engagement, they also have the potential to shape employee's job performance (Leana et al., 2009). For instance, Lyons indicated that sales people showed many job crafting episodes that contributed to their performance via making improvements that benefitted the customer or the company and/or improved skills (Lyons, 2008). Which means, crafting the job via seeking more resources and challenges may also indirectly relate to performance via its positive relationship with work engagement. One of the reason may be that engaged employees are likely to experience positive emotions, such as a sense of achievement and enthusiasm (Demerouti & Cropanzano, 2010). Then, employees with positive emotions are more easily to open their thoughts and put more time and energy into their work, which makes them more easily to perform better (Fredrickson, 2001). Related to the JD-R theory, employees' motivation, involvement and work engagement could be enhanced when the employees seek more job resources and challenges, which in turn results in high levels of job performance (Schaufeli & Bakker, 2004; Tims et al., 2013). Which means, we expect that job crafting may have indirect effects on performance through work engagement. In other words, we expect that work engagement partially mediates the relationship between job crafting in forms of seeking resources and challenges and job performance. Followed the argument that seeking resources and challenges may indirectly impact job performance via work engagement, we could expect that work engagement may also mediate the relationship between the dimension of reducing demands and job performance. In other words, employees who decreased their job demands may-more likely to invest higher levels of work engagement and lead to higher level of in-role and extra-role job performance. Thus, we hypothesize:

**Hypothesis 4:** Work engagement mediates the relationship between job crafting in the form of seeking resources and 1) in-role performance, 2) extra-role performance.
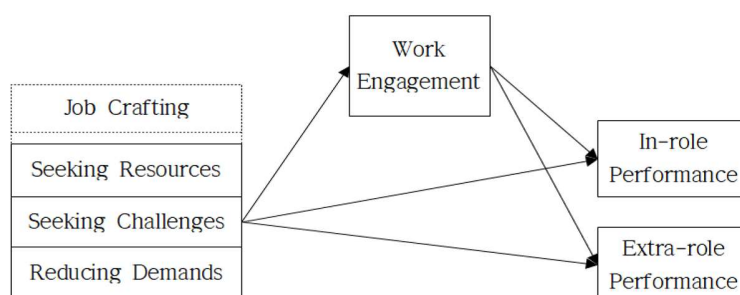**Hypothesis 5:** Work engagement mediates the relationship between job crafting in the form of seeking challenges and 1) in-role performance, 2) extra-role performance.
**Hypothesis 6:** Work engagement mediates the relationship between job crafting in the form of reducing demands and 1) in-role performance, 2) extra-role performance.



**Figure 1:** Research Model

# 3. Empirical Study

## 3.1. Sample and Data Collection

Most of the studies' samples were measured without being limited to specific regions and companies. Samples were selected mainly for unspecified subjects because, when limited to regions or companies, regional characteristics and corporate characteristics could be reflected and pose a problem in the possibility of generalization of research results. However, this study partially revised and supplemented the survey contents to help respondents understand, and distributed it mainly to knowledge workers to improve their understanding of the survey and the quality of responses.

This study surveyed employees of the average companies in Hebei, China for about two months from early January 2022 to early March 2022. A total of 300 copies were distributed, and 240 copies were collected (80%), of which 222 copies were used for the final analysis, excluding 18 questionnaires showing insincere responses. It was judged that the size of the obtained data was not unreasonable in the statistical analysis for this study, and it was used for the final analysis. All the survey contents were translated into Chinese, and the survey was conducted after being reviewed by a Chinese translation company, and in this process, the survey results were used only for statistical purposes and absolute secrets were guaranteed. Finally, Data were analyzed for statistical tests of the measurement model and hypotheses using IBM SPSS Statistics 25 and Amos 25. Amos is a visual statistical program specially used for Structural Equation Modeling, path analysis, and confirmatory factor analysis.

## 3.2. Measurements

### 3.2.1. Job crafting

To measure employee's job crafting, this paper used the 13 items stemmed from the Petrou et al., (2012)'research on a seven-point scale (1=not at all, 7=very much). More specifically, the dimensions of seeking resources are measured via six items, they are "I ask others for feedback on my job performance." "I ask colleagues for advice." "I ask my supervisor for advice." "I try to learn new things at work.'" I contacted other people from work (e.g., colleagues, supervisors) to get the necessary information for completing my tasks." and "When I have difficulties or problems at my work, I discuss them with people from my work environment." The dimension of seeking challenge are measured by three items, they are "I ask for more tasks if I finish my work." "I ask for more responsibilities." and "I ask for more odd job." Then, the dimension of reducing challenges are measured via four items, they are "I try to ensure that my work is emotionally less intense." "I make sure that my work is mentally less intense." "I try to ensure

that my work is physically less intense." and "I try to simplify the complexity of my tasks at work."

### 3.2.2. In-role performance

Based on the Williams and Anderson (1991)'s research where developed the original in-role performance scales via developing the additional items which were based on the definition of in-role performance as outcomes that are recognized by formal reward systems and are part of the requirements as required in job descriptions, this paper uses the seven items to measure the employee's in-role performance on a seven-scale point (1=not at all, 7=very much). Specifically, "I adequately completes assigned duties." "I fulfill responsibilities specified in job description." "I perform tasks that are expected of me." "I meet formal performance requirements of the job." "I engage in activities that will directly affect my performance evaluation." "I neglect aspects of the job I am is obligated to perform(R)." and "I fail to perform essential duties(R)."

### 3.2.3. Extra-role performance

Regarding to the extra-role performance, we use five items stemmed from the Lynch et al.'s research (1999). These five items are "I make constructive suggestions to improve the overall functioning of my work group." "I encourage others to try new and more effective ways to doing their job." "I take action to protect the organization from potential problems." "I go out of my way to help new employees" and "I volunteer for things that are not required." on a seven-point scale (1=not at all, 7=very much).

### 3.2.4. Work engagement

According to the definition of work engagement, Schaufeli and Bakker (2004) indicated that work engagement could be known as "the positive, fulfilling and work-related state of mind that is characterized by vigor, dedication, and absorption" (Schaufeli & Bakker, 2004, p.295). Thus, this paper uses the nine items to measure the work engagement based from the Schaufeli et al.'s research (2006) on a seven-point scale (1=not at all, 7=very much). There are "At my work, I feel bursting with energy." "At my job, I feel strong and vigorous." "I am enthusiastic about my job." "My job inspires me." "I feel happy when I am working intensely." "I am proud of the work that I do." "I get carried away when I am working." "I am engaged in my work." and "When I am working, I forget everything else around me."

### 3.2.5. Control Variables

Demographic variables included gender, age, educational background, occupation and department. Thus, demographic diversity also ensures the representativeness of the sample.

## 4. Analysis and Results

### 4.1. Demographic Analysis

The demographic statistics of this study were shown in Table 1. For 222 responders, 54% were male, 46% were female. The majority of participants were aged 20-29 (36.5%). 2.7% were under the age of 20, 24.8% were 30-39, 18.5% were 40-49 and only 9% were over 60. 32.4% participants were junior and 32% were graduated from the college. Then, 20.7% participants were senior high school. The last 12.6% participants and 2.3% participants were postgraduate and Ph.D. As for occupation, more than half of the participants were employees (65.8%), 14.9% participants were minister. And over the half of the participants were in the department of office (53.2%). Only four of the participants were reported that their department were R&D (1.8%).

**Table 1:** Demographic Analysis Results

| Variable | | Frequency | Percentage (%) |
|---|---|---|---|
| Gender | Male | 120 | 54.0 |
| | Female | 102 | 46.0 |
| Age | Under 20 | 6 | 2.7 |
| | 20-29 | 61 | 27.5 |

| | | | |
|---|---|---|---|
| | 30-39 | 55 | 24.8 |
| | 40-49 | 41 | 18.5 |
| | 50-59 | 57 | 25.7 |
| | Over 60 | 2 | 9.0 |
| Educational background | Senior high school | 46 | 20.7 |
| | College | 72 | 32.4 |
| | University | 71 | 32.0 |
| | Graduate school | 31 | 14.9 |
| Occupation | Trainee | 17 | 7.7 |
| | Employee | 146 | 65.8 |
| | Manager | 22 | 9.9 |
| | Director | 33 | 14.9 |
| | CEO | 4 | 1.8 |
| Department | Administration | 118 | 53.2 |
| | Marketing | 31 | 14.0 |
| | R&D | 4 | 1.8 |
| | Technical | 34 | 15.3 |
| | Production | 35 | 15.8 |
| Total | | 222 | 100 |

## 4.2. Reliability and Validity

By calculating Cronbach's α, we examined the internal consistency among items for each construct. The results in Table 2 where all α were higher than 0.9 indicated that there was a good internal consistency at every construct.

Principal component factor analysis based on varimax rotation in SPSS 22.0 program was used to survey convergent validity. As shown in <Table 3>, there were six principal components consisting of the work engagement (engage), extra-role performance (exro), seeking resources (resou), reducing demands (deman), in-role performance (inro) and seeking challenges (chall), wherein factor loading values of items indicated that all the items of each construct were judged to converge to their own construct.

**Table 2:** Results of Factor Analysis

| Items | 1 | 2 | 3 | 4 | 5 | 6 | α |
|---|---|---|---|---|---|---|---|
| engage4 | **.767** | .157 | .204 | .139 | .219 | .146 | |
| engage8 | **.730** | .225 | .244 | .081 | .291 | .111 | |
| engage1 | **.726** | .214 | .211 | .064 | .234 | .291 | |
| engage5 | **.690** | .309 | .239 | .172 | .201 | .127 | |
| engage7 | **.679** | .288 | .255 | .256 | .205 | .178 | .950 |
| engage6 | **.678** | .312 | .283 | .091 | .177 | .226 | |
| engage2 | **.676** | .294 | .291 | .233 | .127 | .206 | |
| engage9 | **.660** | .269 | .171 | .200 | .183 | .235 | |
| engage3 | **.641** | .365 | .328 | .153 | .149 | .223 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| exro2 | .297 | **.824** | .164 | .097 | .224 | .185 | |
| exro3 | .311 | **.818** | .276 | .060 | .184 | .185 | |
| exro1 | .287 | **.807** | .205 | .152 | .166 | .211 | .950 |
| exro4 | .271 | **.806** | .247 | .157 | .215 | .181 | |
| exro5 | .248 | **.793** | .292 | .147 | .146 | .263 | |
| resou3 | .285 | .787 | **.295** | .131 | .198 | .247 | |
| resou2 | .420 | .353 | **.743** | .173 | .200 | .196 | |
| resou1 | .436 | .345 | **.734** | .180 | .217 | .187 | |
| resou5 | .420 | .393 | **.727** | .173 | .207 | .173 | .975 |
| resou6 | .452 | .363 | **.725** | .164 | .203 | .170 | |
| resou4 | .449 | .400 | **.713** | .174 | .176 | .184 | |
| deman3 | .207 | .090 | .078 | **.847** | .053 | .153 | |
| deman2 | .039 | .096 | .114 | **.825** | -.022 | -.036 | |
| deman1 | .169 | .157 | .030 | **.815** | .129 | .075 | .874 |
| deman4 | .155 | .073 | .183 | **.787** | .097 | .244 | |
| inro2 | .322 | .264 | .182 | .083 | **.831** | .180 | |
| inro1 | .346 | .225 | .197 | .092 | **.819** | .196 | |
| inro3 | .312 | .301 | .181 | .102 | **.817** | .173 | .926 |
| inro4 | .391 | .450 | .166 | .203 | **.197** | .659 | |
| inro5 | .350 | .453 | .195 | .191 | **.245** | .649 | |
| chall3 | .364 | .410 | .252 | .177 | .263 | **.629** | |
| chall2 | .405 | .412 | .241 | .231 | .242 | **.615** | .947 |
| chall1 | .395 | .481 | .231 | .211 | .236 | **.607** | |
| **R²** | 46.65 | 10.98 | 6.12 | 4.61 | 3.92 | 2.72 | |
| **ΔR²** | 46.65 | 57.63 | 63.76 | 68.38 | 72.31 | 75.04 | |

## 4.3. Correlations among Constructs

To test the discriminant validity among constructs, confirmatory factor analysis was conducted. The results of the analysis which include correlation coefficient, the squared correlation coefficients and AVE are shown in Table 3. And all the values of AVE are above 0.5, and bigger than the squared correlation coefficients respectively, which implies a good discriminant validity.

**Table 3:** Results of Correlation Analysis

| Factors | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| (1) seeking resources | **.866** | | | | | |
| (2) seeking challenges | .631 (.398) | **0.889** | | | | |
| (3) reducing demands | .387 (.149) | .328 (.107) | **.643** | | | |

| | | | | | |
|---|---|---|---|---|---|
| (4) work engagement | .749 (.561) | .710 (.504) | .487 (.237) | **.682** | | |
| (5) in-role performance | .836 (.698) | .691 (.477) | .513 (.263) | .834 (.695) | **.859** | |
| (6) extra-role performance | .774 (.599) | .636 (.404) | .450 (.202) | .850 (.722) | .758 (.574) | **.953** |

Note: The figures on diagonal line indicate the AVE, and the figures in ( ) are the squares of correlation coefficients

## 4.4. Testing Measurement Model

AMOS 25 was used to test measurement model. With the results ($\chi2$=620.398 (df=449, p=.000), GFI=0.854, AGFI=0.828, RFI=0.932, IFI=0.982, TLI=0.980, CFI=0.982, RMSEA=0.042), a good model fit was shown in Table 4.

**Table 4:** Results of Confirmatory Factor Analysis

| Constructs | Item | Estimate | S.E. | C.R. | P |
|---|---|---|---|---|---|
| seeking resources | res6 | 1.000 | | | |
| | res5 | 1.056 | .042 | 24.949 | *** |
| | res4 | 1.062 | .039 | 27.343 | *** |
| | res3 | 1.003 | .041 | 24.549 | *** |
| | res2 | 1.073 | .039 | 27.790 | *** |
| | res1 | 1.079 | .042 | 25.869 | *** |
| seeking challenges | cha3 | 1.000 | | | |
| | cha2 | .960 | .032 | 29.677 | *** |
| | cha1 | 1.026 | .036 | 28.703 | *** |
| reducing demands | red4 | 1.000 | | | |
| | red3 | 1.215 | .112 | 10.898 | *** |
| | red2 | 1.142 | .098 | 11.683 | *** |
| | red1 | 1.082 | .098 | 11.008 | *** |
| work engagement | eng9 | 1.000 | | | |
| | eng8 | .942 | .062 | 15.117 | *** |
| | eng7 | 1.070 | .069 | 15.460 | *** |
| | eng6 | .912 | .061 | 15.036 | *** |
| | eng5 | .901 | .061 | 14.751 | *** |
| | eng4 | 1.055 | .066 | 15.959 | *** |
| | eng3 | .867 | .062 | 14.082 | *** |
| | eng2 | 1.051 | .066 | 15.843 | *** |
| | eng1 | 1.134 | .070 | 16.091 | *** |
| in-role performance | inr1 | 1.000 | | | |
| | inr2 | .990 | .043 | 22.843 | *** |
| | inr3 | .966 | .041 | 23.458 | *** |
| | inr4 | 1.041 | .041 | 25.297 | *** |
| | inr5 | 1.024 | .045 | 22.832 | *** |

| | | | | | |
|---|---|---|---|---|---|
| | ext1 | 1.000 | | | |
| extra-role performance | ext2 | .981 | .022 | 44.978 | *** |
| | ext3 | .957 | .021 | 45.035 | *** |
| | ext4 | 1.005 | .022 | 45.979 | *** |
| | ext5 | 1.037 | .022 | 47.131 | *** |

## 4.5. Testing Hypotheses

Amos 25 was used to conduct hypotheses analysis. As results shown in Table 5, all of the basic hypotheses are supported. Also, the model fit indexes are shown as follow: $\chi2$=621.907 (DF=450, P=.000), GFI=.853, AGFI=.828, CFI=.982, TLI=.980, IFI=.982, RFI=.932, NFI=.938, RMSEA=.042. According to the results in Table 5. Seeking resources (C.R. =7.224, p<.000), seeking challenges (C.R. =6.279, p<.000) and reducing demands (C.R.= -.281, p<.000) positively affect employees' work engagement. Thus, H1 is supported. And work engagement positively affects in-role performance (C.R. = 5.257, p<.000) and on extra-role performance (C.R. =8.062, p<.000). Which means, H2 and H3 are supported.

**Table 5:** Results of Path Analysis

| H | Path | Estimate | S.E. | C.R. | P | Results |
|---|---|---|---|---|---|---|
| **H1-1** | seeking resources → work engagement | .287 | .040 | 7.224 | *** | supported |
| **H1-2** | seeking challenges → work engagement | .254 | .040 | 6.279 | *** | supported |
| **H1-3** | reducing demands → work engagement | .244 | .064 | 3.841 | *** | supported |
| **H2** | work engagement → in-role performance | .357 | .068 | 5.257 | *** | supported |
| **H3** | work engagement → extra-role performance | 1.021 | .127 | 8.062 | *** | supported |

In order to further explore whether work engagement plays the mediating roles in the process of job crafting in forms of seeking resources, seeking challenges and reducing challenges and in-role/extra-role performance. Mediation effects analysis based on Bootstrap in Amos 25 was used. As shown in Table 6, the effect of the seeking resources on the in-role performance (95% confidence interval [CI] = [.067, .156]) and extra-role performance (95% confidence interval [CI] = [.183, .433]) was mediated by work engagement. The impact of the seeking challenges on the in-role performance (95% confidence interval [CI] = [.044, .156]) and extra-role performance (95% confidence interval [CI] = [.139, .421]) was mediated by work engagement. Similarly, the influences of the reducing demands on the in-role performance (95% confidence interval [CI] = [.043, .161]) and extra-role performance (95% confidence interval [CI] = [.134, .463]) was mediated by work engagement. Which means, H4, H5 and H6 are supported.

**Table 6:** Results of Mediation Effect Analysis

| H | DV | IV | [Lower, Upper] | Estimate | Results |
|---|---|---|---|---|---|
| H4-1 | In-role performance | seeking resources | [.067, .156] | .103 | Supported |
| H5-1 | | seeking challenges | [.044, .156] | .091 | Supported |
| H6-1 | | reducing demands | [.043, .161] | .087 | Supported |
| H4-2 | Extra-role performance | seeking resources | [.183, .433] | .293 | Supported |

| H5-2 | | seeking challenges | [.139, .421] | .259 | Supported |
| H6-2 | | reducing demands | [.134, .463] | .249 | Supported |

## 5. Discussion

### 5.1. Research Summary

In this research, we explored the relationships among three dimensions of job crafting, seeking resources, seeking challenges and reducing demands, work engagement, in-role performances and extra-role performances. To be more specifically, a questionnaire survey method was conducted to collect data. This research developed hypotheses about and tested, how the impact of three dimensions of job crafting shape employee's work engagement, in-role and extra-role performance, as well as the role of the work engagement in the effect of each of the three dimensions of job crafting on in-role/extra-role performances. The findings of this research are summarized as followings.

Firstly, all the three dimensions of job crafting positively affect employees' work engagement. That is to say, job crafting can foster employees' work engagement. Specifically, the effect of seeking resources (C.R.= 7.224, p<.000) and seeking challenges (C.R.= 6.279, p<.000) on work engagement indicated that employee who tends to change their work environment via seeking more job resources and opportunities is more likely to invest more time and energy into their work, which finally fostered their work engagement. Then, different from prior research that revealed the negative relationship between work engagement and reducing demands (Demerouti et al., 2015), work engagement could be influenced by reducing demands positively (C.R.= 3.841, p<.000).

Secondly, the results of this research that the effect of work engagement on in-role performance (C.R.= 5.257, p<.000) and extra-role performance (C.R.=8.062, p<.000) demonstrate that compared to employees who feel lower level of work engagement, employees with higher engagement are more likely to attitude their job positively and throw themselves into their job, leading to more performance both in their in-role and extra-role job context (Salanova et al., 2011; Van Wingerden, 2016).

Thirdly, the results of H4, H5 and H6 are also consistent with previous studies (Schaufeli & Bakker, 2004; Tims et al., 2013). More specifically, work engagement, as an important mental process, not only affects in-role and extra-role performance directly but also mediates the impact of seeking resources, seeking challenges, and reducing demands on in-role and extra-role performance.

### 5.2. Theoretical and Practical Implication

In the basis of job crafting research, work engagement research and in-role/extra-role performance research, this research concludes some theoretical implications as follows.

Firstly, this study contributes to the expansion of the job demand-resource model by revealing the effect of job crafting, which changes the job given to oneself, on job performance. The perspective of 'balance between job resources and job demands' presented by the job demand-resource model specifically suggests the role of job crafting that actively changes job characteristics and environment. Although this shows a close correlation with the results at the individual and organizational level, it was not possible to explore the effect of job crafting at the individual level for the job itself on the group performance. From the perspective of job redesign, this study verified that knowledge workers improve their job performance through job crafting that actively changes their job characteristics and environment.

Secondly, this study investigated the predictive variables affecting work engagement and investigated the effect of work engagement on the relationship between job crafting and in/extra-role performance. In other words, it has theoretical significance in that it expanded the existing research by examining the pathways of job crafting and work engagement on in/extra-role performance and revealing the effect of job crafting based on work engagement.

Practical implications of this research directly along with the findings.

Firstly, based on the job demand-resource model, job crafting allows employees to actively change their job characteristics and the environment from the perspective of job redesign. Therefore, to satisfy their desires, employees with a strong will to reinvent their jobs should directly redesign their jobs meaningfully and perform a good job challenge with job resources to increase their enthusiasm for the job. In addition, In addition, when performing tasks

with high autonomy and creativity, managers should appropriately reduce employees' work requirements to improve their work engagement.

Secondly, job crafting has a direct and significant effect on in/extra-role performance, and by empirically verifying what mediating role work engagement plays in this relationship. When job crafting is carried out to improve job performance, the organization appropriately increases job resources, which may reduce the difficulty of employees' work because the resources available to employees are increased. In addition, encouraging employees to actively choose challenging jobs can stimulate their desire for success, thus increasing their work enthusiasm. When the work demand is reduced, employees can give full play to their autonomy to choose their work mode, which is also conducive to improving their work engagement. Therefore, managers should encourage employees to devote themselves to their work with high enthusiasm and get additional resources from their managers and colleagues spontaneously.

Last but not least, managers need to provide a highly autonomous and challenging job environment for employees with a strong desire for job crafting to improve their enthusiasm for work. This is because they are eager to realize themselves by focusing on challenging work. In addition, to reduce the psychological burden of employees, an appropriate reduction of relevant job demands is appropriate.


### 5.3. Limitations and Directions for Future Research

There are several limitations in this research that could be further studied in the future.

Firstly, previous studies on reducing demands among the factors of job crafting are insufficient. Although some studies have explored that work enthusiasm and job performance are the dependent variables of job remodeling, most support the negative effects of reducing demands, and only a few support the positive significance of reducing demands (Jiang, Wang, & Yan, 2022). In addition, this study focuses on the mediating mechanism of work engagement. It does not explore the moderating variables of the effect of job crafting on work engagement and job performance. To examine how job crafting affects organization- related variables, it is necessary to present reliable research results through continuous and in-depth studies in the future.

Secondly, the questionnaire method has a strong possibility of subjectivity. The uncertainty in the questionnaire may be caused by the respondent's preconceived ideas or prejudices, the emotional state of the answer, or lack of understanding of the question itself. Therefore, face-to-face or through the qualitative method is necessary to enhance the respondents' understanding. In addition, employees' input is not the same work every day. The level of work engagement may be due to external factors such as the relationship between environmental factors and his supervisors and colleagues but changes. The impact of job crafting on work engagement may vary depending on the environment. Therefore, further research should be proper control of exogenous variables as far as possible.

## References

Allameh, S. M., & Alinajimi, S. (2012). The effect of self-concept and organizational identity on organizational citizenship behavior. *International Journal of Human Resource Studies, 2*(1), 175-187.

Ashforth, B. E., & Mael, F. (1989). Social identity theory and the organization. *Academy of Management Review, 14*(1), 20-39.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*(2), 191-215.

Bakker, A. B. (2011). An evidence-based model of work engagement. *Current Directions in Psychological Science, 20*(4), 265–269.

Bakker, A. B., Tims, M., & Derks, D. (2012). Proactive personality and job performance: The role of job crafting and work engagement. *Human Relations, 65*(10), 1359-1378.

Becker, T. E., & Kernan, M. C. (2003). Matching commitment to supervisors and organizations to in-role and extra-role performance. *Human Performance, 16*(4), 327-348.

Berg, J. M., Dutton, J. E., & Wrzesniewski, A. (2008). *What is job crafting and why does it matter? Theory-to-practice briefing*. Ann Arbor: Ross School of Business, University of Michigan.

Borman, W. C., Penner, L. A., Allen, T. D., & Motowidlo, S. J. (2001). Personality predictors of citizenship performance. *International Journal of Selection and Assessment, 9*(1−2), 52-69.

Brayfield, A. H., & Crockett, W. H. (1955). Employee attitudes and employee performance. *Psychological Bulletin, 52*(5), 396-424.

Brenninkmeijer, V., & Hekkert-Koning, M. (2015). To craft or not to craft: The relationships between regulatory focus, job crafting and work outcomes. *Career Development International, 20*(2), 147-162.

Corley, K. G., Harquail, C. V., Pratt, M. G., Glynn, M. A., Fiol, C. M., & Hatch, M. J. (2006). Guiding organizational identity through aged adolescence. *Journal of Management Inquiry, 15*(2), 85-99.

De Clercq, D., Haq, I. U., & Azeem, M. U. (2018). Workplace ostracism and job performance: roles of self-efficacy and job level. *Personnel Review, 48*(1), 184-203.

Demerouti, E. (2014). Design your own job through job crafting. *European psychologist, 19*(4), 237-247.

Demerouti, E., Bakker, A. B., & Gevers, J. M. (2015). Job crafting and extra-role behavior: The role of work engagement and flourishing. *Journal of Vocational Behavior, 91*, 87-96.

Demerouti, E., Bakker, A. B. & Halbesleben, J. R. (2015). Productive and counterproductive job crafting: A daily diary study. *Journal of Occupational Health Psychology, 20*(4), 457-469.

Demerouti, E., Cropanzano, R., Bakker, A., & Leiter, M. (2010). From thought to action: Employee work engagement and job performance. *Work Engagement: A Handbook of Essential Theory and Research, 65*(1), 147-163.

Fisher, R., McPhail, R., & Menghetti, G. (2010). Linking employee attitudes and behaviors with business performance: a comparative analysis of hotels in Mexico and China. *International Journal of Hospitality Management, 29*(3), 397-404.

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist*, *56*(3), 218-226.

Ghitulescu, B. E. (2007). *Shaping tasks and relationships at work: Examining the antecedents and consequences of employee job crafting.* Doctoral dissertation, University of Pittsburgh.

Halbesleben, J. R. (2010). A meta-analysis of work engagement: Relationships with burnout, demands, resources and consequences. *Work Engagement: A Handbook of Essential Theory and Research, 8*(1), 102-117.

Head, J. H., Handlon, J. W., & Martin, E. (1995). The new realism: Maximizing employee value through HR alignment. *Employment Relations Today*, *22*(3), 1-7.

Holton III, E. F. (2002). Theoretical assumptions underlying the performance paradigm of human resource development. *Human Resource Development International*, *5*(2), 199-215.

Jiang, F., Wang, L., & Yan, L. (2022). The effects of job crafting on task and contextual performance: Focusing on the mediating effect of work engagement. *The Journal of Industrial Distribution & Business, 13*(5), 27-40.

Kim, K. Y., Eisenberger, R., & Baik, K. (2016). Perceived organizational support and affective organizational commitment: Moderating influence of perceived organizational competence. *Journal of Organizational Behavior, 37*(4), 558-583.

Kulik, C. T., Oldham, G. R., & Hackman, J. R. (1987). Work design as an approach to person-environment fit. *Journal of Vocational Behavior, 31*(3), 278-296.

Leana, C., Appelbaum, E., & Shevchuk, I. (2009). Work process and quality of care in early childhood education: The role of job crafting. *Academy of Management Journal*, *52*(6), 1169-1192.

Lee, J. Y., & Lee, Y. (2018). Job crafting and performance: Literature review and implications for human resource development. *Human Resource Development Review*, *17*(3), 277-313.

Lynch, P. D., Eisenberger, R., & Armeli, S. (1999). Perceived organizational support: Inferior versus superior performance by wary employees. *Journal of Applied Psychology, 84*(4), 467-483.

Lyons, P. (2008). The crafting of jobs and individual differences. *Journal of Business and Psychology, 23*(1), 25-36.

Motowidlo, S. J., & Van Scotter, J. R. (1994). Evidence that task performance should be distinguished from contextual performance. *Journal of Applied Psychology, 79*(4), 475-480.

Petrou, P., Demerouti, E., Peeters, M. C., Schaufeli, W. B., & Hetland, J. (2012). Crafting a job on a daily basis: Contextual correlates and the link to work engagement. *Journal of Organizational Behavior*, *33*(8), 1120-1141.

Ran, B., & Duimering, P. R. (2007). Imaging the organization: Language use in organizational identity claims. *Journal of Business and Technical Communication*, *21*(2), 155-187.

Sakuraya, A., Shimazu, A., Lmamura, K., Namba, K., & Kawakami, N. (2016). Effects of a job crafting intervention program on Work engagement among Japanese employees: a pretest- posttest study. *BMC psychology, 4*(1), 1-9.

Salanova M., Agut S., & Peiro´ J.M. (2005). Linking organizational resources and work engagement to employee performance and customer loyalty: the mediation of service climate. *Journal of Applied Psychology, 90*(6), 1217–1227

Salanova, M., Lorente, L., Chambel, M. J., & Martínez, I. M. (2011). Linking transformational leadership to nurses' extra-role performance: the mediating role of self-efficacy and work engagement. *Journal of Advanced Nursing*, *67*(10), 2256-2266.

Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior, 25*(3), 293-315.

Schaufeli, W. B., & Bakker, A. B. (2010). Defining and measuring work engagement: Bringing clarity to the concept. *Work Engagement: A Handbook of Essential Theory and Research, 12,* 10-24.

Schaufeli, W. B., Bakker, A. B. & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: a cross-national study. *Educational and Psychological Measurement, 66*(4), 701-716.

Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness Studies, 3*(1), 71-92.

Sonnentag, S., & Frese, M. (2002). Performance concepts and performance theory. *Psychological Management of Individual Performance*, *23*(1), 3-25.

Tims, M., & Bakker, A. B. (2010). Job crafting: Towards a new model of individual job redesign. *Sabinet Journal of Industrial Psychology*, *36*(2), 1-9.

Tims, M., Bakker, A. B., & Derks, D. (2012). Development and validation of the job crafting scale. *Journal of Vocational Behavior*, *80*(1), 173-186.

Tims, M., Bakker, A. B., & Derks, D. (2013). The impact of job crafting on job demands, job resources, and well-being. *Journal of Occupational Health Psychology*, *18*(2), 230–240.

Tims, M., Bakker, A. B., & Derks, D. (2015). Job crafting and job performance: A longitudinal study. *European Journal of Work and Organizational Psychology, 24*(6), 914-928.

Van Knippenberg, D., Van Knippenberg, B., Monden, L., & de Lima, F. (2002). Organizational identification after a merger: A social identity perspective. *British Journal of Social Psychology*, *41*(2), 233–252.

Van Wingerden, J. (2016). *Job Demands-Resources Interventions.* Rotterdam, Netherlands: Doctoral dissertation, Erasmus University Rotterdam, Rotterdam.

Williams, L. J., & Anderson, S. E. (1991). Job satisfaction and organizational commitment as predictors of organizational citizenship and in-role behaviors. *Journal of Management*, *17*(3), 601-617.

Wrzesniewski, A., & Dutton, J. E. (2001). Crafting a job: Revisioning employees as active crafters of their work. *Academy of Management Review, 26*(2), 179-201.