



How different forms of job crafting relate to job satisfaction: The role of person-job fit and age

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Abstract

The purpose of our research is to explore the role of different job crafting strategies on employees' person-job fit and job satisfaction within the background of the changing nature and demands of jobs. By integrating the original conceptualization of job crafting and job demands-resources theory, we examine whether three dimensions of job crafting (i.e., task, relational, and cognitive crafting) foster job satisfaction via perceived person-job fit and how employees' age moderates these mediated relationships. Using a sample of 379 Chinese employees from diverse industries and occupations, the findings indicated that person-job fit mediated the relationships between all three forms of job crafting and job satisfaction. Moreover, the relationships of task and relational crafting with person-job fit were stronger among younger employees, and the relationship of cognitive crafting with person-job fit was stronger among older employees. Employees' age further moderated the indirect effects of the three forms of job crafting on job satisfaction via person-job fit. We provide insights into how organizations can help employees of all ages benefit from utilizing different job crafting strategies, and discuss future directions for job crafting research.

Keywords Job crafting · Job satisfaction · Person-job fit · Age

Introduction

In the current knowledge economy, the nature of work is changing rapidly with the evolution of the external business environment (Zhang & Parker, 2019). The increasingly evolving job demands, such as work overload, emotionally demanding interactions, and time pressure undermine employees' needs and lead them to perceive a misfit with their jobs, which often coincides with decreased job satisfaction and job performance and increased turnover intentions (e.g., Kristof-Brown et al., 2005; Tims & Bakker, 2010). In

this context, job crafting is a self-initiated bottom-up process, as opposed to the top-down approaches adopted by organizations, that allows employees to shape their tasks and roles to suit their needs and abilities (Berg et al., 2010; Berg et al., 2013). Growing evidence has shown that job crafting is an important determinant of critical work behaviors, including task performance (e.g., Y. Shin et al., 2020) and organizational citizenship behavior (e.g., Y. Shin & Hur, 2019). However, even employees who engage in job crafting are not necessarily satisfied with their jobs (Cheng et al., 2016; Kim et al., 2018). One possible reason is that job crafting consists of multiple components based on different theories, and not all job crafting strategies foster employees' job satisfaction directly (Kim et al., 2018). Another reason may be that efforts used to craft jobs deplete employees' energy reserves (Bakker & Oerlemans, 2018), and employees' choice of job crafting strategies that are not suitable for them may even drain more resources and cause undesirable effects. Because higher job satisfaction can reduce employees' absenteeism and turnover (Yang, 2010), focusing on the components of job crafting and further investigating the mechanism through which specific employee behaviors relate to job satisfaction are necessary.

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The purposes of our current research are to contribute to job crafting research in three ways. First, we use Wrzesniewski and Dutton's (2001) conceptualization of job crafting and explain its three facets independently from a perspective of job demands-resources (JD-R) theory (Demerouti et al., 2001). Wrzesniewski and Dutton (2001) categorized job crafting into task, relational, and cognitive crafting, while Tims et al. (2012) conceptualized job crafting within the JD-R framework and developed a scale involving increasing job resources and decreasing job demands. However, Tims et al.'s (2012) measure and subsequent empirical studies (e.g., Tims et al., 2016) solely investigated task and relational facets of job crafting. They did not consider the cognitive component, which represents another critical way of exerting influence on ones' job and may be appropriate for certain types of jobs or employees (Slemp & Vella-Brodrick, 2013). The cognitive dimension enables employees to recognize the broader effect of their jobs and the value that their jobs may have in their lives (Berg et al., 2013), and relates most closely to work meaningfulness and work identity (Wrzesniewski & Dutton, 2001). This clearly suggests that further research into the cognitive component of job crafting is necessary to gain a comprehensive understanding of the nature of different facets of job crafting. Therefore, we adopt a somewhat dual approach by integrating the JD-R framework and the original conceptualization of job crafting described by Wrzesniewski and Dutton (2001).

Second, we propose that employees' efforts to craft their jobs will indirectly contribute to job satisfaction via perceived person-job fit. Person-job fit refers to the congruence between individuals' knowledge, skills, and abilities and job demands, or between the needs, desires, and preferences and the rewards provided by a job (Cable & DeRue, 2002). Previous scholars of job crafting (Tims et al., 2016; Chen et al., 2014) tended to direct their attention to the relationship between general job crafting and person-job fit, at the cost of specific investigations of the job crafting facets. However, due to the importance of the cognitive aspect of job crafting (Slemp & Vella-Brodrick, 2013) and the mixed findings between job crafting and job satisfaction (Kim et al., 2018), we should examine whether different strategies of job crafting involving not only the tasks and relationships but also the cognitive aspect can foster job satisfaction via person-job fit. From a JD-R perspective, job crafting enables employees to change the levels of either job demands or job resources to fit them with their abilities and needs (Tims & Bakker, 2010). In the context of the changing nature of work, employees who achieve a new balance between the rising job demands and job resources through crafting their tasks, relationships, or perceptions are most likely to gain a better person-job fit. Moreover, person-job fit plays a vital role in employees' attitudes, especially in increasing employee job satisfaction (Kristof-Brown et al., 2005). Including person-job fit as a

mediator to explain how task, relational, and cognitive crafting affect job satisfaction independently may provide a new perspective to understand the mechanism of job crafting.

Third, we propose that age acts as a critical moderator of the effectiveness of different forms of job crafting. Employees need to spend time and energy to craft their jobs in different ways (Bakker & Oerlemans, 2018), yet the depletion of energy resources may be more or less for certain employees. Unfortunately, prior job crafting research has not adequately addressed which types of individuals are more or less likely to transform the influence of specific job crafting behaviors on workplace consequences (e.g., Cheng et al., 2016; Cheng & O-Yang, 2018). To answer this question, we focus on employees' age because it may shape the dynamic process of balancing job demands and job resources triggered by job crafting. Based on the literature on life-span development, age is typically positively associated with experiences and knowledge, but negatively associated with the speed of processing information, work memory, and abilities to solve novel problems (Salthouse, 2010). Age-related resources, including work experiences and innovative thinking, may contribute to the transformation of the beneficial effects of different job crafting behaviors by increasing or decreasing the levels of job resources and job demands differently. Therefore, we argue that age may differentially moderate the mediated relationships between the three forms of job crafting mentioned above and job satisfaction through person-job fit.

Taken together, this study aims to extend our knowledge in several ways. First, we provide a complete picture of job crafting by investigating the task, relational, and cognitive dimensions of job crafting separately from a JD-R perspective. Second, we expound on the mediating effect of person-job fit on the relationships between job crafting facets and job satisfaction, thereby contributing to the existing literature on how different types of job crafting affect job satisfaction (Kim et al., 2018; Villajos et al., 2019). Third, we examine the moderating role of age and thus identify which strategies of job crafting are more appropriate for younger and older workers, respectively. Managers can also better understand how employees engage in different job crafting activities and how to assist them in enhancing the effectiveness of different strategies of job crafting.

Theory and Hypotheses

Job Demands-Resources Model and Job Crafting

The central assumption of the JD-R model (Demerouti et al., 2001) is that every work environment has unique factors linked with job stressors. These factors can be generally categorized into job demands and job resources applied to a

wide range of work environments. Job demands are the job aspects that require efforts and energy (e.g., heavy workload or time pressure; Bakker & Demerouti, 2007). Van den Broeck et al. (2010) further categorized job demands into challenging or hindrance demands according to whether they are motivating or detrimental to employees' growth and development. Job resources are the physical, psychological, social, or organizational aspects of the job (Demerouti et al., 2001) that stimulate goal achievement and personal growth (e.g., autonomy or social support; Bakker & Demerouti, 2007).

Wrzesniewski and Dutton (2001) classified job crafting into task, relational, and cognitive crafting according to whether it includes changing the task scope, relationships, or work meaningfulness, respectively. Extending Wrzesniewski and Dutton's (2001) conceptualization from a JD-R perspective (Demerouti et al., 2001), employees can utilize task, relational, and cognitive crafting, which involve increasing job resources and challenging demands or decreasing hindrance demands, to align their job demands and job resources with own abilities and needs. Specifically, task crafting involves changing the number, scope, type of job tasks, or how to allocate time and energy to various tasks (Slemp & Vella-Brodrick, 2013; Wrzesniewski & Dutton, 2001). Relational crafting involves changing the quality or amount of social interactions (Slemp & Vella-Brodrick, 2013; Wrzesniewski & Dutton, 2001). Cognitive crafting involves changing the way they view or think about their jobs (Slemp & Vella-Brodrick, 2013; Wrzesniewski & Dutton, 2001).

Building on the JD-R framework, the balance between job demands and job resources promoted by job crafting may enhance employees' person-job fit, which in turn contributes to higher levels of job satisfaction and positive organizational outcomes (Tims & Bakker, 2010). Despite the importance of job crafting and its presumed linkage with job satisfaction, different theoretical dimensions have resulted in different conclusions. Some studies that focused on general job crafting indicated contradictory findings. Cheng and O-Yang (2018) found that job crafting had a positive relationship with job satisfaction, while Leana et al. (2009) indicated that individual job crafting had a negative relationship with job satisfaction. Other studies that focused on the different facets of job crafting suggested several positive links. For example, based on Tims et al.'s (2012) job crafting theory, Villajos et al. (2019) and Tims et al. (2013) both showed that only increasing structural and social resources related to job satisfaction. Slemp and Vella-Brodrick (2013) and Kim et al. (2018) investigated task, relational, and cognitive crafting, and suggested that the three dimensions (except the task facet in the latter study) were associated with job satisfaction. These findings indicate the need for more studies to investigate the different facets

of job crafting and possible mediators linking job crafting facets to job satisfaction. Therefore, we draw on the JD-R model and propose that task, relational, and cognitive crafting can enhance employees' job satisfaction via person-job fit in the next section.

Mediating Role of Person-Job Fit in the Task Crafting-Job Satisfaction Relationship

We first explain how person-job fit mediates the link between task crafting and job satisfaction. Through task crafting, employees can integrate their abilities and needs into job tasks by adapting job resources and job demands. Specifically, by redesigning the content or standard procedures of the job in a way that employees are able to take advantage of their skills and develop themselves to expand job resources (e.g., skill variety and autonomy; Bakker & Demerouti, 2007), employees are more likely to feel that they have the capacity to meet their job demands (Lu et al., 2014). Crafting job demands can also lead to a good person-job fit. On the one hand, when employees attempt to utilize more abilities and acquire new skills, increasing more challenging job demands, such as expanding tasks or introducing new assignments, can better align their abilities or interests with their jobs. On the other hand, employees can alleviate hindrance demands by actively minimizing specific tasks that exceed their knowledge, skills, or abilities. Moreover, task crafting that involves increasing job resources and challenging demands can foster the fulfillment of individuals' psychological needs (Slemp & Vella-Brodrick, 2014). Employees may perceive more personal control over their jobs and feel more competent and autonomous when there are increased levels of skill variety, autonomy, and learning opportunities. With these task-related changes, the balance between employees' job demands and their abilities and needs may be restored. In support of this reasoning, Boon et al. (2011) indicated that job resources (e.g., autonomy and learning or development opportunities) and challenging job demands were indeed positively associated with person-job fit.

High levels of person-job fit arising from job crafting are expected to positively relate to job satisfaction. Job satisfaction is determined by feelings toward the job (Spector, 1997), and these feelings encourage positive and pleasurable emotional states when positive job aspects are promoted (Locke, 1976). Positive feelings stimulated by the match between employees' abilities and needs and their job demands can help improve emotional attitudes towards their jobs and enhance their job satisfaction (Edwards & Shipp, 2007). Furthermore, meta-analytical evidence provides strong support for the relationship between person-job fit and job satisfaction ($\rho = .56$; Kristof-Brown et al., 2005). Considering person-job fit's close link to improving job

satisfaction, it may play an essential role in the relationship between job crafting and job satisfaction. Specifically, employees who engage in task crafting are more likely to shape their positive work experiences and attitudes because this type of crafting allows them to fit their job tasks with their abilities and needs. Therefore, we predict that task crafting will improve person-job fit, which will then positively influence job satisfaction.

Hypothesis 1a: Person-job fit mediates the relationship between task crafting and job satisfaction.

Mediating Role of Person-Job Fit in the Relational Crafting-Job Satisfaction Relationship

We also postulate that relational crafting that involves increasing job resources and decreasing job demands can result in job satisfaction via person-job fit. By utilizing relational crafting, employees can ask others for advice on their jobs to expand social job resources, including social support and feedback opportunities (Bakker & Demerouti, 2007). This view is grounded on the fact that employees are inherently motivated to connect with others and therefore strive to establish or re-establish their relationships to recognize work meaningfulness and work identity (Wrzesniewski & Dutton, 2001). Such strengthening of social bonds can help employees deal with difficult job demands and improve their demand-specific abilities (Devloo et al., 2011). Relational crafting also shapes job demands by allowing employees to increase responsibility and workload (e.g., mentoring less experienced colleagues) or minimize or avoid interactions that they expect to be unpleasant. Crafting relationships in these ways allows employees to give full play to their abilities and skills at work, and obtain reciprocal help to be more successful at work (Ragins & Kram, 2007). Moreover, relational crafting accompanied by increased job resources, such as social support, feedback, and responsibilities, enables employees to have feelings of mutual care, respect, and reliance in work relationships (Slemp & Vella-Brodrick, 2014). The result of these relational crafting behaviors could cause employees' abilities and needs to become more compatible with the job demands. Tseng and Yu (2016) also found that job resources, such as organizational support and cooperative opportunities, were positively related to person-job fit.

Moreover, prior studies have indicated that person-job fit is likely to have positive effects on job satisfaction (e.g., Burnette & Pollack, 2013; Laschinger et al., 2006). We thus believe that when employees engage in more relational crafting, their efforts to increase social job resources and challenging job demands can lead to higher job satisfaction through person-job fit. More specifically, when employees actively develop their relational network to have more satisfactory human connections, they are more likely to match

their jobs with their personal abilities and fulfill their need satisfaction, thereby increasing their feelings of satisfaction with their jobs. Taken together, it is expected that when employees engage in relational crafting activities, they will improve their job satisfaction because they perceive their abilities and needs to match their jobs.

Hypothesis 1b: Person-job fit mediates the relationship between relational crafting and job satisfaction.

Mediating Role of Person-Job Fit in the Cognitive Crafting-Job Satisfaction Relationship

Unlike task and relational crafting, crafting one's job cognitively does not involve tangible behavioral changes to the tasks or relationships, but rather points directly to the enhancement of work meaningfulness and work identity that arises from employees shaping how they perceive the tasks, relationships, or jobs as a whole (Berg et al., 2013). Grounded in the JD-R framework, cognitive crafting also involves increasing job resources and challenging job demands, and decreasing hindrance job demands. On the one hand, when employees find meaning in their jobs, they can perceive psychological resources and become more intrinsically motivated and efficacious (Y. Shin & Hur, 2019). Such heightened psychological resources enable them to gain and utilize positive job resources actively. Thus, by reframing the perception of the overall job (e.g., a technician reframes his/her job as an inventor), employees are likely to take on additional roles and responsibilities in their jobs (Zhang & Parker, 2019). In other words, cognitive crafting may help employees experience a strong desire to do a particular job and thus increase their perceptions that their job demands match their abilities. On the other hand, crafting cognitions in the form of reframing the job demands as either more challenging or less hindering may lead to more opportunities for employees to learn and develop (e.g., perceive customer complaints as opportunities to improve communication skills; Zhang & Parker, 2019). That way, employees may feel that they have the room and opportunities to show and develop their abilities. Moreover, cognitive crafting may result in employees perceiving their job resources and challenging job demands as indicators of their awareness of the potential value of their work to the organization, the community, and their lives (Slemp & Vella-Brodrick, 2014). Therefore, such a re-evaluation of one's work tasks and roles can improve the perceived match between employees' abilities and needs and job demands.

Because person-job fit is an important factor affecting job satisfaction (e.g., Laschinger et al., 2006), employees' efforts to make their jobs more meaningful are thus expected to enhance job satisfaction by perceiving that their abilities and needs can be fulfilled by their jobs. That is, when employees

cognitively reframe their jobs by changing their perception and the meaning of their job as a whole, they are more likely to believe that they are more competent at their jobs and have more feelings of work meaning and value, thereby resulting in higher job satisfaction. Therefore, when employees craft their cognitions, they will increase their person-job fit and then experience higher levels of job satisfaction.

Hypothesis 1c: Person-job fit mediates the relationship between cognitive crafting and job satisfaction.

Moderating Role of Age

In line with the JD-R theory (Demerouti et al., 2001), age-related resources are useful in dealing with high job demands and facilitating goal attainment (Ihle et al., 2015). We propose that age serves as a crucial moderator of the effectiveness of balancing job resources and job demands when employees engage in job crafting. As suggested by the literature on life-span development, aging is generally related to changes in abilities, values, and cognitions, including losses and gains (Kanfer & Ackerman, 2004). Moreover, personal demands and resources are likely to vary across different stages of the life span as well (Baltes, 1997). Given that the individual differences in aging and development proposed by the life-span development theory are closely consistent with the assumptions of the JD-R model (Baltes & Dickson, 2001), incorporating age into the JD-R model enables us to understand how younger and older employees adopt different job crafting strategies to optimize limited resources and balance the relationship with job demands.

Since different forms of job crafting entail different personal resources (Tims & Bakker, 2010), these age-related changes may differentially affect the effectiveness of different forms of job crafting. In particular, younger employees are on the trajectory of growth and resource gains, and they tend to be open to new things and good at solving novel problems (Baltes & Smith, 2003; Salthouse, 2010). Because younger employees expect to maximize gains by expanding and reserving resources (Wiese et al., 2002), they are more motivated and better able to increase job resources and decrease job demands through actual actions, such as task and relational crafting. These types of behavioral job crafting generally relate to creative processes, including generating new ideas or solutions for specific tasks, seeking sponsorship for ideas, and forming new relationships with others (Kim et al., 2018; Zhang & Parker, 2019). Thus, the creativity and innovation of younger employees could make it easier for them to exert the effectiveness of behavioral crafting (i.e., task and relational crafting). In contrast, older employees have accumulated knowledge and achievements acquired through education, vocational, and avocational experiences but are facing the increasing losses of physical,

mental reserves and innovative thinking (Salthouse, 2010). Older employees aim to minimize losses rather than maximize gains (Freund, 2006), and they are more likely to be able to take advantage of cognitive crafting because it depletes fewer resources in the face of their growing losses. This type of intangible job crafting involves increasing job resources and decreasing job demands cognitively and relates closely to individuals' knowledge, experiences, and the perceptions of job characteristics (Daniels, 2006; Zhang & Parker, 2019). Thus, the accumulation of knowledge and experiences of older employees may contribute to their effective use of cognitive crafting.

Based on the above theory and literature, we expect age to play differential moderating roles in the effects of behavioral crafting and cognitive crafting on person-job fit and job satisfaction. In line with the life-span development theory, younger individuals are generally in the stage of accumulating resources and acquiring knowledge (Baltes & Smith, 2003). They are increasingly driven by changing ways of working with innovative ideas or solutions that can complete specific tasks and establish new relationships to improve job resources and decrease job demands, promoting the congruence between their jobs and themselves. When younger employees engage in behavioral crafting, their ability to innovate enhances their control over the jobs and their effectiveness in shaping the work environment (Kulikowski & Orzechowski, 2018). For task crafting, they are more capable of coming up with creative and efficient ideas to solve problems and better apply new ways to complete specific tasks (Maurer, 2001). For relational crafting, younger employees are more flexible in seeking help from others and forming and maintaining new work relationships (Baroudi & Khapova, 2017). Thus, such employees can better use their abilities or skills to expand more job resources and challenging job demands, and experience a higher fulfillment of their psychological needs. As a result, younger employees who engage in task and relational crafting may perceive higher levels of person-job fit and consequently have greater levels of job satisfaction. However, since younger employees have not yet accumulated a sufficient reserve of job resources due to being in their early career stage (Salmela-Aro & Upadyaya, 2018), they have not yet formed a deep insight into the meaning and roles of their work. When younger employees engage in cognitive crafting, the lack of work experiences and knowledge limits their overall perception of their jobs and their understanding of their role identity (Eick & Reed, 2002). Because of this, they may perceive differences between their current job and their expectations (Dickson et al., 2008). Unlike crafting tasks and relationships separately, the psychological gap caused by an incomplete perception of work makes it harder for younger employees than older ones to connect specific tasks or

relationships with work identity to increase the meaningfulness of their work. Thus, they may perceive a lack of the ability to respond to job demands through cognitive crafting and feel less meaningful and competent. As such, for younger employees, the effect of cognitive crafting on person-job fit may be weakened, and thus their job satisfaction may be less likely to be enhanced.

On the basis of life-span development theory, as older employees generally minimize losses by allocating limited resources (Wong & Tetrick, 2017), they tend to be reluctant to adjust their work style and further reduce the levels of efforts in their work (Kanfer & Ackerman, 2004). When older employees engage in task and relational crafting, such behavioral changes that are generally novel to them tend to come with increased energy depletion (Wong & Tetrick, 2017). For task crafting, they tend to have difficulty in generating new and efficient ways to solve particular tasks and are less adaptable to new work styles (Maurer, 2001). For relational crafting, they may not be used to asking colleagues and supervisors for advice and may not be flexible enough to establish new relationships at work (Baroudi & Khapova, 2017). Because of this, older employees may require considerable efforts in crafting their jobs behaviorally, thereby depleting even more resources. This makes it difficult for older employees who do not invest more time and energy in specific tasks and new relationships to obtain adequate job resources to meet the growing job demands, which causes them to feel less capable of achieving work goals. As such, their inability to craft their tasks and relationships may adversely affect their person-job fit and ultimately result in lower levels of job satisfaction. In contrast, cognitive crafting may be more attainable and valuable for older employees than task and relational crafting. Because of their longer time in the workforce, the accumulation of life-time intellectual knowledge and achievements enables them to develop personal beliefs and identities about their jobs (Beauchamp & Thomas, 2009). When older employees engage in cognitive crafting, their comprehensive perception of their jobs can assist them in establishing a linkage between existing tasks or relationships with work identity. This allows them to see their value in the organization, society, and life to expand more job resources and challenging job demands and experience more feelings of meaningfulness and competence. This could strengthen the impact of cognitive crafting on person-job fit and consequently foster employees' job satisfaction. Therefore, our hypotheses are summarized as follows:

Hypothesis 2a: Age moderates the meditated relationship between task crafting and job satisfaction via person-job fit so that this relationship is stronger when employees are younger compared to when they are older.

Hypothesis 2b: Age moderates the meditated relationship between relational crafting and job satisfaction via

person-job fit so that this relationship is stronger when employees are younger compared to when they are older. Hypothesis 2c: Age moderates the meditated relationship between cognitive crafting and job satisfaction via person-job fit so that this relationship is stronger when employees are older compared to when they are younger.

Method

Participants and Procedure

Data were collected in three waves through online surveys to reduce common method variance (Podsakoff et al., 2003). For better generalization, the participants in this research were employed in various industries and occupations in China. We recruited participants through postings on WeChat (a popular social network). The postings directed interested participants to a link that included general information on the purpose of the study and a QR code to join a WeChat group. We also reminded them to complete the survey three times through WeChat and promised that they could get 50 RMB (about 8 US dollars) when they finished all surveys. The links to our questionnaires were distributed to participants in the WeChat group. At Time 1, 489 participants voluntarily responded to the first survey, which measured task, relational, and cognitive crafting and control variables. Among these initial participants, 445 participants filled the second survey, which assessed person-job fit one month later (Time 2), and 419 completed the third survey, which assessed job satisfaction one month after that (Time 3). Participants were asked to create an identification code to match their responses.

The final sample consisted of 379 employees who completed surveys at all measurement points, for a response rate of 77.5%. The mean age and organizational tenure of this sample were 33.10 years ($SD=8.74$) and 8.67 years ($SD=8.89$), respectively. Males were 44.3% and females were 55.7%. Most of the participants held a relatively high education level: 30.3% held a bachelor's degree and 29.3% held a master's degree or above. Participants were mainly employed in information and technology (14.5%), bank and finance (12.2%), sales (8.3%), education (8.1%), and real estate (4.9%).

Measures

The surveys included measures designed to capture our examined variables in this study: job crafting (task, relational, and cognitive crafting), person-job fit, and job satisfaction. Following the procedure of translation and back-translation (Jones et al., 2001), we first asked two

professional translation companies to translate the English versions of the measures into Chinese and then back-translate them into English. Finally, we invited three management scholars to review the back-translated version and found that it was equivalent to the original, suggesting that the Chinese version was acceptable for use.

Job Crafting (Time 1) We used a 15-item scale developed by Slemp and Vella-Brodrick (2013) to measure job crafting, with task, relational, and cognitive crafting each assessed with five items. Sample items include “Change the scope or types of tasks that you complete at work” (task crafting), “Make friends with people at work who have similar skills or interests” (relational crafting), and “Remind yourself about the significance your work has for the success of the organization” (cognitive crafting). Participants indicated how often they engaged in several activities or cognitions using a 5-point Likert-type scale from 1 (*almost never*) to 5 (*very often*). A higher mean score indicated higher levels of job crafting. Cronbach’s α s for the three dimensions ranged from .83 to .89 in the original study (Slemp & Vella-Brodrick, 2013). In our research, three sub-scales showed high internal consistency (task, $\alpha = .81$; relational, $\alpha = .82$; cognitive, $\alpha = .87$).

Age (Time 1) We measured age by asking participants how old they are (in years). Following previous studies (e.g., Kooij et al., 2017), we treated age as a continuous variable in our analyses to capture its variation as fully as possible.

Person-Job Fit (Time 2) We used a 6-item scale from Cable and DeRue (2002) to assess individuals’ perceived person-job fit. Sample items include “The match is very good between the demands of my job and my personal skills” and “There is a good fit between what my job offers me and what I am looking for a job.” Responses were made with a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), with a higher mean score indicating higher levels of perceived person-job fit. The Cronbach’s α for the overall scale was .89 in a prior study (Chen et al., 2014), and was .90 for this current sample.

Job Satisfaction (Time 3) We used a 3-item scale proposed by Cammann et al. (1979) to assess the overall job satisfaction. A sample item is “All in all I am satisfied with my job.” Participants rated the items with a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), with a higher average score indicating higher levels of job satisfaction. Cammann et al. (1979) reported the Cronbach’s α of this scale was .77. In the present study, the Cronbach’s α was .74.

Analytical Strategy

The analysis of our proposed model involved several steps. First, we conducted a preliminary analysis to check the suitability of the data. Second, we used SPSS 23.0 to analyze the correlations among the study’s variables and used SPSS Amos 23.0 (Arbuckle, 2014) to conduct confirmatory factor analysis (CFA) to assess the discriminant validity of the measures. Third, we conducted multiple regressions using Mplus 7.0 to test the mediation effect of person-job fit in the relationship between the job crafting facets and job satisfaction (Hypotheses 1a, 1b, and 1c), and the moderating effect of age in these mediating relationships (Hypotheses 2a, 2b, and 2c). Further, to account for non-normal sampling distributions of indirect and conditional indirect relations (Shrout & Bolger, 2002), we re-examined the predicted linkages by using 2000 resamples through the R program (Preacher & Selig, 2012). Finally, we examined the effects of several control variables that may provide alternative explanations for our model. The results did not significantly change when controlling for participants’ gender, educational level, and organizational tenure. Therefore, following the recommendation from previous research on the inclusion of redundant control variables (Becker, 2005; Carlson & Wu, 2012), we did not include these controls in the final model.

Results

Preliminary Analysis

We used SPSS 23.0 to check the data for missing values across 489 cases. For participants who skipped one item on a certain scale but had data available for other items on that scale, personal mean imputation (Bernaards & Sijsma, 2000) was used to replace the missing values. For participants who skipped more than one item on a scale, the cases of 104 participants were excluded from our analysis. We further conducted the univariate and the multivariate analyses using z-score and Mahalanobis Distance for each case (Tabachnick & Fidell, 2007), and 6 cases were identified as potential outliers and removed. This left 379 cases of participants as the full sample for our analyses. T-tests revealed no significant differences for demographic backgrounds (gender, age, educational level, and organizational tenure) and job crafting (task, relational, and cognitive crafting) between participants who responded to all follow-up surveys and those who did not. This result indicated that non-response bias was not a serious problem in this study. Table 1 presents the means, standard deviations, reliabilities, and correlations for the variables of this study.

Table 1 Means, standard deviations and correlations among study variables

Variables	Mean	SD	1	2	3	4	5	6
1. Age	33.01	8.69	–					
2. Task crafting	3.36	.69	–.06	(.81)				
3. Relational crafting	3.30	.73	–.02	.59**	(.82)			
4. Cognitive crafting	3.44	.74	–.02	.53**	.57**	(.87)		
5. Person-job fit	3.33	.79	.11*	.39**	.39**	.36**	(.90)	
6. Job satisfaction	3.48	.77	.14**	.33**	.32**	.30**	.51**	(.74)

Note. $N=379$. Coefficient alphas are on the diagonal in parentheses

* $p < .05$, ** $p < .01$

Table 2 Results of confirmatory factor analysis for the measures of variable studied

Models	χ^2	χ^2/df	CFI	TLI	RMSEA
Five factors ^a	435.120	1.892	.957	.949	.049
Four factors ^b	870.161	3.537	.870	.854	.082
Three factors ^c	1146.031	4.603	.813	.793	.098
Two factors ^d	2094.708	8.345	.616	.578	.139
One factor	2338.037	9.278	.565	.524	.148

CFI comparative fit index, TLI Tucker–Lewis index, RMSEA root mean square error of approximation

^aFive factors model: task crafting, relational crafting, cognitive crafting, person-job fit and job satisfaction

^bFour factors model: task crafting and relational crafting combined

^cThree factors model: task crafting, relational crafting and cognitive crafting combined

^dTwo factors model: task crafting, relational crafting, cognitive crafting and person-job fit combined

Confirmatory Factor Analysis

Before testing our hypotheses, we conducted a CFA of our key variables (i.e., task crafting, relational crafting, cognitive crafting, person-job fit, and job satisfaction) to ensure the distinctiveness of these variables. The fit of our hypothesized model was evaluated with comparative fit index (CFI), Tucker-Lewis index (TLI), and root mean square error of approximation (RMSEA). CFI and TLI values greater than .95 and RMSEA values lower than .08 represent a good fit (Hu & Bentler, 1999). The fit indices in Table 2 suggested that the predicted five-factor model had a better fit ($\chi^2 = 435.120$, $\chi^2/df = 1.892$; CFI = .957; TLI = .949; RMSEA = .049) than any other model.

Hypothesis Testing

Table 3 shows the results of the complete moderated mediation regression analyses. We first examined the mediated model in which three job crafting forms predict job satisfaction with person-job fit as a mediator (Hypotheses 1a, 1b, and 1c). As expected, task crafting ($B = .23$, $p < .01$),

relational crafting ($B = .20$, $p < .01$), and cognitive crafting ($B = .16$, $p < .05$) all had a significant and positive direct effect on person-job fit, which in turn had a significant effect on job satisfaction ($B = .42$, $p < .001$). To test the indirect effect further, we adopted bootstrapping procedures ($N = 2000$) to build 95% bias-corrected confidence intervals (CI). The lower part of Table 3 suggests that there were significant and positive indirect effects of task crafting ($B = .09$, $p < .05$, 95% CI = [.04, .16]), relational crafting ($B = .08$, $p < .05$, 95% CI = [.03, .15]), and cognitive crafting ($B = .07$, $p < .05$, 95% CI = [.02, .12]) on job satisfaction via person-job fit. Thus, hypotheses 1a, 1b, and 1c were supported.

We then examined the moderating effect of age on our mediation model where three job crafting forms relate to job satisfaction via person-job fit (Hypotheses 2a, 2b, and 2c). The interaction terms significantly predicted person-job fit but in different directions (task crafting: $B = -.03$, $p < .01$; relational crafting: $B = -.02$, $p < .01$; cognitive crafting: $B = .02$, $p < .01$), indicating that the relationships of task crafting and relational crafting with person-job fit weakened with age but the relationship of cognitive crafting with person-job fit strengthened with age. To take a closer look at the nature of the interactions, we conducted simple slope analyses at 1 SD above and below the mean of age (Aiken & West, 1991). Results suggested that task crafting-person-job fit and relational crafting-person-job fit relationships were stronger among younger employees (task crafting: $B = .45$, $p < .001$; relational crafting: $B = .39$, $p < .001$) as compared to older employees (task crafting: $B = .01$, $p > ns$; relational crafting: $B = .07$, $p > ns$; see Fig. 1). In contrast, the cognitive crafting-person-job fit relationship was stronger among older employees ($B = .30$, $p < .01$) as compared to younger employees ($B = -.01$, $p > ns$; see Fig. 1). These results were consistent with hypotheses 2a, 2b, and 2c.

Given the support for the moderating effects, we further tested the conditional indirect effects. As shown in the lower part of Table 3, results suggested that the indirect effects of task and relational crafting on job satisfaction via person-job fit were significant only among younger employees (task crafting: $B = .19$, $p < .01$, 95% CI = [.10, .28]; relational crafting: $B = .16$, $p < .01$, 95% CI = [.09, .25]). In contrast,

Table 3 Moderated mediation analyses

	Model 1				Model 2			
	Person-job fit		Job satisfaction		Person-job fit		Job satisfaction	
Predictor variable	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
Task crafting	.23**	.07	.11	.06	.23***	.07	.11	.06
Relational crafting	.20**	.07	.08	.06	.23***	.06	.08	.06
Cognitive crafting	.16*	.06	.06	.06	.14*	.06	.06	.06
Age					.01*	.00		
Task crafting × Age					−.03**	.01		
Relational crafting × Age					−.02**	.01		
Cognitive crafting × Age					.02**	.01		
Person-job fit			.42***	.05			.42***	.05
<i>F</i>	31.59***		37.92***		20.52***		37.92***	
<i>R</i> ²	.20***		.29***		.28***		.29***	
Indirect and conditional indirect effects	<i>B</i>	<i>SE</i>	95% Boot CI					
Indirect effect analyses								
Indirect effect of task crafting	.09*	.04	[.04, .16]					
Indirect effect of relational crafting	.08*	.04	[.03, .15]					
Indirect effect of cognitive crafting	.07*	.04	[.02, .12]					
Conditional indirect effect analyses								
For task crafting								
Older employees	.01	.06	[−.07, .08]					
Younger employees	.19**	.06	[.10, .28]					
Difference	−.18*	.08	[−.31, −.07]					
For relational crafting								
Older employees	.03	.04	[−.04, .10]					
Younger employees	.16**	.05	[.09, .25]					
Difference	−.13*	.06	[−.24, −.03]					
For cognitive crafting								
Older employees	.12**	.05	[.05, .21]					
Younger employees	−.01	.05	[−.07, .07]					
Difference	.13*	.07	[.03, .23]					

N = 379. bootstrap sample size = 2000; *B* = unstandardized estimate; *SE* standardized error; *CI* confidential interval

* *p* < .05, ** *p* < .01, *** *p* < .001

the indirect effect of cognitive crafting on job satisfaction via person-job fit was significant only among older employees (*B* = .12, *p* < .01, 95% CI = [.05, .21]). Path coefficients of our moderated mediation model are reported in Fig. 2. Therefore, hypotheses 2a, 2b, and 2c were fully supported.

Supplementary Analysis

We conducted supplementary analyses to assess the robustness of our findings. First, we tested whether our hypotheses still held when including additional missing values (see Online Supplementary Materials with Table S1). This analysis demonstrated that our findings were also robust, which greatly enhances the confidence in our tested model.

Second, to take a closer look at the relationships among job crafting facets, person-job fit, and job satisfaction, we conducted a comprehensive examination of our model by separating the person-job fit into demands-abilities fit and needs-supplies fit following Cable and DeRue (2002) (see Online Supplementary Materials with Table S2-S5). Results suggested that demands-abilities fit and needs-supplies fit mediated the relationships between job crafting facets and job satisfaction. Age further moderated the indirect effects of the three job crafting facets on job satisfaction via demands-abilities fit and needs-supplies fit, thereby providing further evidence for the validity of our findings.

Fig. 1 Moderating effects of age on the relationships between task, relational, and cognitive crafting and job satisfaction

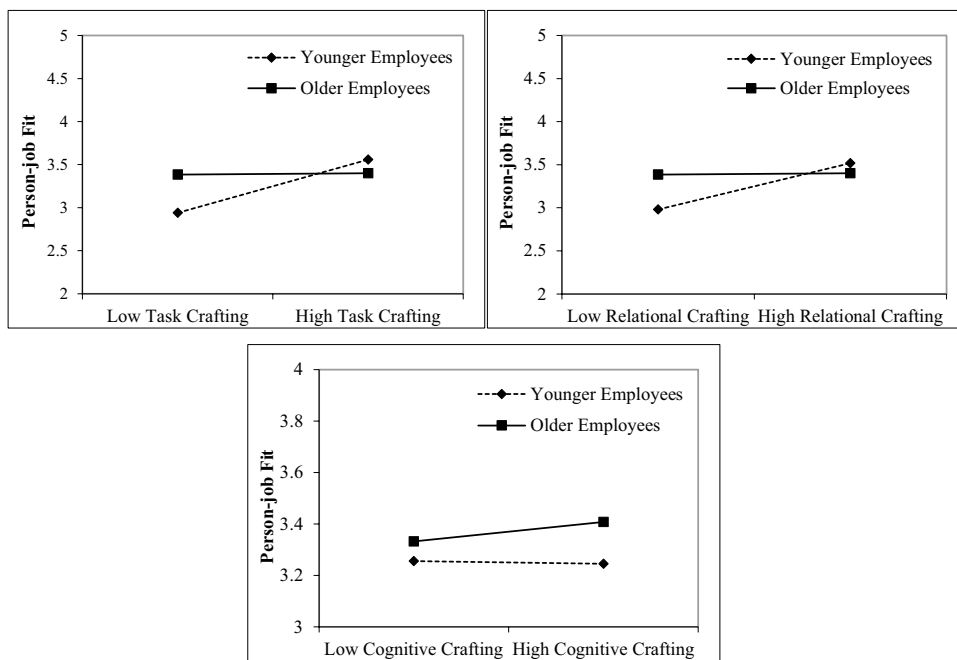
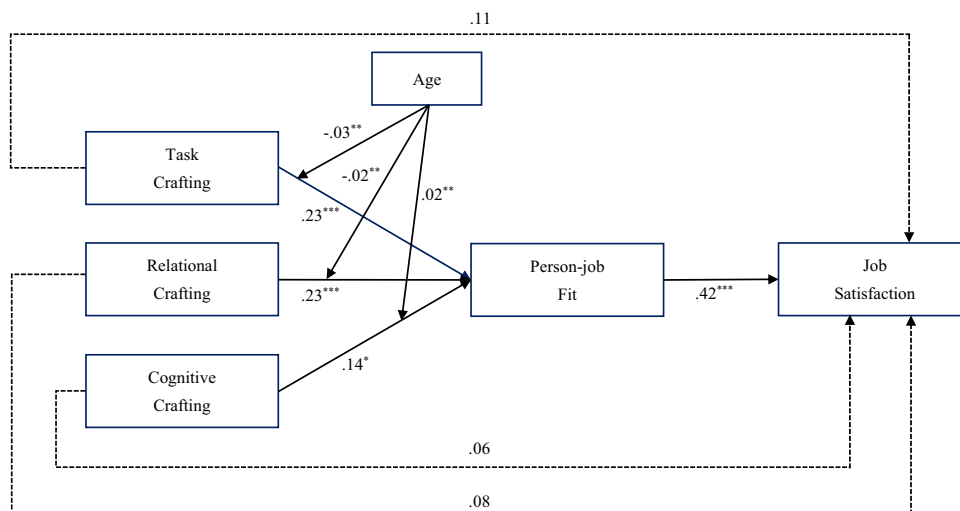


Fig. 2 Model with unstandardized parameter estimates of path coefficients. $N=379$. * $p < .05$, ** $p < .01$, *** $p < .001$



Discussion

Drawing on the JD-R theory (Demerouti et al., 2001), we examined the mediating effect of person-job fit on the job crafting facets-job satisfaction relationships and the differentially moderating effect of age on these mediated relationships among Chinese employees. As predicted, person-job fit significantly mediated the association between all job crafting facets (i.e., task, relational, and cognitive crafting) and job satisfaction. In addition, employees’ age had a negative moderating effect on the relationships of task and relational crafting with person-job fit, such that these relationships were stronger among relatively

younger employees. Conversely, employees’ age moderated the cognitive crafting-person-job fit relationship in a strengthening way, such that this relationship was stronger among relatively older employees. Employees’ age further moderated the indirect effects of job crafting facets on job satisfaction via person-job fit. We believe our findings have both theoretical and practical implications.

Theoretical Implications

First, previous studies on job crafting have overwhelmingly focused on changes of tasks and relationships (e.g., Tims et al., 2016) or merely on the changes of tasks (e.g., I. Shin & Jung, 2019; Kooij et al., 2017) as job crafting strategies.

However, there is a strong need to address the cognitive dimension of job crafting (Slemp & Vella-Brodrick, 2013; Zhang & Parker, 2019), as it is considered the most effective way to reshape work meaningfulness and work identity (Wrzesniewski & Dutton, 2001). From a JD-R perspective, similar to task and relational crafting, cognitive crafting can also increase job resources and challenging job demands and decrease job hindrance demands by reframing the overall perception of one's job (Zhang & Parker, 2019). By integrating task, relational, and cognitive crafting illustrated in Wrzesniewski and Dutton's (2001) original conceptualization of job crafting and the JD-R framework (Demerouti et al., 2001), we provide a comprehensive understanding of the nature of all three forms of job crafting. Furthermore, the empirical findings of our research answer the calls from scholars to study job crafting facets separately, since they may have different mechanisms and conditions affecting particular individual outcomes (Berg et al., 2010; Berg et al., 2013).

Second, existing equivocal findings on the direct relationships between different facets of job crafting and job satisfaction indicated important but indirect effects (e.g., Kim et al., 2018; Tims et al., 2013; Villajos et al., 2019). However, we know little about the mechanism through which specific strategies of job crafting impact job satisfaction. Our study adds clarity by identifying person-job fit as a novel and crucial mediator to understand the associations between the three facets of job crafting and job satisfaction. In support of the JD-R perspective positing that job resources and challenging job demands are prerequisites for employees to perceive that their abilities and needs match their jobs (Tims et al., 2016), our results show that task, relational, and cognitive crafting influence job satisfaction via perceived person-job fit, respectively. Specifically, employees can utilize different forms of job crafting to align the job demands and job resources with their personal needs and abilities. This fulfillment of needs and abilities is an important mechanism in building job satisfaction (Edwards & Shipp, 2007). These findings are also consistent with prior studies on the positive associations between job crafting, person-job fit, and job satisfaction (Chen et al., 2014; Cheng et al., 2016; Lu et al., 2014). Therefore, our study proposes that person-job fit could be regarded as a critical checkpoint in detecting how facets of job crafting influence job satisfaction.

Third, by examining the differential moderating effect of age, our study responds to the call to explore how individual differences shape the job crafting-outcome relationships (Petrou et al., 2017). Research on the interaction between job crafting and personal characteristics is limited. Our research provides an answer to the question for whom the impact of job crafting facets becomes more prominent. While the JD-R research has identified age-related abilities as a personal resource to cope with job demands (Ihle et al., 2015), our

findings show that employees' age performs more complex functions for balancing job resources and job demands. Specifically, we have expanded the JD-R theory by demonstrating that age-related resources can help employees to increase job resources and decrease job demands in different ways and thus channel the beneficial effects of different types of job crafting on person-job fit and job satisfaction. Results suggest that the relationships between task and relational crafting and person-job fit are stronger for relatively younger employees, while the relationship between cognitive crafting and person-job fit is stronger for relatively older employees. This pattern is consistent with the life-span development perspective (Kanfer & Ackerman, 2004), reflecting that younger employees benefit more from behavioral changes concerning tasks and relations that require innovation, and older employees benefit more from cognitive changes that require personal beliefs. The significant moderating effect of age echoes the importance of identifying boundary conditions to solve the discrepancy in the literature concerning the link between job crafting and job satisfaction (Kim et al., 2018).

Practical Implications

Our results clearly suggest that employees can utilize the different strategies of job crafting as an effective and meaningful endeavor to improve their person-job fit and job satisfaction in the ever-changing nature of work. Extending this thought, organizations need to cultivate an autonomy-supportive organizational context to promote employees' self-management behaviors (Slemp et al., 2015). Instead of assigning employees to perform predefined jobs, they should be given room and opportunities to craft their jobs to fit them with their personal abilities and needs and thus become more satisfied with their jobs. One way to achieve this goal is through job crafting interventions to stimulate employees to ponder on the differences and connections between their present and ideal jobs and foster their job crafting behaviors (Kooij et al., 2017). For instance, organizations can improve employees' job crafting behaviors through relevant training interventions and emphasize the benefits of job crafting to motivate them to take the initiative to craft their jobs.

Our results also emphasize the role of employees' age as an important boundary condition, which can strengthen or weaken the relationships between specific forms of job crafting and person-job fit. Therefore, organizations need to take employees' age into account when providing support to them and help them implement different job crafting strategies. First, managers should consider providing supervisor coaching with employees to give them more feedback and care (Cheng & O-Yang, 2018). Especially for older employees, they may not benefit from simply completing tasks, but from the opportunity to utilize their extensively accumulated

skills (Zaniboni et al., 2014). In this case, supervisors can give full play to the advantages of older employees in work experience by consulting their opinions or optimizing task assignment patterns when assigning work tasks. Such activities can assist older employees in crafting their jobs towards tasks and relationships so that older employees may feel not that “old” and improve their person-job fit and job satisfaction. Second, managers should attach great importance to the training of employees’ understanding of the work that may involve emphasizing the value of one’s job in the organization, society, and life (Tabvuma et al., 2015). Specifically, organizations can change and enhance younger employees’ perceptions of the organization and their jobs through personalized training such as role-plays and case studies, allowing them to re-examine their jobs and thus improve their job satisfaction. This could help younger employees experience a higher sense of competence and meaning, thereby increasing the effectiveness of cognitive crafting. Third, organizations can adopt a combination of multiple job crafting strategies to help employees of different ages achieve job satisfaction. For example, organizations can allow employees of different age groups to share job crafting strategies and techniques with each other. This will not only deepen the connection between younger and older employees, but also enhance the effectiveness of job crafting strategies for both of them, ultimately improving their job satisfaction.

Limitations and Future Directions

This research has several limitations. First, we measured the relationships among variables in our proposed model at three different times without measuring the changing effects of these variables. This less rigorous longitudinal research design constrains us from understanding the dynamic change in these variables, and we cannot explicitly claim a causal relationship between job crafting, person-job fit, and job satisfaction. Given that job crafting occurs even on a daily basis (Y. Shin & Hur, 2019) and employees regularly evaluate the fit of their jobs with personal characteristics (Tims et al., 2016), future research is expected to further investigate these connections by using more rigorous longitudinal or dynamic perspective designs.

Second, although we collected data from various industries and occupations, all participants were from China, and this limits the generalization of our research results to other cultural contexts. Despite the fact that the demand for job crafting behaviors is a universal trend among contemporary organizations, job crafting has a relatively stronger effect on employees’ well-being in collectivistic cultures than in individualistic cultures (Yepes-Baldó et al., 2018). This is because group membership is the core of collectivist identity, so collectivists tend to have stronger needs for belonging (Oyserman et al., 2002). It is possible that collectivists (e.g.,

Chinese) experience higher levels of person-job fit and job satisfaction than individualists when increasing social job resources and challenging job demands, as they perceive their behaviors as a service to the community, and this fulfills their needs for belonging. Therefore, we recommend that future research replicate our study to clarify cross-cultural differences that may arise.

Third, our data from various industries and occupations also suggests that the participants performed different types of tasks in their workplaces. Although age-related abilities serve as a key factor affecting the effectiveness of job crafting (Tims & Bakker, 2010), different types of tasks tend to have different levels of demands on employee abilities. For example, some types of tasks, especially for research workers, may place higher demands on employees’ innovative ability or knowledge ability, further strengthening the moderating effect of age. Therefore, we encourage future research to further examine the interactive effect of different job crafting facets, age, and task types on employees’ person-job fit and job satisfaction.

Fourth, although the research design allowed us to investigate the relationships between the different facets of job crafting, person-job fit, and job satisfaction, other variables may have also affected our results. Future research is expected to explore the underlying mechanisms that could play an important role in enhancing our understanding of these relationships. For instance, even though our supplementary analysis provides the evidence that both two dimensions of person-job fit (i.e., demands-abilities fit and needs-supplies fit; Cable & DeRue, 2002) mediate the job crafting-job satisfaction relationship, future research could further examine the two types of person-job fit separately. One approach is to include basic psychological need satisfaction as a possible mechanism through which specific job crafting facets may lead to needs-supplies fit (Slemp & Vella-Brodrick, 2014). Specifically, based on self-determination theory (Ryan & Deci, 2000), the needs for autonomy, relatedness, and competence may serve as the main internal driver of task, relational, and cognitive crafting, respectively, and further promote needs-supplies fit.

Finally, we only examined employees’ age as a moderator on the relationships between different forms of job crafting and person-job fit. However, previous studies have shown that other personal characteristics (e.g., occupational role salience; Petrou et al., 2017) and contextual factors (e.g., perceived organizational support; Cheng & O-Yang, 2018) could also moderate the impact of job crafting on work-related consequences. Our research has not provided an integrated investigation of these different types of boundary conditions. In addition, broader contextual factors mentioned above, namely cultural contexts, may also play a moderating role in these relationships, such as collectivism or individualism, male chauvinism, or feminism. Therefore, future

research is expected to examine different types of boundary conditions of the job crafting-outcome relations in a more comprehensive and overarching manner.

Conclusion

In conclusion, this study aims to explore how employees utilize different job crafting strategies to balance their job resources and the evolving job demands in a complex and turbulent business environment. From a JD-R perspective, our study provides encouraging empirical results that emphasize that any form of job crafting can strengthen employees' job satisfaction through person-job fit, and employees' age differentially moderates the mediated relationships between the three forms of job crafting and job satisfaction. These findings add to the comprehensive understanding of the role of each type of job crafting in employees' person-job fit and job satisfaction. Moreover, managers can help employees of all ages to improve their current work experiences by providing targeted support for employees to craft their jobs in different ways in response to job demands.

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Data Availability The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

Conflict of Interest On behalf of all authors, the corresponding author states that they have no conflict of interest.

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