

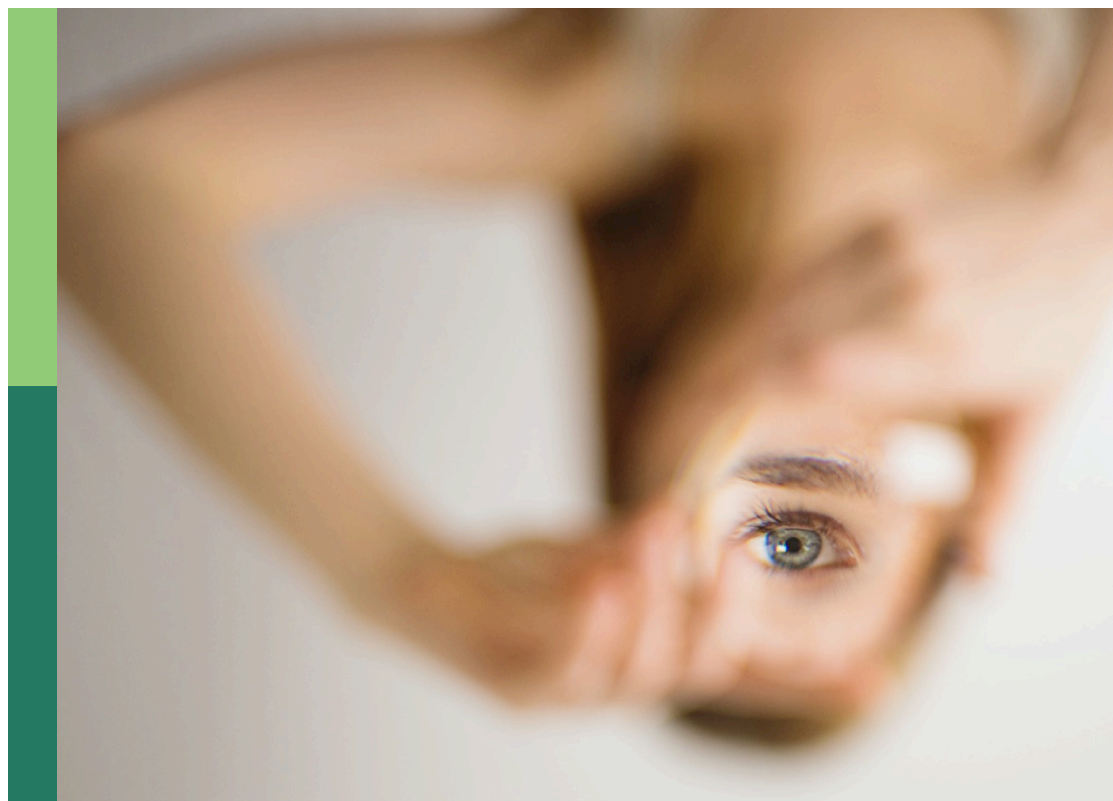
# Proactive work design in unstructured work: New challenges and opportunities

**Edited by**

Arianna Costantini, Keri Pekaar, Hai-Jiang Wang and Piet Van Gool

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# Proactive work design in unstructured work: New challenges and opportunities

## Topic editors

Arianna Costantini — University of Trento, Italy

Keri Pekaar — Eindhoven University of Technology, Netherlands

Hai-Jiang Wang — Huazhong University of Science and Technology, China

Piet Van Gool — Eindhoven University of Technology, Netherlands

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EDITED AND REVIEWED BY  
Alexandros Psychogios,  
Birmingham City University, United Kingdom

\*CORRESPONDENCE  
Arianna Costantini  
✉ arianna.costantini@unitn.it

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# Editorial: Proactive work design in unstructured work: New challenges and opportunities

Arianna Costantini<sup>1\*</sup>, Hai-Jiang Wang<sup>2</sup>, Keri A. Pekaar<sup>3</sup> and  
Piet van Gool<sup>4</sup>

<sup>1</sup>Department of Psychology and Cognitive Science, University of Trento, Trento, Italy, <sup>2</sup>School of Management, Huazhong University of Science and Technology, Wuhan, China, <sup>3</sup>Department of Human Resource Studies, Tilburg University, Tilburg, Netherlands, <sup>4</sup>Department of Industrial Engineering and Innovation Sciences, Eindhoven University of Technology, Eindhoven, Netherlands

## KEYWORDS

hybrid work, job crafting, job design, new ways of working, proactive work behaviors, remote work

## Editorial on the Research Topic

Proactive work design in unstructured work: New challenges and opportunities

## Introduction

The pandemic lit up a revolution in the world of work that arrived almost overnight but whose impact is still alive and seems to be here to stay (Becker et al., 2022). The significant changes in the experience of work spanned from its more tangible aspects, with the abrupt transition to remote and then hybrid work, to its relational components and a profound redefinition of the meanings of work. Within this new context, employees have to find their own ways to deal with remote collaboration, cope with insecurity, and shape new meanings of the boundaries between work and personal domains (Gino and Cable, 2020).

In these times of change, in this Research Topic we aimed to deepen our understanding of the ways in which organizations and employees navigate this unprecedented situation and use agentic change to create the conditions that work best for them, reinventing work and its configurations. We are excited to introduce nine articles presenting research from all over the world that unpack a complex net of processes unfolding at different levels of analysis and across different contexts to create the future of work.

## Articles

### Organizational policies and work characteristics as influences

Widening the scope of autonomy in carrying out work, de Bloom et al. present a conceptual review on unlimited paid time off policies (UPTO) through which employees have the opportunity to take time off from work whenever desired while receiving their full wage. In their review, they present and discuss the psychological and social mechanisms linking UPTO to potential beneficial outcomes and unintended detrimental social consequences that may result from unbound autonomy.

Zooming in on the context of telework, [Liu et al.](#) focus on how to ensure that employees with distributed work arrangements still feel attached to their organizations. Their three-wave study attests the key role of feedback quality for teleworkers' experience of organizational support—a link that is particularly important for conscientious teleworkers—which then promotes a higher sense of belongingness toward the organization.

[Bai et al.](#) acknowledge the increasing complexity that characterizes contemporary jobs and investigate how complexity can represent a trigger of motivational states and energy levels. Their three-wave study shows that jobs that are mentally demanding and challenging push employees to craft their tasks and relationships in approach-oriented ways due to their high motivational potential. They also show that such high complexity can result in withdrawal-oriented behaviors when employees' energetic resources are depleted due to the high job complexity.

Further enriching our understanding of how job complexity is linked to proactive employee behaviors, [Schmitt](#) examines the role of employees' awareness and processing of sensory information and their reactivity to internal and external stimuli as boundary conditions influencing proactive work behaviors. Her results show that employees displaying high awareness and openness to the positive aspects of one's surroundings engage in proactive work behaviors more often and are better able to translate higher job complexity into opportunities to be more proactive at work than employees who are less aware of their surroundings.

## Employees shaping their experiences through personal proactivity

Focusing on proactive job redesign to promote engaging and significant work during remote work, [Costantini](#) and [Weintraub](#) present a weekly diary study on the dynamics of different strategies that employees use to shape the work conditions that fit them best. They show that employees who proactively build connections with others because they can self-regulate their work through self-goal setting reported higher significance in their work tasks. Moreover, in weeks when employees proactively expanded their social interactions due to the positive effects of higher self-goal setting, they reported higher weekly work engagement.

[Li et al.](#) further investigate how proactive strategies focused on building harmonious relationships at work can be linked to different work outcomes. Using two-wave data, they show that such proactive efforts may slow down work processes and impair employees' energy levels but also that crafting relational aspects can benefit a sense of personal connection—*guanxi*—at the workplace, which promotes higher work engagement and limits emotional exhaustion.

Providing insights on the timely topic of the great resignation, [Xin et al.](#) present a two-wave study investigating the role of employees' work proactivity in influencing turnover intentions and how perceived organizational instrumentality and inclusive leadership may be involved in such a relation. Their results show that employees who craft their jobs perceive the organization as a context providing them with opportunities to achieve their personal goals, which leads to lower turnover intentions. Importantly, this relation turned out to be weaker in the context of higher inclusive leadership. However, they also show that job crafting alone can lead

to higher turnover intentions when organizational instrumentality is not accounted for, highlighting the importance of employees seeing their organization as a context to achieve their personal goals.

Expanding our understanding of the mechanisms underlying proactivity in the face of great uncertainty, [Koen and van Bezouw](#) present a three-wave study showing that feelings of job insecurity can prompt future focus among participants reporting high-income adequacy. Moreover, such a focus triggers greater engagement in proactive career behaviors that are associated with lower expected likelihood of losing one's job.

Finally, [Kerksieck et al.](#) shift the focus to the proactive crafting of the balance of work-to-nonwork interfaces. In five studies with participants from five different countries, they introduce a new instrument to measure how employees craft an idiosyncratic balance of work and nonwork domains and show that these proactive efforts are positively linked with wellbeing indicators and perceptions of work-nonwork balance.

## Conclusions and practical implications

The studies included in this Research Topic provide timely insights into understanding the work transformations brought about by the pandemic and how employees and organizations cope with these changes. In doing so, the contributions provide a set of empirical examples supporting recent theoretical frameworks on how the constellation of job characteristics can be transformed during times of crisis and on the intertwined roles of different actors when it comes to managing crisis to support employee health and motivation ([Demerouti and Bakker, 2022](#)). By analyzing the roles of both contextual and individual factors, the contributions presented here provide interesting insights into how effective crisis management depends on joint efforts from multiple stakeholders.

[De Bloom et al.](#) and [Liu et al.](#) highlight that in unstructured work, HR policies should be even more clear in expressing what they expect from their employees and how to support them. For example, when designing HR policies, organizations should be aware that UPTO policies have the potential to contribute to better work-nonwork balance but may also arouse feelings of uncertainty and guilt about the completion of work ([de Bloom et al.](#)). In a similar vein, when it comes to fostering a sense of attachment to the organization in the context of distributed work, high-quality feedback and perceived organizational support are essential keys for building teleworkers' sense of belongingness ([Liu et al.](#)).

Focusing on how jobs are designed when a clear structure is lacking, the studies from [Koen and van Bezouw](#) and [Bai et al.](#) show how times of crisis can increase the levels of job demands—job insecurity and job complexity, respectively—and the importance of (job) resources to effectively manage the additional effort. Highlighting the importance of a synergistic perspective to the management of uncertainty, [Bai et al.](#) and [Schmitt](#) show that while job complexity can represent a positive component of unstructured work leading to a gain spiral of proactive behaviors, especially for more sensitive employees, organizations should make sure to buffer the complementing psychological costs of proactivity with additional resources. The implication that follows is that the relevance of job resources becomes even more salient during such uncertain and complex times in preventing detrimental consequences and

supporting employees' potential for proactivity (Demerouti and Bakker, 2022).

The studies included here also provide insights into how regulatory individual strategies function in the context of unstructured work settings. Self-rewards and relational crafting can be important strategies to build a sense of community when dealing with the challenges of remote working (Costantini and Weintraub). However, job and relational crafting in times of crisis may also have a double-edged nature: on the one hand, these strategies may improve work dynamics and foster perceptions of the organization as a context for personal development, on the other hand, they may also increase emotional exhaustion due to additional individual efforts and heighten turnover intentions because employees feel that they may be interesting for future employers (Li et al.; Xin et al.). Finally, Kerksieck et al. show that when employees use their personal initiative when confronted with managing work and nonwork duties in the face of blurred boundaries, this can lead to beneficial outcomes for their wellbeing and performance. Hence, it seems that, overall, proactive regulatory attempts can help individuals manage uncertainty by modifying the impact of demands and resources on relevant outcomes (Demerouti and Bakker, 2022). However, organizations should also be aware that such proactive efforts can imply individual costs that should be accounted for by the provision of additional resources.

We hope that this Research Topic stimulates future research exploring the processes and outcomes of how organizations

and employees reinvent work to bounce forward during challenging times.

## Author contributions

AC drafted the first version of the editorial. All authors provided conceptual input and approved the final draft.

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# Examining Job Complexity on Job Crafting Within Conservation of Resources Theory: A Dual-Path Mediation Model

Jing Yi Bai<sup>1†</sup>, Qing Tian<sup>1\*†</sup> and Xia Liu<sup>2,3\*</sup>

<sup>1</sup>School of Business, Macau University of Science and Technology, Macau, Macao, SAR China, <sup>2</sup>School of Business, Macau University of Science and Technology, Taipa, Macao, SAR China, <sup>3</sup>School of Humanities and Management, Southwest Medical University, Luzhou, China

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### Edited by:

Arianna Costantini,  
University of Verona, Italy

### Reviewed by:

Samma Faiz Rasool,  
Guangzhou University, China  
Abdulah Bajaba,  
Louisiana Tech University,  
United States  
Wenhai Wan,  
Huaqiao University, China

### \*Correspondence:

Qing Tian  
qtian@must.edu.mo  
Xia Liu  
1917017001@qq.com

<sup>†</sup>These authors have contributed  
equally to this work

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This study examined the different ways in which job complexity influences employees' job crafting. Specifically, we draw on conservation of resources (COR) theory to hypothesize that job complexity is positively related to approach crafting *via* work engagement (i.e., resource gain process). At the same time, job complexity may also induce employees to engage in avoidance crafting (i.e., resource loss process) as employee energy resources are depleted. Our data consist of 251 employees working in Macau. We used structural equation modeling (SEM) in Mplus software to test the proposed hypotheses. Our findings confirm that job complexity has differential effects on approach and avoidance crafting through work engagement and energy depletion. These findings highlight the importance of costs and benefits of job complexity and the importance of resources in the employees' job crafting process. We discuss the practical implications for modern organizations in which complex jobs are prevalent.

**Keywords:** job complexity, work engagement, energy depletion, approach crafting, avoidance crafting

## INTRODUCTION

The radical changes in the work environment deriving from the COVID-19 pandemic have been challenging the traditional work design (Wang et al., 2021). Today, job holders often face increasingly complex job demands resulting from the increasing fluidity in employment arrangements (Ingusci et al., 2021). Job complexity refers to jobs that are mentally challenging and therefore require the use of an employee's personal resources to cope with the amount of stress involved (Sacramento et al., 2013; Sung et al., 2017). Such demanding jobs often induce employees to work faster and longer or to alter their work habits (Ragu-Nathan et al., 2008). Therefore, highly complex jobs push employees to develop new strategies to craft their jobs so that they can acquire and conserve their valuable resources. Employees' proactivity to adapt to job requirements and craft their jobs is thus becoming more important than ever (Wrzesniewski and Dutton, 2001; Tims and Bakker, 2010; Zhang et al., 2021).

Job crafting can be either approach- or avoidance-oriented (Bruning and Campion, 2018; Bindl et al., 2019; Zhang and Parker, 2019; Costantini et al., 2021). More specifically, in approach crafting employees accept the challenge stressors, increase resources, or improve work

experience, whereas in avoidance crafting employees seek to withdraw from the job work roles (Bruning and Campion, 2018). Existing studies found that employees tend to favor the approach crafting (Lichtenthaler and Fischbach, 2019, p. 31; see also the empirical study Cenciotti et al., 2017; Petrou et al., 2017). Our study considers both approach and avoidance crafting (Bruning and Campion, 2018) because employees' approach and avoidance crafting can be triggered by certain psychological states simultaneously (Lichtenthaler and Fischbach, 2019). Moreover, despite existing research on the impacts of job characteristics (such as task complexity) on job crafting (e.g., Ghitulescu, 2007), the mechanisms underlying the relationship between job complexity and employees' approach and avoidance crafting are unclear. Our research examines whether and how job complexity affects employees' job crafting through a dual-mediation pathway.

We draw upon conservation of resources (COR) theory to investigate how job complexity leads to distinct forms of job crafting, resulting in approach and avoidance strategies. COR theory assumes that individuals' resources are salient factors in explaining individuals' coping responses when confronted with demanding situations (Hobfoll, 1989). When dealing with complex jobs and potential threats to their resources and wellbeing, employees will actively strive to acquire additional resources or conserve resources (Hobfoll, 1989; Harju et al., 2016). According to COR theory, complex jobs may enhance individuals' intrinsic interest in finding meaning in their work (Cavanaugh et al., 2000; Chung-Yan, 2010), which can further energize them to grow and achieve. Job complexity represents a strong motivational force in the work setting (Shalley et al., 2009; Sung et al., 2017), leading to employees' resource gain. Employees feel especially engaged in their work when personal growth and achievements meet with increased efforts dealing with complicated tasks (Breevaart and Bakker, 2018). We examine the role played by work engagement to increase resource gain and its importance for the relationship between job complexity and job crafting. Work engagement is a positive motivational state that combines high energy with a strong intention to invest one's resources to work (Schaufeli and Bakker, 2010). This engaged state enables employees to cope with complex jobs more proactively and causes them to craft their jobs employing the approach strategy way. Employees that are highly engaged are energetic and enthusiastic about their work and, therefore, may be more welcoming to challenging work activities (Rasool et al., 2020).

Nevertheless, complex jobs are challenging (Sung et al., 2017; Pan and Sun, 2018). As the increasing complexity of tasks increases exploitation, employees may not cope with increasing demands due to limited personal resources (Xie and Johns, 1995; Hakanen et al., 2006). Complex jobs bring high expectations and responsibilities to employees and require them to invest extra time and effort to cope with the assignments. This burdensome process drains employees' valuable personal resources, resulting in resource loss (Pan and Sun, 2018) as employees are trying to cope with the demanding and potentially challenging assignments (Halbesleben et al., 2014). When employees have insufficient resources to cope with increasingly

demanding tasks, they eventually feel very overextended and withdraw from their work role, i.e., reduce, or eliminate part of their works to protect and retain their resources (Nielsen, 2013; Harju et al., 2016). Based on the resource gain and resource loss processes of COR theory, we examine how work engagement and energy depletion affect the relationship between job complexity and job crafting.

This research contributes to job crafting theory by exploring the antecedents of employees' approach and avoidance crafting, responding to the calls by Zhang and Parker (2019) for examining the "variables that predict all types of job crafting (including approach and avoidance types) in the same direction (p. 140)." Our study considers both the approach and avoidance strategies to job crafting and synthesizes their antecedents to fill this knowledge gap. By examining the integrated and comprehensive framework of job crafting, our study provides a more nuanced and systematic view of the job crafting phenomenon by examining the underlying mechanisms that govern the relationship between job complexity and approach/avoidance crafting.

Furthermore, our study offers a balanced view to exploring the dual effects of job complexity. We propose that complex jobs may – on the one hand – enhance work engagement, which in turn increases approach crafting through resource gain and – on the other hand – lead to energy depletion, which increases avoidance crafting through resource loss. Thus, our study provides a better understanding of the motivational and strain mechanisms related to job complexity. By exploring these mechanisms, we challenge existing assumptions according to which job complexity primarily energizes employees in the workplace (for reviews, see Ilgen and Hollenbeck, 1991; Morgeson and Campion, 2003). At the same time, we propose that job complexity depletes employees' psychological energy resources. Managers should be aware of the trade-offs of job complexity that may represent threats to employee wellbeing (Karasek, 1979). This may require a change in managers' mindsets which may in turn influence job design in an era when challenging jobs are becoming increasingly prevalent.

Lastly, by exploring the dual processes of COR theory, this study takes a closer look at job crafting from the resource gain and resource loss perspective and makes novel predictions regarding approach and avoidance crafting. Work engagement represents a resource gain process in which employees actively deal with complex jobs, whereas energy depletion represents a resource loss process in which employees reduce and avoid stressful job demands. We suggest that job complexity not only motivates approach crafting *via* increased work engagement but also triggers avoidance crafting *via* increased energy depletion.

This paper is organized as follows. First, we discuss the resource gain and resource loss processes of COR theory and how approach and avoidance crafting act as a behavioral manifestation of individuals' current resources. Then, we develop our main hypotheses and the dual-path mediation model to test our hypotheses before presenting a detailed account of the methodology and results. Finally, we discuss the implications of our results and point out possible limitations and future research directions.



## Theoretical Background and Hypothesis Development

### Theoretical Background

Conservation of resources theory assumes that individuals are highly motivated to accumulate additional resources for the future. COR theory contains the concepts of “resource gain” and “resource loss” processes (Hobfoll, 1989) which present two predictions regarding the use of approach and avoidance job crafting strategies in the workplace. “Resource gain” suggests that individuals employ the approach strategy to acquire additional structure and social resources (e.g., gaining opportunity to develop oneself and asking for feedback; Tims et al., 2012). “Resource loss” occurs when individuals with highly complex and demanding jobs use avoidance crafting to protect and conserve their resources. Challenging tasks may require additional time and energy which can lead to employees engaging in avoidance crafting to reduce the loss of valuable resources. Thus, based on COR theory, employees may adopt approach and avoidance crafting selectively and strategically to deal with complex jobs.

There are two job crafting conceptualizations, namely, resource-based and role-based perspectives, which differ in job crafting types and job crafting motives (Wrzesniewski and Dutton, 2001; Tims and Bakker, 2010). Researchers have generally focused on the approach aspect of job crafting (e.g., expansions of task boundaries). Little is known about the motives that lead employees to apply an avoidance strategy, i.e., to reduce their work role boundaries. Recent studies that have integrated both crafting frameworks tend to agree that employees both expand (i.e., approach crafting) and reduce (i.e., avoidance crafting) their job boundaries (e.g., Bruning and Campion, 2018; Lichtenthaler and Fischbach, 2019; Zhang and Parker, 2019). Approach crafting activities are active, effortful, motivated, and directed toward positive aspects of work. In contrast, avoidance crafting involves avoiding or escaping from negative aspects of work. However, there is no empirical evidence regarding the mechanisms behind the relationship of complex jobs and approach and avoidance crafting. Individuals will acquire new resources to achieve goals and engage in activities to acquire additional resources (i.e., resource gain; Hobfoll, 1989; Halbesleben et al., 2014). Approach crafting is instrumental in acquiring extra resources to seek positive aspects of work (i.e., work role expansion, social expansion, work organization, adoption, and metacognition; Bruning and Campion, 2018). Specifically, work role expansion refers to how employees can extend their work role beyond their formal job description. Social expansion involves the proactive use of social resources involving their colleagues and supervisors. Work organization refers to employees proactively designing and organizing their work and surroundings. Employees can also craft their jobs through adoption, i.e., using technology and knowledge to enhance the work process. Metacognition captures employees’ cognitive sensemaking about their jobs and represents the manipulation of their psychological state. Employees performing highly complicated jobs may be most conducive to increased approach crafting behavior to gain additional resources (Kuijpers et al., 2020). On the other hand, individuals protect the limited

personal resources and prevent them from becoming depleted (i.e., resource loss) through avoidance crafting (i.e., withdrawal crafting and work role reduction). Withdrawal crafting suggests that employees may remove themselves from a person, situation, or event either mentally or physically, while employees may also consciously and proactively reduce their work role responsibility (i.e., work role reduction; Bruning and Campion, 2018). Employees with complex jobs may engage in avoidance crafting to protect existing resources (Hobfoll, 2001; Halbesleben and Bowler, 2007). Thus, our theoretical model suggests that job complexity leads to both resource gain and resource loss processes, which may, in turn, lead to approach and avoidance crafting.

### Job Complexity and Approach/Avoidance Crafting

Conservation of resources theory (Hobfoll, 1989) assumes that individuals acquire additional resources to meet challenging tasks when they perceive potential personal growth and resource gains. Resources aid the process of growth and gain, because initial resource promotes future gain, thus generating “gain spirals” (Chen et al., 2015 p. 97). Based on COR theory, we argue that job complexity is positively related to approach crafting. Job complexity facilitates thinking skills and triggers employees’ initiatives to acquire more knowledge, information, and support from colleagues (Sung et al., 2017). Thus, complex jobs will most likely help employees develop their skills and gain additional resources from their work environment. In this view, job complexity motivates and legitimates employees’ self-job redesign and self-management, such as job crafting (Hornung et al., 2010; Ohly and Fritz, 2010; Petrou et al., 2012). Complex jobs also increase task motivation and enable employees to exhibit skills and novel approaches to solve problems. Employees will be prompted to craft their job to fulfill the required tasks (Frese et al., 2007; Tims et al., 2013; Kuijpers et al., 2020).

Tims and Bakker (2010) suggested that complicated tasks will increase employees’ ability to identify alternative opportunities and strategies to obtain additional resources. Under challenging job conditions, employees focus on acquiring resources and on investing their resources to gain additional resources through job crafting (Nielsen, 2013; Harju et al., 2016). For example, employees need to process information and experience new problems, which often create constructive interaction with supervisors or other colleagues that provide help, support, and guidance. Thus, approach crafting aiming at acquiring resources may represent a favorable way to handle complex jobs.

However, some employees with complex jobs may employ an avoidance strategy. According to the resource loss process in COR theory, employees exposed to a stressful situation tend to have a more negative work attitude (Samma et al., 2020). Job complexity prompts employees to experience strain and use avoidance crafting to reduce their strains. Complex jobs create extensive responsibilities and strain employees’ time and efforts, depleting their energy and resources (Ito and Brotheridge, 2003). Employees may want

to reduce demands to reduce resource loss. Therefore, employees with highly complex jobs may employ escape/avoidance strategies to ease their strains.

Building on COR theory, we posit that approach crafting represents a resource gain process as employees deal with challenging job demands that motivate them, whereas avoidance crafting constitutes a resource loss process when employees feel that such job demands are overly stressful. Employees are inclined to choose tasks at which they will perform well and that are not too difficult (Elliot and Thrash, 2001). Approach crafting seeks to obtain and retain the positive aspects of work and gives employees an opportunity to demonstrate their competence (Elliott and Dweck, 1988; Harju et al., 2021). However, avoidance crafting occurs when employees try to avoid potential failure when handling certain tasks which may have them appear incompetent (Harju et al., 2021). Thus, employees may avoid certain aspects of complex jobs while approaching others. We suggest the following hypothesis:

*Hypothesis 1:* Job complexity is positively related to approach crafting.

*Hypothesis 2:* Job complexity is positively related to avoidance crafting.

## Job Complexity and Work Engagement

Unlike routinized jobs, complex jobs provide employees with more opportunities to explore, exercise control, and be responsible for outcomes (Pierce et al., 2009), generating positive states of vigor, dedication, and absorption (i.e., work engagement). Job complexity satisfies individuals' desire to learn and achieve at work since complex jobs offer the kinds of opportunities and internal rewards they value. Specifically, complex jobs are more malleable and accessible in making changes and employees are encouraged to consider alternative solutions to handle them (Pierce et al., 2009). Thus, employees are more likely to invest more of themselves (e.g., their resources, time, and efforts) into the job (Brown et al., 2014). Moreover, complex jobs are stimulating and challenging, which may trigger employees to invest additional efforts to fulfill achievements and lead to the motivational process (Chung-Yan, 2010). Such resource gain process triggered by job complexity results in the positive effects that include personal growth and development (LePine et al., 2005). Consequently, those employees may experience a high level of job meaningfulness (Bunderson and Thompson, 2009), which in turn will be reflected in a heightened sense of dedication.

Further, job complexity can enhance employees' absorption in their jobs because challenging jobs require a high level of information-processing capacity (Gardner and Cummings, 1988; Bledow et al., 2011). Complex jobs require individuals to become both self-absorbed and self-revealing to allocate work-related resources actively toward the tasks (Rich et al., 2010). In contrast, simple or routine jobs may cause boredom, distract employees from their tasks, and reduce their interest in tasks (Fisher, 1993), resulting in a lower level of work engagement (Gorgievski and Hobfoll, 2008). As such, job complexity triggers resource gains and fosters work engagement.

*Hypothesis 3:* Job complexity is positively related to work engagement.

## The Mediating Role of Work Engagement

More specifically, we hypothesize that work engagement plays a mediating role between job complexity and approach crafting behavior. According to COR theory, employees are motivated to accumulate and obtain valuable resources to deal with challenging job demands (i.e., resource gain process of COR theory). Complex jobs allow employees to personalize their tasks because confronting tough tasks enables them to seek new solutions to complete their jobs (Brown et al., 2014). Therefore, individuals experiencing complex jobs might craft their jobs more proactively because they can acquire additional resources to deal with challenging job demands through approach crafting. As dedicated employees are more likely to exert additional efforts to seek resources and information, employees with positive psychological functioning (i.e., high work engagement) are able to enhance their job crafting (Bakker and Demerouti, 2017). Approach crafting enables employees to accumulate additional tangible and intangible resources to reduce uncertainty and gain a strong social support network (Robinson and Griffiths, 2005); this enhances their productivity and enables them to cope with demanding and complex jobs.

Further, employees fully immersed in their work can use their personal resources more efficiently and tend to be more focused on their work (Chang et al., 2013). Employees immersed in their jobs are more likely to seek out new perspectives, challenges, and solutions. Besides, their immersion motivates employees to focus on work activities and be more persistent to achieve their goals. As a result, individuals feel motivated to invest themselves in their work and acquire the resources needed to overcome potential challenges (Aubé et al., 2009); all these endeavors facilitate approach crafting at work. Moreover, when individuals with challenging jobs are vigorous, they are more likely to consider problem-solving choices and actions to overcome their challenges (Barsade, 2002). This augmented positive cognitive state is an essential motivation for approach crafting because it allows individuals to build a new association between the job and the required resources.

Employees tend to acquire and invest resources to maximize their psychological energy resources (Halbesleben et al., 2014). Those with larger psychological resources can achieve their goals and thrive through the resource gain process. Employees with a high level of engagement will be motivated to gain additional resources through approach crafting actions, such as incorporating challenging tasks or seeking other social resources (Tims et al., 2012; Niessen et al., 2016). In line with the above discussion, we hypothesize that there exists a relationship between job complexity and approach crafting through work engagement.

*Hypothesis 4:* Work engagement mediates the positive relationship between job complexity and approach crafting.

## Job Complexity and Energy Depletion

Complex jobs do not always lead to positive psychological functioning but can lead to a negative psychological state, such as energy depletion. Employees with complex jobs may attempt to conserve energy in order to recover resource losses states (Samma et al., 2020). When employees fail to achieve a challenging goal, they will seek to conserve resources by reducing efforts for tasks that consume their resources (Hobfoll, 1989) and protect themselves from strains by reducing resource losses when employees feel hard to meet the requirements of challenging jobs and gain resources (LePine et al., 2005). Complex jobs may impose psychological and cognitive pressure on employees (Sung et al., 2017), leading to resource loss and energy depletion which most likely occurs when individuals possess inadequate resources or insufficient resource gain to meet work demands. Thus, job complexity potentially drains valuable resources, which leads them to experience physical and psychological exhaustion (Chung-Yan, 2010). Based on this reasoning, we propose that stressful situations caused by complex jobs are likely to wear out an employee's psychological energy resources.

*Hypothesis 5:* Job complexity is positively related to energy depletion.

## The Mediating Role of Energy Depletion

Our study also proposes that job complexity results in a resources loss process, leading to energy depletion. According to COR theory's resource loss process, individuals with complex jobs may craft their jobs less proactively to conserve resources. As workload, accumulation can cause employees feel overwhelmed and unable to deal with their tasks. As a result, they will feel frustrated and exhausted (Samma et al., 2020). By reducing their workload or withdrawing from their work role, they may then try to reduce strain and protect their valuable resources (Tims et al., 2012). Exhausted employees tend to display avoidance crafting because they cannot regulate their energy successfully (Demerouti et al., 2005) or adapt to their depleting resources (Wright and Hobfoll, 2004). Individuals who are in the condition of energy depletion might be more likely to withdraw from their job role to protect existing personal resources.

Employees with challenging jobs may experience a depletion of resources and will attempt to make their situations less overwhelming in the dysfunctional state of energy exhaustion (Hobfoll, 1989). Employees in the energetically depleted state may have difficulties recognizing opportunities and challenges but may also avoid challenges (Swider and Zimmerman, 2010). Avoidance crafting represents any efforts by employees to evade challenging job demands. It constitutes a resource loss process, where employees seek to mitigate the straining effects of work to protect their resources and improve their wellbeing (Harju et al., 2021). Since approach crafting requires additional efforts (Zhang and Parker, 2019), employees may adopt the avoidance strategy to relieve stress. The resource loss process of COR theory suggests that individuals with demanding jobs might

be less likely to engage in behavior that consumes their resources (Hobfoll, 1989). We suggest the existence of an indirect relationship between job complexity and avoidance crafting through energy depletion. **Figure 1** summarizes the proposed research model of this study.

*Hypothesis 6:* Energy depletion mediates the positive relationship between job complexity and avoidance crafting.

## MATERIALS AND METHODS

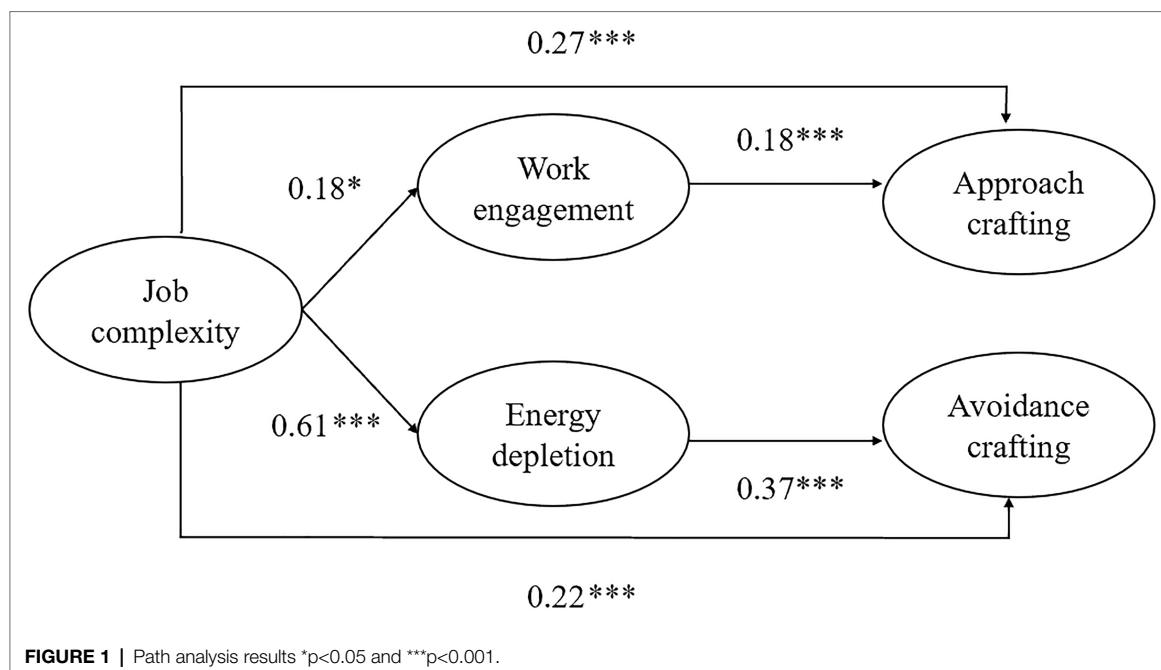
### Participants and Procedures

We tested our hypotheses with a sample of employees from six companies covering a variety of occupations and industries in Macau. Participants were recruited by contacting the human resource managers of the participating companies, requesting their assistance in our study. Using a questionnaire-based survey (e.g., Rasool et al., 2020), we collected data at three time points to reduce common method bias (Podsakoff et al., 2003). The questionnaire included the following parts: (i) a mention of the study purpose and privacy statements, (ii) the possible answers on a 5-point Likert scale, and (iii) the respondents' demographic information. Respondents were notified that participation in the survey was voluntary, confidential, and anonymous, as we did not use clear names but identification codes known only to the authors.

At Time 1 (T1), we distributed the paper-and-pencil survey to 400 employees and asked them to rate their job complexity level, receiving the completed survey from 367 participants (91.8% response rate). Approximately 2 weeks later after the participants had completed the Time 1 survey (at Time 2), they were asked to rate their work engagement and energy depletion. We chose to separate both questionnaires by a 2-weeks interval because our model deals with a psychological process and its effects on employee behavioral outcomes (for a similar approach see Deng et al., 2018). A total of 323 employees (88.0% response rate) returned the T2 survey. After an additional 2 weeks (at time T3), we sent out the last questionnaires to obtain information regarding the levels of the participants' approach and avoidance crafting. From the 292 returned questionnaires (90.4% response rate), 41 had to be discarded due to missing or randomly filled data (25) and unmatched responses (16), resulting in an overall response rate of 62.8% (i.e., 251 completed data sets from 400 questionnaires that had initially been sent out).

The 251 included participants had an average age of 42.12 years ( $SD=12.37$ ), an average organizational tenure of 6.95 years ( $SD=6.15$ ), and 51% of them were females. Their highest education levels were high school diploma (17%), a 2-year college or undergraduate degree (65%), or graduate degrees (18%). They were employed in a variety of occupations, including hotel frontline employees (35%), marketing and sales (24%), education (14%), finance (8%), and others (19%). Detailed descriptions of the samples are presented in **Table 1**.





## Measures

The survey measurement was translated into Chinese from the original construct in English. Back-translation procedures (Brislin, 1980) were applied to improve measurement reliability and validity in a different language.

### Job Complexity

We measured job complexity with the three-item scale developed by Shaw and Gupta (2004). One sample item is as: “My job is very complex.” Participants could respond to the items using a 5-point scale (1 = *strongly disagree*; 5 = *strongly agree*). The scale’s  $\alpha = 0.80$ .

### Work Engagement

We used the nine-item version of the Utrecht work engagement scale (UWES; Schaufeli et al., 2006). The UWES items reflect

three underlying dimensions, which are measured with three items each: Vigor (e.g., “At my work, I feel bursting with energy”); Dedication (e.g., “I am enthusiastic about my job”); and Absorption (e.g., “I get carried away when I am working”). All nine statements were measured with a 5-point Likert-type scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The scale’s  $\alpha = 0.93$ .

### Energy Depletion

Adopting an item from Bakker and Oerlemans (2019), we measured energy depletion: “How much energy did your job cost you?” with a 5-point scale (1 = *no energy whatsoever*; 5 = *all of my energy*).

### Job Crafting

We used the approach/avoidance crafting scale developed by Bruning and Campion (2018). Approach crafting was assessed using a 23-item scale (five dimensions,  $\alpha = 0.94$ ), with items, such as “Today, I expanded my role by providing opinions on important issues (work role expansion),” “Actively initiate positive interactions with others at work (social expansion),” “Create structure in my work processes (work organization),” “Use new knowledge or technology to enhance communication (adoption),” and “Use my thoughts to put myself into a good mood at work (metacognition).” Avoidance crafting was measured using a two-dimension scale ( $\alpha = 0.90$ ). An example item that reflects “work role reduction” is “Find ways to get others to take my place in meetings.” “Withdrawal” was measured with an example item, such as “Work in a way that allows me to avoid others at work.” Items were assessed with a five-point frequency scale where 1 = *never* and 5 = *all of the time*.

### Control Variables

As previous research indicated that demographic variables, such as gender, age, education level, and tenure, could be related

**TABLE 1** | Sample characteristics.

Measure	Items	Frequency (n)	Percentage (%)
Gender	Male	123	49
	Female	128	51
Education	High school diploma	42	17
	Associate degree	62	25
	Bachelor degree	100	40
	Master degree or above	47	18
Occupation	Hotel frontline employees	88	35
	Marketing and sales	60	24
	Education	35	14
	Finance	20	8
	Others	48	19

to job crafting (Tims et al., 2013; Rudolph et al., 2017), we controlled for these variables.

Important to check first is whether approach crafting and avoidance crafting are different constructs. The two-factor structure with approach and avoidance crafting as separate latent factors ( $\chi^2=58.075$ ,  $df=53$ ,  $p>0.05$ ; CFI=0.997; RMSEA=0.020) provided a significantly better fit to the data than the single-factor structure ( $\chi^2=502.139$ ,  $df=54$ ,  $p<0.001$ ; CFI=0.705; RMSEA=0.182;  $\Delta\chi^2=444.064$ ,  $df=1$ ,  $p<0.001$ ). Further, the correlation between the two job crafting measures observed in the current data ( $r=-0.08$ ) was comparable with those reported in previous studies (Rudolph et al., 2017). Consistent with Rudolph et al. (2017), they meta-analytically examined how well the four job crafting dimensions proposed by Tims et al. (2012) fit together. The findings indicate that avoidance-oriented job crafting (i.e., decreasing hindering job demands) loaded much lower (0.047) than the other three approach-oriented job crafting dimensions (e.g., increasing social job resources).

## Analysis Strategy

To test this dual-mediation model, we used structural equation modeling (SEM) to investigate the hypothesized relationships using the Mplus software (v.8.3). Indirect effects were tested using the bootstrapping method. Following Edwards and Lambert (2007), we used moderated path analysis and bootstrapping to test the moderated mediation hypotheses. Given the relatively small sample size compared to the number of items, we modeled the variables as latent variables with parcels (Marsh et al., 1998). For example, for the latent construct approach crafting, five parcels were created for each approach crafting dimension. Parceling can make the measurement models more reliable (Little et al., 2002). Also, the reliability of the parcels was checked, and all reliability estimates were above 0.84.

## RESULT

### Reliability Analysis

Table 2 reports means, standard deviations, correlations, and their Cronbach's alpha values of all study variables. The scales used were highly reliable as the value of Cronbach's alpha was above the standard.70.

### Common Method Bias

Given that data were collected through a single source, we conducted Harman's single-factor analysis to test whether common method bias can be a potential concern in our study (see Podsakoff and Organ, 1986). The first factor in the unrotated structure had an eigenvalue of 10.90 and only accounted for 25.96 per cent of the variance. This suggests that common method bias is less likely to influence the results of this study.

### Confirmatory Factor Analyses

Before hypotheses testing, we conducted a series of confirmatory procedures to examine the discriminant validity of the study's

key measures: job complexity, work engagement, approach, and avoidance crafting (see Table 3). We excluded energy depletion into our measurement model because the model failed to convergence (only one item scale to measure energy depletion). The results showed that proposed four-factor measurement model resulted in a good fit with the data ( $\chi^2=278.82$ ,  $df=224$ ,  $p<0.01$ ; CFI=0.98; RMSEA=0.03). In addition, the standardized factor loadings ranged from 0.67 to 0.85, and all of them were significant at a level of  $p<0.001$ , demonstrating relatively good convergent validity. Table 3 shows that various alternative measurement models displayed a significantly worse fit than the hypothesized four-factor model (all  $\Delta\chi^2$  tests,  $p<0.01$ ). The results provided support for the distinctiveness of the key measures in this study. Thus, we proceeded to hypothesis testing using the five study variables.

## Hypotheses Testing

We tested our dual-research model in Mplus Version 8.3 (Muthén and Muthén, 2017). In Hypothesis 1, we expect that job complexity predicts approach crafting. The results showed that complex job was positively related to approach crafting ( $b=0.27$ ,  $p<0.001$ ; see Table 4), supporting Hypothesis 1. Hypothesis 2 suggests that job complexity is positively related to avoidance crafting. The results revealed that job complexity was positively related to avoidance crafting ( $b=0.22$ ,  $p<0.001$ ; see Table 4). Thus, Hypothesis 2 was supported.

Job complexity was significantly related to work engagement ( $b=0.18$ ,  $p<0.05$ ; see Figure 1), supporting Hypothesis 3. In Hypothesis 4, we expect that work engagement mediates the relationship between job complexity and approach crafting. We bootstrapped 10,000 samples and used the bootstrap estimates to construct bias-corrected confidence intervals (CI) for all significance tests reported in this study (Mooney et al., 1993; Shrout and Bolger, 2002). The bootstrap estimate (0.03) for the indirect effect fell within the 95% bias-corrected confidence interval 95% CI [0.01, 0.07], supporting the significance of work engagement as a mediator in the relationship between job complexity and approach crafting (see Table 4). As to Hypothesis 5, job complexity was significantly related to energy depletion ( $b=0.61$ ,  $p<0.001$ ; see Figure 1). In Hypothesis 6, the bootstrap estimate (0.22) for the indirect effect fell within the 95% bias-corrected confidence interval 95% CI [0.15, 0.32], supporting energy depletion fully mediating the relationship between job complexity and avoidance crafting (see Table 4). Thus, Hypothesis 6 was supported.

## DISCUSSION

This study provided insight into how job complexity can lead to approach and avoidance crafting via two mediating pathways. The three-wave field study involving 251 employees revealed that job complexity was positively associated with work engagement and energy depletion, which in turn, were positively associated with approach and avoidance crafting, respectively. Our findings are consistent with previous findings which

**TABLE 2 |** Means, standard deviations, and correlations among study variables.

Variables	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9
1.Age	42.12	12.37	–								
2.Gender	0.51	0.50	–0.01	–							
3.Education	15.46	1.84	–0.08	0.10	–						
4.Tenure	6.95	6.15	0.45**	0.00	0.03	–					
5.Job complexity	3.94	0.74	–0.07	–0.01	0.06	–0.04	<b>(0.80)</b>				
6.Work engagement	3.86	0.80	–0.06	–0.03	0.06	0.05	0.18**	<b>(0.93)</b>			
7.Energy depletion	3.53	1.10	–0.01	–0.05	–0.17**	–0.06	0.40**	–0.11	–		
8.Approach crafting	3.61	0.72	–0.07	0.03	–0.11	–0.07	0.29**	0.25**	–0.05	<b>(0.94)</b>	
9.Avoidance crafting	3.59	0.93	0.01	0.02	–0.09	0.03	0.17**	–0.17**	0.43**	–0.08	<b>(0.90)</b>

*n* = 251. Gender (male = 0; female = 1); education (e.g., “12” for “high school diploma,” “15” for “associate degree,” “16” for “bachelor degree,” and “18” for “master degree or above”). Reliabilities of the scales are boldfaced and noted in the diagonals. \*\**p* < 0.01. Two-tailed tests.

**TABLE 3 |** The confirmatory factor analysis results.

Model	Descriptions	$\chi^2$	<i>df</i>	TLI	CFI	RMSEA	$\Delta\chi^2$
Model 1	Four factors: Job complexity, work engagement, approach crafting and avoidance crafting	278.82	224	0.98	0.98	0.03	
Model 2	Three factors: Job complexity and work engagement were combined into one factor.	547.96	227	0.89	0.90	0.08	269.15***
Model 3	Three factors: Approach crafting and avoidance crafting were combined into one factor.	755.36	227	0.81	0.83	0.10	476.54***

\*\*\**p* < 0.001.

suggested that employees craft their jobs to acquire, protect, and retain resources to deal with stressful situations as they arise (Nielsen, 2013; Harju et al., 2016).

Our findings show that job complexity leads to avoidance crafting only when energy is depleted, while it is in any case directly related to approach crafting. The possible explanations are that individuals see potential gains in proactively changing job characteristics, such as job demands and resources (Ma et al., 2019). Individuals strive for problem-solving goals and take over the challenging tasks once they believe such challenges may fulfill their competence and autonomy (Parker et al., 2006). However, avoidance crafting may lower employees' perception of self-competence and frustrate their positive self-image among others (Wang et al., 2017). Taking the interpersonal work context into account, coworkers reinforce the “approach” or reject the “avoidance” work behaviors (Tims and Parker, 2019). When job crafters withdraw from their work role under the complex jobs, coworkers' may have negative attribution that may decrease the job crafter's positive self-image. As such, our results show that job complexity directly leads to approach strategies, which may prevent energy depletion in the long term, while it leads to avoidance crafting only when energy is already depleted.

## Theoretical Implications

Our study makes several theoretical contributions to the field. Firstly, this study examines the underlying psychological mechanisms of job complexity and approach/avoidance crafting and contributes valuable knowledge to elucidate the psychological mechanisms linking the various antecedents to approach and avoidance crafting, a field of research that is only poorly

explored (Ghitulescu, 2007). Individuals can either try to handle complex job demands by optimizing their resources investment through approach crafting, or they may try to cope with excessive demands by engaging in avoidance crafting (Zhang and Parker, 2019; Costantini et al., 2021). We suggest that the current resource state of an employee determines his/her adoption of approach versus avoidance crafting. Specifically, our study indicated that work engagement (i.e., resource gain process) and energy depletion (i.e., resource loss process) trigger approach and avoidance job crafting, respectively. This finding indicates that the emergence of different job crafting types from the same task design can instigate different resource states among employees.

Secondly, our results emphasize the importance of motivational and strain aspects. Complex jobs oriented on development stimulate higher levels of work motivation by creating critical psychological states in employees (i.e., work engagement) that enable them to engage in approach crafting. Job complexity leads to energy depletion which can lead to avoidance crafting. We therefore investigated how job complexity can trigger different employee workplace attitudes which can in turn prompt different forms of job crafting. Our results provide input for future research on the motivational and strain consequences of job complexity on employee functioning.

Thirdly, using COR theory as theoretical lens, our study offers empirical evidence that supports the resource gain and loss processes postulated in COR theory (Halbesleben et al., 2014). COR theory suggests that these competing processes help explain how individuals manage their resources in order to cope with demands (Dawson et al., 2016). However, prior studies mainly concentrated on the resource loss process, while

**TABLE 4 |** Path coefficients and indirect effects for mediation models.

Point Estimate	Bootstrapping				
	Product of Coefficients		BC 95% CI		
	S.E.	Est./S.E.	Lower	Upper	
Effects from job complexity to approach crafting <i>via</i> work engagement					
Total effects	0.27	0.06	4.46	0.15	0.39
Indirect effects	0.03	0.02	1.99	0.01	0.07
Direct effects	0.24	0.06	4.05	0.13	0.36
Effects from job complexity to avoidance crafting <i>via</i> energy depletion					
Total effects	0.22	0.09	2.53	0.07	0.40
Indirect effects	0.22	0.04	5.00	0.15	0.32
Direct effects	−0.00	0.09	−0.16	−0.25	0.18

neglecting resource gain (Hobfoll et al., 2018). The present study considers both processes in parallel, thereby facilitating a deeper understanding of both processes. Moreover, our results reveal that job complexity may display a “too-much-of-a-good-thing” effect, resulting in strain outcomes when taken too far (see Pierce and Aguinis, 2013, p. 315).

## Practical Implications

The present findings also hold practical implications for managers. Jobs are becoming increasingly complex as they often involve more flexible and fluid employment arrangements (Okhuysen et al., 2013). Managers should be aware that the constantly changing demands of today's complex jobs cannot wait for top-down job design solutions (Grant and Parker, 2009; Demerouti, 2014). Rather, managers should recognize the importance of bottom-up work design approaches (i.e., job crafting) and initiate interventions to channel employee job crafting efforts to a desired direction. Our findings suggest that inducing work engagement among employees (e.g., vigor, dedication, and absorption) can effectively promote approach crafting. In contrast, employees' energy depletion may lead to avoidance crafting. Thus, managers should carefully increase additional resources, such as job autonomy, to allow employees to master their complex tasks. In the context of a stressful and demanding work, employees craft their jobs to acquire and protect resources. Thus, organizations and managers should provide employees with opportunities to craft their jobs to achieve a better balance between job demands and resources, which will lead to positive outcomes (Kristof-Brown et al., 2005).

Furthermore, instead of focusing on the beneficial and motivational effects of job complexity, organizations also need to adopt a more balanced view that also considers the potential strain effects of challenging jobs. This means that managers should monitor employees and ensure that task demand is reasonable, and control the flow of demands to ensure sufficient activation and prevent the depletion of the employees' physical and emotional resources. As such, both top-down job design and bottom-up job crafting have significant implications for

individual and organizational performance (Demerouti et al., 2019; Lichtenthaler and Fischbach, 2019).

## Limitations and Directions for Future Research

The present study had several limitations that should be addressed in future research. Firstly, while we used self-reporting to assess the variables, which may lead to common method bias (Podsakoff et al., 2003), we adopt a potential procedural remedy in the form of three surveys conducted over a period of 4 weeks (Podsakoff et al., 2003). Our statistical analyses suggest that common method bias may not be a serious problem. Additionally, self-reported assessments of job crafting are appropriate because job crafting is self-initiated behavior. Thus, employees are in a better position than their supervisors and peers to rate their job crafting activities. Nevertheless, future research on job crafting may benefit from observing “actual job crafting,” e.g., measuring the amount of time spent on each task.

Secondly, although the dual pathway of the job crafting model is promising, other moderators, such as different personalities, should be explored to better understand when and how complex jobs influence job crafting. Future research could also examine the moderating effects of leader behavior on the job complexity-job crafting relationship (Thun and Bakker, 2018). Further, the potential moderating role of personal and job resources and their effects on job strain and work engagement should be explored in more detail (Bakker and Demerouti, 2017). Specifically, based on Job Demands and Resources theory, job resources (such as skill variety) and personal resources (such as self-efficacy) have a particular effect on motivation when job demands are high. Thus, employees with high job and personal resources may be more motivated to adopt job crafting.

Thirdly, our study does not consider the social, political, and relational elements of job characteristics which may influence how employees interpret their job tasks (Grant and Parker, 2009). Thus, future studies should examine whether other job-design characteristics are able to predict approach and avoidance crafting. Moreover, we did not consider the relationship between hindrance job demands (e.g., role conflict or role ambiguity) and job crafting. Therefore, future studies should examine a broader range of job demands to identify those that cause individuals to reduce and increase their job crafting efforts.

Fourthly, in an effort to avoid similarities and possible collinearities with work engagement, this study did not use the four items scale (Ryan and Frederick, 1997) to measure employees' energy depletion. Instead, we adopted the item scale developed by Bakker and Oerlemans's (2019) to assess employees' positive energy available for purposive action. As this might cause validity issues, future research should consider other instruments to measure energy depletion, such as the 25-item state resource depletion scale by Ciarocco et al. (2007). Lastly, the extent to which our results can be generalized is unclear. Previous studies shown that low-skilled workers might implement job crafting differently from highly skilled professionals



(Nielsen and Abildgaard, 2012). Future studies should verify our findings by using a more diverse group of individuals. Given that the average age of our sample was about 42 years, future research should examine and test our model in younger employees.

## CONCLUSION

We investigated the relationship between job complexity and job crafting through resource gain and resource loss processes based on COR theory. Whereas job complexity may lead to approach crafting through work engagement, it can also deplete employees' energy, which may lead to avoidance crafting. The present study points out important research directions that can further expand our knowledge of the dual effects of job complexity on job crafting.

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## DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## ETHICS STATEMENT

The studies involving human participants were reviewed and approved by the Academic Committee, Macau University of Science and Technology. The patients/participants provided their written informed consent to participate in this study.

## AUTHOR CONTRIBUTIONS

JB and QT contributed to this work equally. All authors contributed to the article and approved the submitted version.

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# Will Job Crafters Stay or Leave? The Roles of Organizational Instrumentality and Inclusive Leadership

Xun Xin<sup>1</sup>, Wenjing Cai<sup>2,3,4\*</sup>, Xueyuan Gao<sup>5</sup> and Tingting Liu<sup>1</sup>

<sup>1</sup> Business School, Southwest University of Political Science and Law, Chongqing, China, <sup>2</sup> Intellectual Property Research Institute, University of Science and Technology of China, Hefei, China, <sup>3</sup> School of Public Affairs, University of Science and Technology of China, Hefei, China, <sup>4</sup> Department of Management and Organization, Vrije University Amsterdam, Amsterdam, Netherlands, <sup>5</sup> Department of Economics and Management, China University of Labor Relations, Beijing, China

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Beihang University, China  
Kui Yin,  
University of Science and Technology  
Beijing, China

### \*Correspondence:

Wenjing Cai  
w.cai@vu.nl

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Although studies have indicated the influences of job crafting on contemporary employees' working outcomes, the path from job crafting to turnover intention is still unexplored in depth. Drawing on goal facilitation theory, we delineate how job crafting relates to turnover intention through organizational instrumentality and is conditioned by inclusive leadership. We collected data from 218 employees from Chinese high-tech companies at two different time points by submitting survey questionnaires. The results indicated that employees' job crafting relates positively to their perception of organizational instrumentality and further results in decreased turnover intention. We also found that inclusive leadership not only positively moderates the path from job crafting to organizational instrumentality but also positively moderates the whole mediational relationship. Moreover, job crafting relates positively and directly to turnover intention—i.e., the more employees craft their jobs, the more likely they leave their organizations when we control the roles of organizational instrumentality and inclusive leadership. Finally, the theoretical and practical implications are also discussed.

**Keywords:** job crafting, organizational instrumentality, inclusive leadership, turnover intention, goal facilitation theory

## INTRODUCTION

With the aim of pursuing “an intelligent career” (Guan et al., 2019), contemporary employees change jobs frequently, making turnover an important issue in the management literature (Price, 2001; Waldman et al., 2015). Especially with the rapid development of the “Internet+” mode in China, many new business formats have emerged, which are bringing significant income and employment opportunities to many tech industries and their employees. Thus, employees, especially in high-tech industries, have a higher level of activity than ever before and tend to leave an organization rather than passively adapt to unsatisfactory work conditions, therefore resulting in a relatively high employee turnover rate. According to the “2017 Resignation and Salary Adjustment Research Report,” released by a leading human resources service provider in China (NASDAQ: jobs), the high-tech industry has a relatively high turnover rate of 21.6%. Employees' voluntary turnover inevitably brings about certain losses for enterprises and affects their competitiveness (Peterson and Luthans, 2006; Park and Shaw, 2013). As the “precursor” of



turnover behavior, turnover intention can effectively contribute to individual job change behavior (Cho and Lewis, 2012).

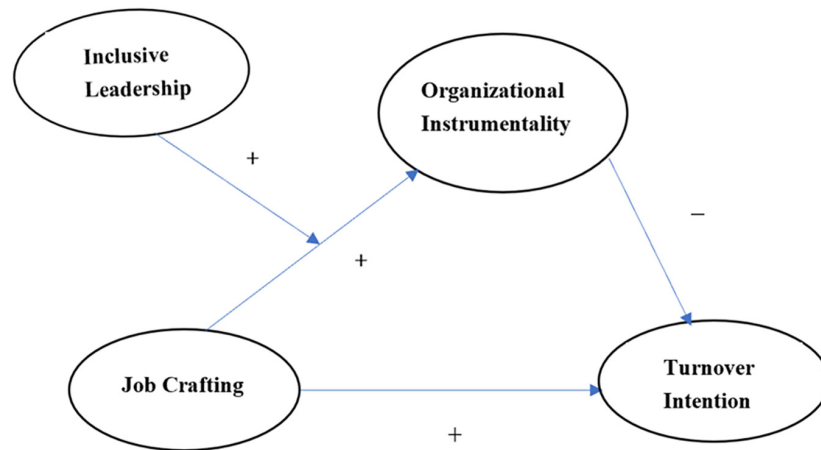
Despite substantial research on antecedents of turnover intention, whether employees who show a great deal of proactivity in the workplace are more willing to leave their jobs is still an intriguing question. Job crafting is recognized as a kind of proactive behavior that captures the idea that individuals proactively shape their jobs in terms of task, relational and cognitive aspects to align their jobs more with personal needs and work values (Wrzesniewski and Dutton, 2001; Lu et al., 2014). Over the past two decades, numerous studies have consistently found that job crafting could generate desirable job outcomes. However, we reviewed prior studies and found that the scant research to date examining how job crafting relates to turnover intention reports conflicting findings. Specifically, Esteves and Lopes (2016) found that job crafters have a low level of turnover intention, and no mediators are reported there. However, a meta-analysis showed that job crafting, as an overall construct, is not significantly related to turnover intention (Rudolph et al., 2017). We therefore speculate that there might be a certain offsetting effect in the overall relation. Therefore, identifying the paths that may have positive and negative impacts on the job crafting-turnover intention association is now both timely and necessary.

In view of the above points, we tend to determine the essential factors that can explain the negative link between job crafting and turnover intention and then to see whether the direct relation could be reversed after controlling the intermediate mechanism. We address that organizational instrumentality is the key mediating factor in facilitating this negative indirect relation. Organizational instrumentality refers to employees' perception that the organization will be instrumental in helping them reach personal goals (Fleishman et al., 1991; Cardador et al., 2011), which is in accordance with the core connotation of goal facilitation theory addressing the motivated effect of goals (Fitzsimons and Shah, 2008). We choose organizational instrumentality as the mediator because, on the one hand, individuals with clear goals tend to make a comprehensive evaluation of the current organization before they decide to stay or leave, and organizational instrumentality is such a kind of overall appraisal about the utility of the organization for their goals (Cardador et al., 2011). Although some positive results of job crafting—for example, person-job fit, job satisfaction—may also negatively predict turnover, these work-related variables are employees' evaluation of a certain facet of the organization rather than the overall appraisal. Thus, choosing organizational instrumentality as a mediator may help to understand the essential mechanism between job crafting and turnover intention. On the other hand, given the goal-oriented characteristics of job crafting (Wrzesniewski and Dutton, 2001), goal facilitation theory provides a plausible and overarching lens for explaining how individuals with clear and important goals (i.e., job crafters) approach and utilize a particular environment to shape their evaluation of the environment (i.e., organizational instrumentality) and then trigger the consequent behaviors toward the environment (i.e., turnover intention) (Fitzsimons and Shah, 2008).

Leaders are an important prerequisite for goal facilitation (Antonakis and House, 2014). Theoretically, given that goal facilitation theory highlights the supportive factors that facilitate an employee's goal fulfillments, as a proximal influential factor, supervisory behaviors are treated as providing support or limiting resources for the purpose of assisting in followers' goal attainment (Fleishman et al., 1991; Morgeson et al., 2010). Job crafting is a process full of obstacles, risks and unexpected problems (Wrzesniewski and Dutton, 2001); thus, whether job crafters can obtain support from leaders may either facilitate or impede the realization of crafting aims. As a relational leadership approach, inclusive leadership represents leaders who are open and accessible to subordinates (Carmeli et al., 2010) and cultivate a context where individuals are given more tolerance, trust and assistance when taking risks or making mistakes during crafting the job, which is more particular in the Chinese *guanxi* context. Therefore, these job crafters feel safer (Carmeli et al., 2010) in looking to their originations for opportunities and resources to fulfill their goals; accordingly, organizational instrumentality can be brought into full play, which further affects job crafters' evaluation and behavioral intention toward organizations. Therefore, we address that inclusive leadership may activate the benefits of job crafting for organizational instrumentality and then decrease turnover intention.

Finally, we are also concerned with the direct positive effect that job crafting exerts on turnover intention. Tims and Bakker (2010) show that job misfit is a main reason for employees to craft jobs. Job crafters, as being considered to have a trait of proactivity (e.g., Tims and Bakker, 2010; Tims et al., 2013), are also willing to make changes to undesirable work by actively pursuing all kinds of possibilities outside the organization that could promote career growth, especially when they feel limited or fail in job crafting due to various constraints in their working settings (e.g., Berg et al., 2010). Therefore, we suggest that job crafters will not passively adapt to undesirable work but tend to leave their current organizations when we control the increased instrumentality of organizations for themselves and when controlling the inclusive leadership under which employees can perceive that the leader welcomes and accepts their diverse job-crafting goals (Hantula, 2009; Carmeli et al., 2010).

Empirically, we delineated and tested a latent moderated mediation model (see the hypothesized model in **Figure 1**) with a sample of 218 knowledge employees of high-tech companies to clarify how job crafting relates to turnover intention. Our study adds to the promising idea on this relationship, which has received much less empirical attention in previous studies (for example Esteves and Lopes, 2016; Rudolph et al., 2017). Specifically, the present study aims to make three main contributions to the current literature. First, on the basis of goal facilitation theory, we bridge the theoretical gap in the underlying mechanism by explaining how job crafting may decrease turnover intention by facilitating organizational instrumentality. Second, we identify inclusive leadership operation as a facilitating condition that contributes to an enhanced understanding of the social environment conditions under which goal facilitation theory fully works and helps practitioners develop and use inclusive leadership interventions to decrease the turnover



**FIGURE 1 |** The hypothesized model.

intention of job crafters in contemporary organizations. Finally, by addressing how job crafting positively relates to turnover intention, our study provides new insights for understanding the double-edged effects that job crafting plays on turnover intention.

## THEORETICAL BACKGROUND AND HYPOTHESES DEVELOPMENT

### Conceptualization of Job Crafting

Employees are not passive recipients of traditional top-down job design but rather are positive in creating their work experiences by proactively modifying their jobs (Bell and Staw, 1989). Wrzesniewski and Dutton (2001) defined job crafting as “the physical and cognitive changes employees make in the task or relational boundaries of their work” (p.179). In the original framework of job crafting (Wrzesniewski and Dutton, 2001), individuals are motivated to craft job boundaries in three ways: task crafting, relational crafting and cognitive crafting. Both task crafting and relational crafting are behavioral changes conducted by individuals while performing their jobs, whereas cognitive crafting involves employees’ recognition of their jobs. Because cognitive changes are more strongly related to individuals’ inner desires, these changes are not easy to make and do not involve actual changes in a job (Demerouti, 2014). Thus, job crafting mainly focuses on how individuals act to change the physical and relational boundaries of the jobs in ways that better fit their motivation, skills, and interests (Ghitulescu, 2007), and previous studies have taken job crafting as a broad construct with two dimensions (physical crafting and relational crafting) and have shown good applicability in empirical studies (Laurence, 2010; Lu et al., 2014).

### Job Crafting, Organizational Instrumentality and Turnover Intention

From the insights of goal facilitation theory, we advanced the understanding of logical processes by which employees’ job

crafting behaviors decrease their turnover intention through organizational instrumentality.

### The Relation Between Job Crafting and Organizational Instrumentality

Goal facilitation theory places much emphasis on the accelerating effect of personal meaningful goals (Fitzsimons and Shah, 2008). Specifically, individuals motivated by the goals will automatically seek social environments that may help in advancing these goals, and in that regard, the particular environment may be perceived instrumental to personal goal achieving (Fitzsimons and Shah, 2008). Previous experimental studies also confirmed that the sense of effort with goals makes people have more perception of instrumentality of a particular environment during goal pursuit (Labroo and Kim, 2009). Career scholars have consistently captured this perception with the term organizational instrumentality (Cardador et al., 2011). For working adults, organizations are the most pivotal social environment where they could have access to all kinds of resources. Job crafting is a kind of goal-driven behavior that aims to achieve a better fit between one’s job and their preferences (Tims and Bakker, 2010; Bakker et al., 2012). In light of the theory, job crafters will actively overcome various obstacles to using the organizational environment. In fact, job crafting is also considered to be a process of searching, utilizing and increasing resources in the current organization (Tims and Bakker, 2010; Bakker et al., 2012). Specifically, for task crafting, individuals always keep a weather eye on and try to obtain the resources in the organization, such as attending possible project opportunities that can help improve their ability and experience, seeking available equipment, technology or support to improve work efficiency (Laurence, 2010); for relational crafting, individuals actively identify and reshape instrumental ties with important others within the organization. On the basis of the theory (Fitzsimons and Shah, 2008), individuals’ important and meaningful goals can be advanced in the crafting efforts of utilizing organizations, which in turn will improve employees’ evaluation of organizational instrumentality. As a supplement,

Labroo and Kim (2009) addressed the correspondence between the feeling of instrumentality and the actual efforts during goal pursuit; that is, the more effort they make, the more instrumentality they will feel. Taken together, we propose that:

Hypothesis 1: Job crafting is positively related to organizational instrumentality.

### The Relation Between Organizational Instrumentality and Turnover Intention

Additionally, goal facilitation theory suggests that individuals who have important and active goals have a greater tendency to evaluate instrumental others positively, and then they will be more ready to approach them (Fitzsimons and Shah, 2008). Because organizational instrumentality provides the necessary resources and supports employees' goal achievement (Cardador et al., 2011), employees will obtain a sense of satisfaction with work and engage more in their work (Xanthopoulou et al., 2009; Tims et al., 2013; Xie et al., 2017). Moreover, when perceiving the organization as instrumental, individuals may keep investing more efforts in getting more resources from the organization (Benson, 2006). For example, they are more likely to participate in activities in their organizations because of increased membership (Aryee and Chay, 2001). In that regard, employees may have less turnover intention. We propose that:

Hypothesis 2: Organizational instrumentality is negatively related to turnover intention.

### Organizational Instrumentality as a Mediator

Goal facilitation theory provides an overarching view for explaining how individuals with clear and active goals approach the instrumental environment to shape their evaluation of the person-organization relationship (Fitzsimons and Shah, 2008). A previous study confirmed that individuals with goals generate their positive or negative behaviors and attitudes toward the organization through the evaluation of organizational instrumentality (Xie et al., 2017). From that, instrumentality helps to form individuals' evaluation of person-organization relationships; as such, the more instrumentality they feel, the stronger they link to the organization, which acts as the most proximal predictor of turnover. Drawing on the theory, *Hypothesis 1* and *Hypothesis 2* explained why job crafters are more likely to perceive organizational instrumentality and how this perception further affects their turnover intention. Taken together, we propose that:

Hypothesis 3: Organizational instrumentality mediates the relationship between employee job crafting and turnover intention.

### Inclusive Leadership as a Moderator

Goal facilitation theory highlights that individuals will perceive the environment more instrumental when they have got closer to their goals in such an environment (Fitzsimons and Shah, 2008). Leaders are the actual distributor and controller of work resources (Fleishman et al., 1991; Morgeson et al., 2010) and are undoubtedly one of the most significant others for goal

realization. Along this line of theorizing, given that the goal behavior of employees at work is often implemented within a particular organization, we propose that the instrumentality of leaders that can facilitate goal attainment could be diffused. In particular, employees under the condition of instrumental leaders will evaluate the whole organization more positively during goal pursuit.

Some scholars have claimed that since employees may encounter difficulties and all kinds of constraints in crafting their job boundaries, job crafting is characterized as a process of the continuous consumption of personal energy (Demerouti et al., 2015). In that regard, supportive leadership matters in the way that it may either facilitate or impede the realization of crafting aims. Evidence from prior studies has shown that leaders who employ desirable supervision may shape the results of job crafting (Wang et al., 2016). Representing the relation between a leader and subordinate based on respect, response, and responsibility (Hantula, 2009), inclusive leadership is characterized as a leader's appreciation and recognition of his or her followers' contribution (Nembhard and Edmondson, 2006) and can be conceptualized as "leaders who exhibit openness, accessibility, and availability in their interactions with followers" (Carmeli et al., 2010).

Previous research has indicated that supervisory behaviors characterized as supportive and developmental can help make a favorable context for followers to achieve goals by job crafting (Leana et al., 2009). From this point, by paying attention to employees' personal needs, the inclusive leadership approach could be propitious to the aims of employee job crafting. Specifically, the openness of inclusive leadership recognizes individual differences with an open mind and recognizes the diversity of subordinates' personal goals (Carmeli et al., 2010). At the same time, the accessibility and availability of inclusive leaders will also let job crafters feel more confident and be more driven to overcome barriers. Taken together, in the inclusive context, job crafters could feel safer and bolder to obtain all the possible resources within the current organization, such as funding, equipment, project opportunities or social connections (Nishii and Mayer, 2009; Carmeli et al., 2010; Hirak et al., 2012). Consequently, employees are more likely to believe their crafting aims can be facilitated in the current organization because of the inclusiveness of their leaders, which accordingly is succeeded by the higher perception of organizational instrumentality (Fitzsimons and Shah, 2008). As discussed earlier, with the higher perception of organizational instrumentality, employees will be more willing to invest in the current organization to approach their goals, which in turn improves their organizational membership and reduces turnover intention. Therefore, under more inclusive leadership, the indirect relation between job crafting and turnover intention will be enhanced through instrumentality. In contrast, the mediating effect of organizational instrumentality is weaker. Thus, we propose that:

Hypothesis 4: Inclusive leadership plays a moderating role in the relationship between job crafting and organizational instrumentality such that with more inclusive leadership, the relationship is stronger.

Hypothesis 5: Inclusive leadership plays a moderating role in the mediated relationship between employee job crafting and turnover intention through organizational instrumentality in such a way that with more inclusive leadership, the relationship is stronger.

## How Job Crafting Relates to Turnover Intention Directly

Job crafting often occurs when employees perceive some dissatisfaction or misfit at work because it is thought to be a means of solving problems in the current job that formal organizational design cannot solve (Wrzesniewski and Dutton, 2001). For example, Tims and Bakker (2010) proposed that P-J misfit is a primary cause of job crafting. We address that the condition of dissatisfaction and misfit will not disappear promptly with the process of job crafting. However, job crafting processes may not always be smooth because of many possible constraints, such as misalignments between crafting behaviors and organizational expectations (e.g., Oldham and Hackman, 2010), conflicting role sets (Dierdorff and Jensen, 2018), misunderstandings of crafting behaviors from peers and leaders (Lyons, 2008), and other limited crafting resources (e.g., time and autonomy) (e.g., Berg et al., 2010). Similarly, a qualitative study by Berg et al. (2010) revealed that job crafting relates to increased job strain and intermittent feelings of regret. As such, job crafters may turn to other alternatives when they cannot effectively overcome the pressure and obstacles in job crafting.

Turnover intention is a kind of coping strategy when employees are under unsatisfactory work conditions (Avanzi et al., 2014). Job crafters are generally believed to have the trait of proactivity (e.g., Tims and Bakker, 2010; Bakker et al., 2012), which has been found to be positively associated with certain critical antecedents of actual turnover, such as career self-efficacy and job search self-efficacy (Fuller and Marler, 2009). Thus, job crafters can have tendencies to take initiative to change their current situations by actively pursuing all kinds of possible opportunities and alternatives outside the organization for the purpose of career advancement. Several scholars have found that turnover intention is triggered when employees perceive themselves as having more opportunities in the labor market (e.g., Benson et al., 2004; De Cuyper et al., 2011; Nelissen et al., 2017). We argue that job crafters are more likely to find alternative opportunities outside the organization with their continuously enhanced competencies in crafting tasks (Lyons, 2008; Petrou et al., 2012) and with vital talent market information obtained from instrumental ties in relational crafting (e.g., Bakker et al., 2012).

In summary, considering that job crafting stems from dissatisfaction with the current job and insurmountable obstacles that job crafters may encounter, we predict that job crafters will not passively adapt to undesirable work but tend to leave their current organizations when the conditions for changing work are met and satisfactory external opportunities appear. However, it should be noted that this is on the premise of ignoring the roles of instrumental and inclusive leadership of the organization. Thus, we propose that:

Hypothesis 6: The relation between job crafting and turnover intention is positive when controlling the roles of organizational instrumentality and inclusive leadership.

## MATERIALS AND METHODS

### Sample and Procedure

The survey was spread out randomly by using either paper copies or the online way and all subjects voluntarily participated the survey. Finally, we recruited 218 employees from ten high-tech companies in Beijing and Shenzhen as participants. These high-tech companies were mainly from the internet finance, communication, and high-tech energy industries. All questionnaires were filled out by the employees. The sample included a variety of occupations, including technology and development, market, product operation, business development, administrative personnel and other functional areas. Considering the nature of the research variables, all variables in the study were by employees themselves. To avoid homology bias, we collected time lagged data, with an interval of 30 days. In the first-round survey, we distributed 318 questionnaires and obtained 268 valid responses. After 30 days, the second round of data collection was conducted with the participants, and 218 valid copies were obtained. Variables measured at the first time point were job crafting and the inclusive leadership style of employees' direct supervisors. The variables measured at the second time point were organizational instrumentality and turnover intention. Among the participants, 142 (65%) subordinates were male, and 76 (35%) were female. Participants had an average age of 30.1 years ( $SD = 7.3$ ). On average, participants had 6.25 years ( $SD = 4.5$ ) of work experience in the company. Four (1.8%) respondents had an education level of high school or below, 12 participants (5.5%) had a high school education level, 45 (20.7%) held associate degrees, 136 (62.7%) held bachelor's degrees, and 20 (9.2%) held master's degrees or above.

### Measurement

#### Job Crafting

Employee job crafting was assessed by the expansion-oriented job-crafting scale with 18 items (Laurence, 2010) to evaluate the degree of frequency that employees crafted the job. This scale has two subdimensions, including physical and relational. Respondents valued each item of the scale on a 5-point Likert scale, from "not at all" to "very much so." Sample items for each dimension were "I have taken steps to increase the challenges I am facing in my job" and "I have taken steps to increase the extent to which I deal with other people in my job." The scale's internal consistency was 0.92.

#### Organizational Instrumentality

Organizational instrumentality in our study was measured by the four items with one dimension, developed by Cardador et al. (2011). Respondents rated each item on a 6-point Likert scale, from "strongly disagree" to "strongly agree." One sample item was "Working in my organization helps me to achieve my personal goals." The scale's internal consistency was 0.89.



**TABLE 1** | Descriptive statistics, reliability coefficients, and intercorrelations among variables.

	Mean	SD	1	2	3	4	5	6	7
1. Gender	1.35	0.48	–						
2. Education	3.72	0.78	0.15*						
3. Tenure	6.25	4.50	0.16*	–0.16*					
4. Job Crafting	2.33	0.69	–0.06	0.08	–0.05	(0.91)			
5. Organizational Instrumentality	3.73	0.75	0.13	0.14*	–0.20*	0.38**	(0.89)		
6. Inclusive Leadership	4.89	0.86	–0.02	0.15*	–0.28*	0.39**	0.52**	(0.91)	
7. Turnover Intention	2.41	0.94	–0.10	–0.12	0.15*	–0.14*	–0.49**	–0.35**	(0.87)

Reliability coefficients appear in brackets on the diagonal.

\* $p < 0.05$  and \*\* $p < 0.01$ .

### Inclusive Leadership

Employees rated their direct supervisors' inclusive leadership with inclusive leadership in three dimensions, nine items in total, developed by Carmeli et al. (2010). Subdimensions of the scale include openness, availability and accessibility, and each dimension contained three items. Respondents valued each item on a 6-point Likert scale, from "strongly disagree" to "strongly agree." Sample items for each dimension were "My supervisor is open to listening to some new ideas," "My supervisor is available for consultation on problems," and "My supervisor is accessible for discussing emerging problems." The scale's internal consistency was 0.91.

### Turnover Intention

Employees rated their turnover intention with three items, combined into one dimension and developed by Konovsky and Cropanzano (1991). Participants valued from "totally disagree" to "totally agree" on a 5-point Likert scale. A sample item was "I often think about leaving this organization." The total scale's internal consistency was 0.87.

### Control Variables

Certain demographic variables have previously been found to affect turnover intention (Chang et al., 2013; Gyensare, 2016). To make our model testing more accurate, we included three demographic variables as potential control variables in this study, all of which were assessed at Time 1. We controlled for gender (0 = male, 1 = female), education (1 = high school level or below, 2 = high school level, 3 = associate degree, 4 = bachelor's degree, 5 = master's degree or above) and organizational tenure.

## RESULTS

### Confirmatory Factor Analysis and Descriptive Results

To test the distinguishing validity of our model, we conducted confirmatory factor analysis (CFA) through Mplus 7.0 with the maximum likelihood estimation. Considering our sample size, we used item parcels with an internal-consistency approach to make the analysis tractable. Job crafting was modeled as a latent factor with five indicators (i.e., improving task function, seeking challenges and opportunities, seeking autonomy, expanding connections, and improving the qualities of connections).

Inclusive leadership was modeled with three indicators (i.e., openness, availability, and accessibility). For the organizational instrument, turnover intention, which was measured with no more than four items, we kept their original items. We compared our hypothesized model with alternative models. The CFA results indicated that the four-factor model distinguishing among job crafting, inclusive leadership, organizational instruments and turnover intention was significantly better than the other three models.

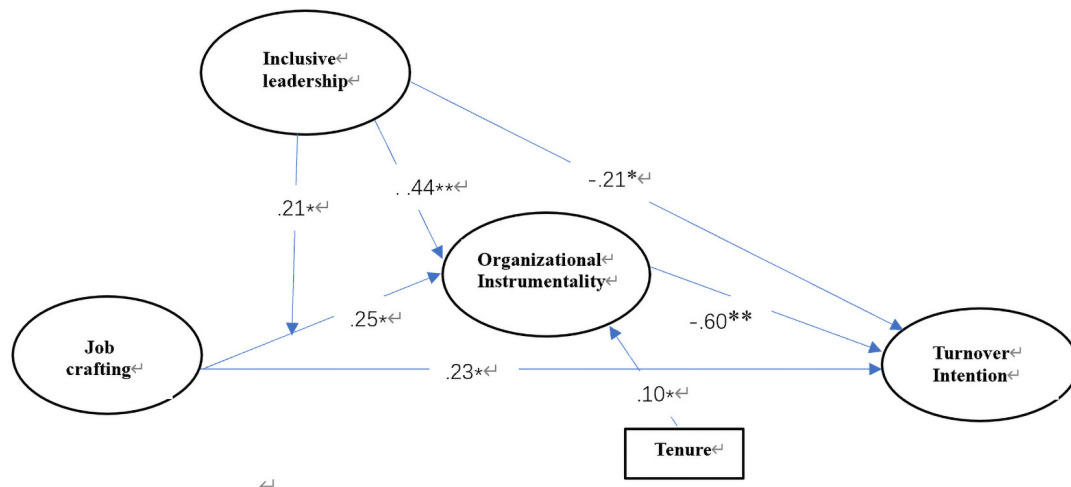
**Table 1** shows the results of the descriptive analysis as well as the correlations of the variables. The results showed that job crafting was positively related to organizational instrumentality ( $r = 0.38$ ,  $p < 0.01$ ) and inclusive leadership ( $r = 0.39$ ,  $p < 0.01$ ) and weakly negatively related to turnover intention ( $r = -0.14$ ,  $p < 0.05$ ).

### Testing Hypotheses

Following the suggestion of Cheung and Lau (2017), the moderated mediation model was tested using LMS equations. In contrast to the popularly used regression method with biased estimates of regression coefficients, the LMS equation approach corrects for measurement errors to produce more accurate parameter estimates and confidence intervals (CIs) when estimating latent interaction effects. We followed the approach of previous studies, and a 3-step procedure was conducted using Mplus 7.0. with maximum likelihood estimation.

First, we assessed the overall model fit of the moderated mediation model. Because the usual fit indices are not provided when estimating the latent interaction, we estimated a model from which the latent interaction term was excluded to obtain the conventional fit indices. The model without the latent interaction showed a good fit [ $\chi^2(111) = 288.38$ ; TLI = 0.92, CFI = 0.90; RMSEA = 0.08, SRMR = 0.07].

Second, the model in **Figure 2** with a latent interaction between job crafting and inclusive leadership, and the path from the interaction to organizational instrumentality was estimated. In consideration of the abnormal distribution of the mediating effect and interaction term, we used bootstrap estimates in which two thousand bootstrap samples were generated and constructed bias-corrected bootstrap CIs to test each estimated parameter in the current analysis. First, we tested the proposed model, which was the moderated mediation model with direct effects, and a



**FIGURE 2** | Unstandardized path estimates of the final model. \* $p < 0.05$  and \*\* $p < 0.01$ .

summary of the results, including all the unstandardized path estimates and CIs, is presented in **Figure 2** and **Table 2**.

As shown in **Table 2**, job crafting positively impacts organizational instrumentality ( $b = 0.25$ ,  $p < 0.05$ ). Organizational instrumentality has a significantly negative effect on turnover intention ( $b = -0.60$ ,  $p < 0.01$ ). Job crafting's indirect effect on turnover intention is the multiplication of the above two path coefficients. The results show that the CI (95%) of the indirect effect does not overlap zero, which indicates that job crafting has a statistically significant indirect effect on turnover through organizational instrumentality [estimate = 0.15,  $p < 0.05$ , bias-corrected CI  $(-0.30, -0.026)$ ]. Hypotheses 1, 2, and 3 are fully supported. Moreover, we note that the direct path coefficients between job crafting and turnover intention are significantly positive ( $b = 0.23$ ,  $p < 0.01$ ), and Hypothesis 6 is supported.

Regarding the moderation of inclusiveness between job crafting and organizational instrumentality (the simple moderation in the first stage), the interaction of job crafting and inclusive leadership significantly predicts organizational instrumentality [ $b = 0.21$ ,  $p < 0.05$ , bias-corrected CI  $(0.08, 0.03)$ ]. When inclusive leadership is high, the simple slope is very significant ( $b = 0.42$ ,  $p < 0.01$ ; see the solid line in **Figure 3**), suggesting that job crafting relates to organizational instrumentality more closely. When inclusive leadership is low, the simple slope is not significant ( $b = 0.07$ ,  $p > 0.05$ ; see the dashed line in **Figure 3**), suggesting that job crafting has no significant effect on organizational instrumentality. Hypothesis 4 is fully supported.

To further confirm whether inclusive leadership has a moderating effect on the direct effect, as a supplementary analysis, we tested an alternative model where a path from the interaction between job crafting and inclusive leadership to turnover intention was added. The path between the interaction term and turnover intention is non-significant [ $b = -0.02$ ,  $p > 0.10$ , 90% bias-corrected CI  $(-0.17, 0.14)$ ]. The results show

**TABLE 2** | Path coefficients for the moderated mediation models.

	Organizational instrumentality	Turnover intention
Job crafting	0.247 <sup>a</sup> [0.105, 0.390] <sup>b</sup>	0.231* [0.105, 0.390]
Inclusive leadership	0.442** [0.318, 0.566]	-0.214* [-0.387, -0.024]
Interaction: job crafting × inclusive leadership	0.207* [0.081, 0.027]	—
Organizational instrumentality	—	-0.600** [-0.791, -0.382]
Education	-0.009 [-0.020, 0.000]	0.001 [0.013, 0.015]
Tenure	0.103* [0.003, 0.227]	-0.027 [-0.161, 0.108]
$R^2$	0.447	0.417

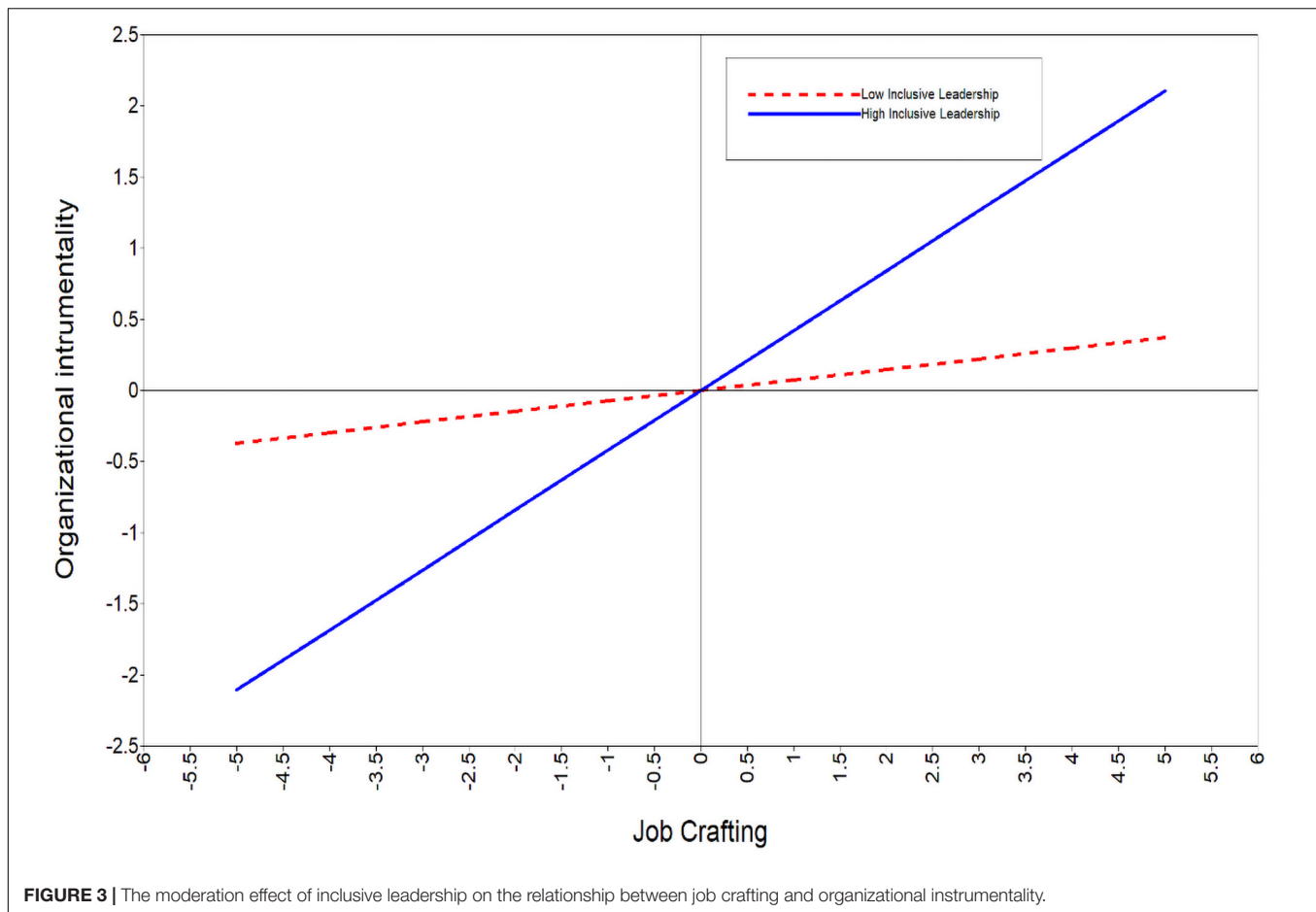
<sup>a</sup>Unstandardized path estimates.

<sup>b</sup>95 percent bias-corrected confidence intervals.

\* $p < 0.05$  and \*\* $p < 0.01$ .

that inclusive leadership does not play a moderating role in the direct effect between job crafting and turnover intention. Hypothesis 6 is fully supported. Since gender is not related to all the key variables in the correlation analysis, we removed it from the structural equation model. Regarding controlled demographic variables, we found that only tenure was positively related to organizational instrumentality ( $b = 0.10$ ,  $p < 0.05$ ).

Third, following the suggestion by Cheung and Lau (2017), we examined the conditional indirect effect by analyzing the magnitude and significance of the indirect effect that job crafting played on turnover intention via organizational instrumentality at various levels of inclusive leadership. The analysis results indicated that at a high level of inclusive leadership (+1 standard deviation), the indirect effect that job crafting played on turnover intention was significantly negative [estimate =  $-0.25$ ,  $p < 0.01$ , bias-corrected CI  $(-0.40, -0.10)$ ], and at a zero level of inclusive leadership (mean), job crafting had a significant indirect effect on turnover intention [estimate =  $-0.15$ ,  $p < 0.05$ , bias-corrected CI



( $-0.26, -0.04$ ], while at a low level of inclusive leadership ( $-1$  standard deviation), job crafting had no significant indirect effect on turnover intention (estimate =  $-0.04$ ,  $p > 0.10$ , bias-corrected CI [ $-0.18, 0.07$ ]). We plotted the conditional indirect effect among the variables (see **Figure 4**). As shown in **Figure 4**, higher inclusive leadership was negatively related to a stronger indirect effect that job crafting played on turnover intention through organizational instrumentality. Only when inclusive leadership was at levels more than 0.2 standard deviations below the mean was the indirect effect significant. Hypothesis 5 is fully supported.

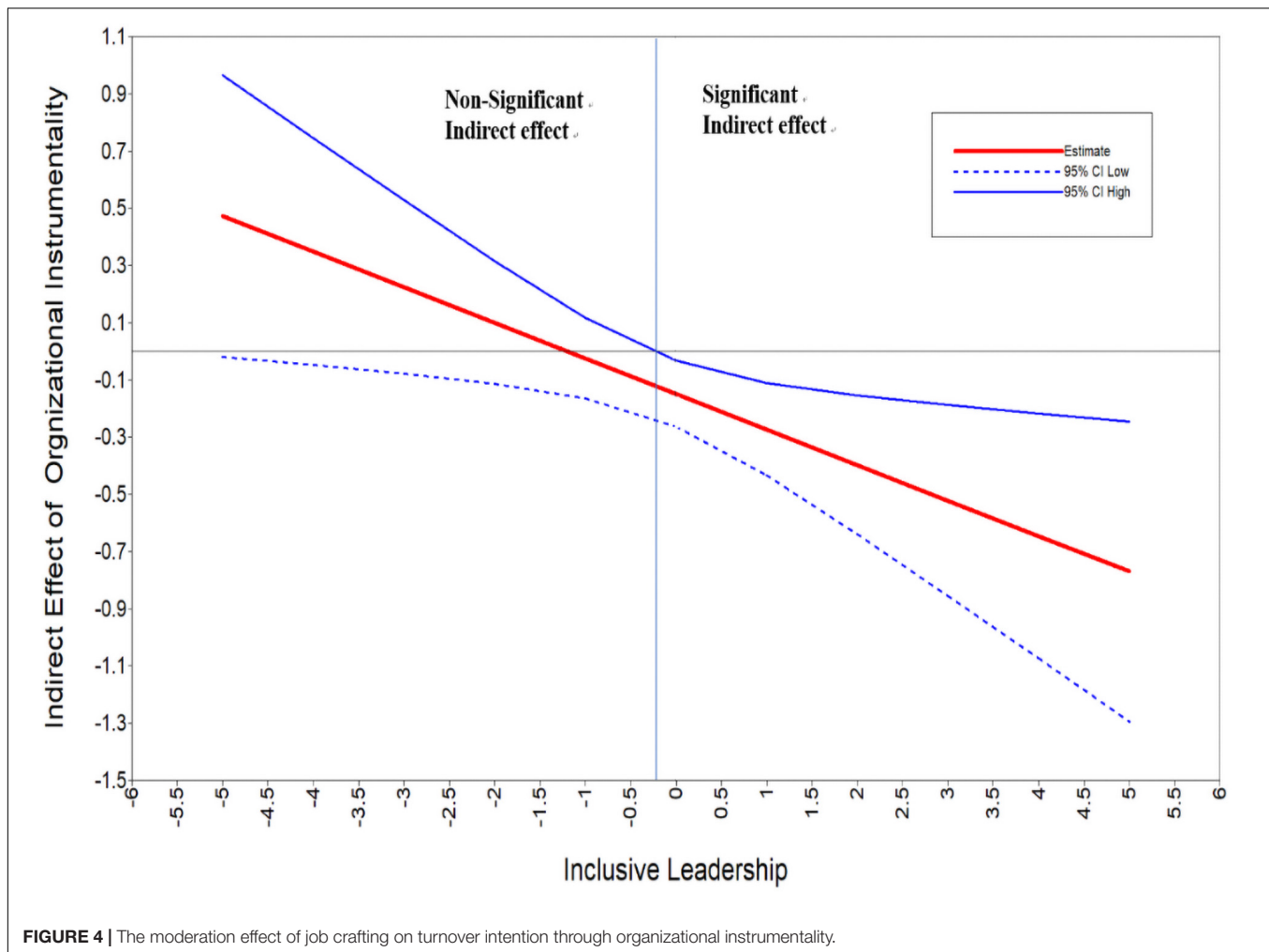
## DISCUSSION

The current study, which sought to clarify how job crafting complications were associated with turnover intention, examined this relation by identifying organizational instrumentality as a mediator and inclusive leadership as a moderator. On the one hand, the findings indicated that employees' job crafting was positively related to their perception of organizational instrumentality, which led to decreased turnover intention, thereby suggesting that organizational instrumentality works as an intervention in the negative relationship between job crafting and turnover intention. Moreover, we also found that inclusive leadership not only positively moderated the path

from job crafting to organizational instrumentality but also moderated the entire mediational relationship. The findings of the current research indicate that the benefits of job crafting are strengthened when inclusive leadership is high. On the other hand, we found that job crafting positively and directly impacted turnover intention; that is, after controlling for organizational instrumentality and inclusive leadership, we found that job crafting was positively related to turnover intention.

## Theoretical Implications

This research has several contributions to studies on job crafting and turnover intention. First, we examined the complex effect that individual job crafting played on turnover intention. Specifically, taking both the positive and negative effects that job crafting played on turnover intention into consideration, we enriched the current understanding of job crafting by enlightening the dysfunctional effects of job crafting in the workplace. From the perspective of the negative influence of job crafting on turnover intention, we applied goal facilitation theory to provide new evidence to clarify the mechanisms by which job crafting decreases turnover intention. The findings specifically highlight that higher job crafting of employees will lead to higher perceived organizational instrumentality, increasing the likelihood that employees are stimulated and thereby decreasing



their turnover intention. By employing the theoretical framework of goal facilitation theory, we found that when employees craft their jobs, they prefer to view their organizations as useful instruments to help them realize their goal of customizing jobs to their own specifications. This result is consistent with broad insight into the goal perspective of job crafting behaviors (Wrzesniewski and Dutton, 2001; Van den Heuvel et al., 2015). That is, job crafting is a goal-oriented behavior. Employees with job crafting have a clear goal of making their tasks match their own preferences. Furthermore, given that job crafting requires job resources, we found that organizational instrumentality can be instrumental because it can provide relevant resources toward successful job crafting. Accordingly, the fulfillment of job crafting boosts people's attachment to the organization and decreases their turnover intention.

From the perspective of the positive influence that job crafting played on turnover intention, we proposed and found that job crafting relates to turnover intention directly and positively after controlling for the mediator (i.e., organizational instrumentality) and moderator (i.e., inclusive leadership). That is, consistent with certain previous studies (e.g., Demerouti et al., 2015), the current study included estimation of the potential dark side of job

crafting. Our results highlighted the “opportunity and resources” for job crafters. Specifically, employees craft their jobs due to dissatisfaction with their work; therefore, they tend to look for additional responsibilities and challenges (Petrou et al., 2012). According to signaling theory, individuals may view such extra responsibilities and developments as powerful signals of their own abilities to prospective employers (Spence, 1974; Acemoglu and Pischke, 1999) and may therefore perceive themselves as having a stronger position in the external labor market, which could potentially positively influence their turnover intention (Nelissen et al., 2017). In this vein, our findings contribute to the proactive literature by highlighting that job crafters who are characterized as proactive employees can display proactive behaviors—i.e., adapting to changes in the work situation and changing aspects of their work environment themselves—to achieve desirable outcomes.

Moreover, we extend the limited but growing research that acknowledges a “dark side” of job crafting. That is, the findings in our study explicitly show the double-edged nature of job crafting, which is also indicated by the weak but negative correlation between job crafting and turnover intention ( $r = -0.14$ ,  $p < 0.05$ ; Table 1). In this vein, we address the



mixed findings of the nature of job crafting in the workplace by showing that job crafting may also negatively relate to turnover intention. Specifically, with respect to the positive effect, the more employees craft their jobs, the more opportunities and resources they may obtain to find more satisfactory jobs, which demonstrates career orientation from the outsider perspective. In contrast, regarding a negative influence, employees' job crafting may cause them to rely more on their organizations to make changes and subsequently lead them to report lower levels of turnover intention, which highlights career orientation from the insider perspective. This phenomenon indicates that organizational instrumentality can diminish the positive effect that job crafting plays on turnover intention. In this regard, future research that would enrich the literature on job crafting by examining dysfunction in job crafting among employees at the workplace is highly encouraged.

In revealing the two sides, the paper focused on how job crafting reduces turnover intention (indirect path). The main reason lies in that organization and manager would prefer to knowing what really makes job crafters stay. In this regard, we tend to figure out the most essential factors that can explain the negative link between job crafting and turnover intention, and then to detect whether the direct relation could be reversed after controlling the intermediate mechanism. Our explorations suggested managers that the indirect path should be highly emphasized, because the higher the level of job crafting, the more likely employees are to leave. This also reflected the unique value of choosing organizational instrumental and inclusive leadership as the mediator and the moderator, respectively.

Furthermore, our results regarding the moderating role of inclusive leadership extend the current understanding of goal facilitation theory. Specifically, although conceptual research has consistently highlighted leadership as a prerequisite for goal facilitation, limited empirical studies have been conducted to examine this proposition in the domain of proactivity literature. In our study, we identified a specific leadership style, inclusive leadership, to clarify that the impacts of employee job crafting with respect to increasing organizational instrumentality and then decreasing turnover intention can be strengthened by a high level of inclusive leadership. In this vein, we enrich the current theoretical understanding of leaders as an important prerequisite for goal facilitation (Antonakis and House, 2014). Extending previous research primarily suggesting that leadership styles may influence employee job crafting (Breevaart et al., 2016; Wang et al., 2017), our study further empirically identified the boundary condition of inclusive leadership in the job crafting literature. That is, when leaders enact behaviors that are inclusionary for their followers, these followers' job crafting behaviors are more likely to reduce turnover intention. Since inclusive leadership highlights the value of uniqueness (Randel et al., 2018), it not only provides employees with more job autonomy but also creates a more psychologically safe environment where employees are allowed to show job crafting behaviors to pursue their own goals. Specifically, employees working with a more inclusive leader can feel more belongings, respected, and less stressed (e.g., Ashikali et al., 2021); therefore, they are more likely to be proactive by crafting their jobs in the workplace. As a result, they tend to

perceive the instrumentality of their inclusive social environment in fulfilling their goal of crafting jobs toward decreasing their turnover intention. We also found inclusive leadership failed to simply moderate the relationship between job crafting and turnover intention, which indicates that the moderating role of inclusive leadership can only be played in the indirect path though promoting the job crafters' perception of organizational instrumentality.

## Practical Implications

This study has certain practical implications. First, our findings demonstrate the fact that employees engaging in job crafting should be highly valued and encouraged. Thus, employees should develop their own mindset to actively use their job demands and resources. To attract proactive employees, organizations could benefit greatly from providing job crafting opportunities to employees as well as giving them specific training that aims to develop their personalized job crafting goals. Supervisors should also show their tolerance and let the subordinates do their daily job in their own ways. When employees are self-determined, they could make choices freely on tasks that they truly enjoy, resulting in lower levels of turnover intention. In addition, job crafting, a bottom-up job redesign strategy, has been revealed to be meaningful to employees. Therefore, for managers to improve the work environment, adding job crafting as an initiative in a top-down way has been enlightened.

Furthermore, given the research findings on the double-edged nature of job crafting among employees, it would be important for job crafters to take advantage of organizational instrumentality. In this way, they can decrease their turnover intention by putting more effort into the workplace. Specifically, we encourage modern organizations to protect and maintain staff's perceived organizational instrumentality. For example, managers are encouraged to remove obstacles that hinder the accomplishment of followers' work-related goals, thereby increasing perceptions of organizational instrumentality.

To manage individuals with job crafting behaviors, organizations should protect and maintain these workers' perceptions regarding organizational instrumentality. In this manner, the negative effect that job crafting played on turnover intention can be strengthened, and the possibility of job crafting having a positive effect on turnover intention can be avoided. We encourage managers to reduce barriers that impede subordinates' work goal achievement and further increase the sense of organizational instrumentality; for the HR department, we suggest that managers create psychological conditions that are similar to high levels of job crafting behaviors to let them feel the work is personally fulfilling.

Given the results about inclusive leadership, leaders should develop and enact an inclusive leadership style to facilitate employees' job crafting and decrease employees' turnover intention. Specifically, organizations should provide training courses to help managers be more inclusive when supervising their subordinates, such as by creating a participative environment.

## Limitations and Future Research

Limitations cannot be ignored. First, although we used a time-lagged research design, the possibility of a causality problem cannot be entirely excluded because organizational instrumentality and turnover intention were both measured at the same time (Time 2). That is, although our proposition, consistent with previous studies showing that organizational instrumentality leads to employees' desirable outcomes (e.g., organizational attachment) (Haworth and Levy, 2001), claims that organizational instrumentality can decrease employees' turnover intention, it is possible that employees' turnover intention may affect their perception of organizational instrumentality because turnover intention may reduce employees' work engagement and their organizational citizenship behavior (Xiong and Wen, 2020). Therefore, to replicate our results, a longitudinal research design is suggested in future research to establish causality. Second, the sample for our research was extremely specific to the high-tech industry in China, limiting the validity and generalizability of our findings. Validity and generalizability could be increased by testing our model with a sample from a different industry (e.g., a service industry) in a different Asian country. Moreover, we collected data from only one source (employees). Although the results show that CMB is not a problem in our study, future research involving the collection of data from multiple sources is still encouraged. Finally, although we proposed a moderated mediation model to test the dysfunctional effect of job crafting on turnover intention, future research to explore why (*via* which intervening mechanism) and when (under which boundary conditions) job crafting is positively related to employees' turnover intention remains recommended.

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## DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Southwest University of Political Science and Law. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

## AUTHOR CONTRIBUTIONS

XX and WC: conceptualization and funding acquisition. XX and XG: methodology. XX: formal analysis, resources, and project administration. WC: investigation. XG and TL: data curation. XX, WC, and XG: writing—original draft preparation. WC, XG, and TL: writing—review and editing. All authors have read and agreed to the published version of the manuscript.

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# Acting Proactively to Manage Job Insecurity: How Worrying About the Future of One's Job May Obstruct Future-Focused Thinking and Behavior

Jessie Koen\* and Maarten J. van Bezouw

Department of Work and Organizational Psychology, University of Amsterdam, Amsterdam, Netherlands

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Vietnam

### \*Correspondence:

Jessie Koen  
j.koen@uva.nl

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An increasing number of people experience insecurity about the future of their job, making it more important than ever to manage this insecurity. While previous research suggests that proactive coping is a promising way to alleviate job insecurity, we suggest that, paradoxically, it may be particularly difficult to act proactively when feeling emotionally distressed about the future of one's job. Drawing on the principle of resource scarcity and the Conservation of Resources theory, we propose that affective job insecurity ignites a scarcity mindset that inhibits workers' future focus and cognitive functioning, thereby undermining proactive career behavior. Additionally, we examine whether income adequacy can compensate for these negative consequences of job insecurity. Results of a three-wave survey study among 108 self-employed professionals during the COVID-19 pandemic showed that initial affective job insecurity was negatively related to cognitive functioning but unrelated to future focus. Yet, the latter relationship was moderated by income adequacy: affective job insecurity was positively related to future focus when participants reported high income adequacy. In turn, future focus was positively related to proactive career behavior, which was subsequently related to lower cognitive job insecurity. Thus, while replicating the finding that workers can proactively manage their cognitive job insecurity, we also showed that initial affective job insecurity may obstruct people's cognitive functioning. We discuss how our results signal a Matthew effect, in which job insecure people with sufficient means are able to look ahead and proactively build resources to change their career, while job insecure people with insufficient means may fall behind.

**Keywords:** proactive coping, resource scarcity theory, conservation of resources theory, future focus, income, cognitive functioning, proactive career behavior, job insecurity

## INTRODUCTION

The current world of work is characterized by great uncertainty about the future: developments such as technological change, globalization, digitalization, and increased temporary employment have contributed to increased job insecurity and decreased well-being among workers (Shoss, 2017; Jiang and Lavaysse, 2018; Lee et al., 2018). Aggravating this already uncertain world of work, the



recent COVID-19 pandemic has led to a steep increase in jobs at risk, even putting a stop to some lines of work altogether. As such, being able to manage uncertainty about the continuity and stability of one's employment (i.e., job insecurity, Shoss, 2017) has become a major theme for workers across the globe. But how does one manage such job insecurity? Despite the progress that has been made in research on job insecurity and its negative consequences, only a handful of studies have specifically focused on factors directly reducing or preventing job insecurity itself. Notwithstanding, these studies have provided the valuable insight that job insecurity can indeed be managed: individual resources and behavior, as well as organizational resources and interventions, can influence the extent to which people experience job insecurity in a given work situation (e.g., Abildgaard et al., 2018; Jiang et al., 2020b; Koen and Parker, 2020).

Promising in this regard is the notion of proactive coping with job insecurity (Klehe et al., 2012; Stiglbauer and Batinic, 2015; Probst et al., 2019; Koen and Parker, 2020). Proactive coping refers to the behaviors undertaken in advance of a potentially stressful event (e.g., job insecurity or job loss) to prevent it or to modify its form before it occurs (cf. Aspinwall and Taylor, 1997). Recent research (Koen and Parker, 2020) has shown that workers are able to decrease the feelings of job insecurity that generally arise from insecure work situations by proactively building resources to master and change one's career (i.e., proactive career behavior). However, due to its anticipatory, self-initiated and self-directed nature, behaving proactively requires a great deal of resources, with the exertion of considerable energy, time, and attention necessary for planning and enacting (Bindl et al., 2012; Cangiano et al., 2021). This poses a problem, because job insecurity may in itself inhibit the resources that are needed to engage in proactive career behavior. Put differently, the uncertain world of work that calls for proactivity may paradoxically also obstruct people's ability to behave proactively.

We draw on the principle of resource scarcity (Shah et al., 2012) and the Conservation of Resources theory (Hobfoll, 1989, 2001) to examine how job insecurity may affect workers' ability to engage in proactive career behavior. Central to both the principle of resource scarcity and the Conservation of Resources theory is that people have a limited amount of resources (e.g., time, money, energy). Once these resources become threatened or depleted, people start to focus on short-term solutions to protect and/or regain current resources, rather than on long-term solutions to create new and/or alternative resources. Given that experiencing job insecurity threatens and depletes one's resources (De Cuyper et al., 2012; Richter et al., 2020), we argue that job insecure workers are unlikely to engage in long-term oriented proactive career behaviors that may help to create a more secure future.

Specifically, we argue that initial worries and emotional distress about potential job loss (i.e., affective job insecurity, Greenhalgh and Rosenblatt, 1984; Hellgren et al., 1999; Huang et al., 2012) ignites a scarcity mindset that (a) negatively affects workers' ability to focus on the future and (b) inhibits workers' cognitive functioning. Moreover, we argue that future focus and cognitive functioning are the very things that are necessary to engage in proactive career behavior and, hence,

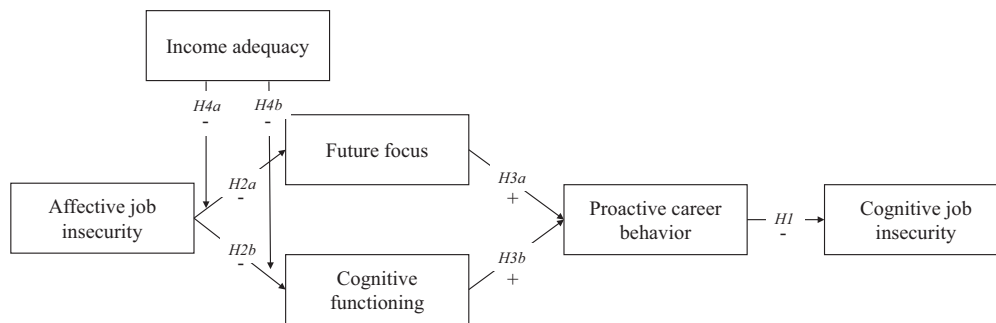
to decrease the expected likelihood of losing one's job (i.e., cognitive job insecurity, cf. Huang et al., 2012; Vander Elst et al., 2014). Importantly, for potential interventions, we also examine whether income adequacy (i.e., having sufficient income to make ends meet) can help to mitigate the negative effects of affective job insecurity on future focus and cognitive functioning, and, consequently, on proactive career behavior and subsequent cognitive job insecurity. **Figure 1** presents our research model.

## Proactive Coping With Job Insecurity

Insecurity about the future of one's job is one of the most common stressors in the work place (De Witte et al., 2015; Shoss, 2017; Lee et al., 2018). Research has shown that experiencing job insecurity has negative consequences for people's mental and physical health, for their job performance, and even for their career prospects (Sverke et al., 2002; Cheng and Chan, 2008; De Witte et al., 2016; Jiang and Lavaysse, 2018). It is therefore not surprising that job insecurity research has focused on uncovering ways in which workers can minimize the stress and strain that typically results from job insecurity. This "traditional" or reactive perspective on coping, however, views job insecurity as an existing threat and workers as passive respondents to their environment who can only influence the consequences of that threat. Yet, workers can also be considered as active agents who can influence their own job security by improving current employment circumstances or creating new career opportunities (Crant, 2000; Strauss et al., 2012; Koen and Parker, 2020). In this alternative proactive perspective on coping, workers are able to decrease, minimize, or even prevent the likelihood of job loss by approaching it proactively.

While "traditional" or reactive coping is aimed at minimizing negative consequences of an existing threat, proactive coping aims to reduce the threat itself (Aspinwall and Taylor, 1997; Stiglbauer and Batinic, 2015). More specifically, proactive coping refers to future-oriented coping that tries to detect and proactively manage stressors before they can fully develop (Aspinwall and Taylor, 1997). It involves building resources and acquiring skills that are not necessarily needed to address a current threat but, rather, to prepare for the longer term when potential threats may occur. By coping proactively—through emotions, thoughts, and behaviors—people can tackle the threat in its early stages rather than cope with the consequences of the threat in its full-blow state (Aspinwall, 2011). An example of proactive coping can be to develop technical skills that may be needed in a future job, or to build a network that can help to signal new job- and career opportunities.

The proactive perspective on job insecurity has received increased attention in the past few years. At its core, this research assumes that people are able to prevent or lessen the likelihood job loss, and thus the experience of job insecurity, itself. For example, Abildgaard et al. (2018) examined the effect of an intervention aimed to alleviate employees' experiences of job insecurity during organizational restructuring. They found a slower increase in job insecurity among employees who participated in the intervention compared to those who did not participate in the intervention, and argued that this was because the intervention fostered a proactive stance toward



**FIGURE 1 |** Hypothesized model.

restructuring (also see Sverke et al., 2008). Another example comes from a study by Probst et al. (2019). They examined whether job insecurity prompted impression management behaviors or vice versa, and found the latter: employees who proactively engaged in impression management techniques at work experienced lower subsequent levels of cognitive job insecurity. Likewise, in a sample of workers whose temporary contract was close to expiring, Koen and Parker (2020) found that temporary workers who engaged in proactive career behavior experienced lower levels of cognitive job insecurity than their less proactive counterparts. Taken together, these studies suggest that insecure work situations such as organizational restructuring and temporary contracts are not necessarily threatening; rather, workers' experience of job insecurity in such situations seem to depend on their proactive coping efforts.

Thus, research on proactive coping with job insecurity suggests that workers can proactively create opportunities to keep their job or to find a comparable job elsewhere, and, hence, manage their cognitive job insecurity (see also Stiglbauer and Batinic, 2015). As such, we expect that engaging in proactive career behavior should help workers to decrease the perceived risk of job loss –their cognitive job insecurity.

*H1: Proactive career behavior will be negatively related to subsequent cognitive job insecurity.*

At the same time, as we will argue next, we expect that the initial experience of being worried or emotionally distressed about potential job loss (i.e., affective job insecurity, Greenhalgh and Rosenblatt, 1984; Hellgren et al., 1999; Huang et al., 2012) may inhibit people's proactive career behavior, and therefore their ability to manage their subsequent job insecurity.

## How Initial Job Insecurity May Inhibit Proactive Career Behavior

We expect that there is a paradox to proactive coping with job insecurity. While proactive career behavior may help workers to alleviate the experience of (cognitive) job insecurity, it may be particularly difficult to act proactively when feeling emotionally distressed about the future of one's job, i.e., when experiencing affective job insecurity. That is, proactivity is an effortful and future-focused behavior that requires sufficient energy and

resources (Grant and Ashford, 2008; Cangiano et al., 2021). To be able to engage in such proactive behavior, people need resources to think and plan ahead, beyond what is needed for more urgent tasks and events (Halbesleben and Bowler, 2007; Parker et al., 2013; Schmitt et al., 2017). Yet, as we will argue next, these resources tend to be threatened when experiencing emotional distress and fear about the future of one's job: such job insecure workers are more likely to invest their time and energy in dealing with potential job loss directly than to engage in proactive behaviors that can help to master and change their career and job security in the long term. As such, we expect that affective job insecurity will inhibit people's proactive career behavior.

To explain how affective job insecurity may inhibit proactive career behavior, we combine research in behavioral economics (i.e., resource scarcity, Shah et al., 2012) with research in organizational psychology (i.e., the Conservation of Resources theory, Hobfoll, 1989, 2001). Although developed in separate disciplines, both lines of research center around the idea that a lack of resources can impair cognitive functioning, and that such a lack is conducive to a tendency to focus on short-term rather than long-term solutions. We apply this same principle here: we view initial feelings of affective job insecurity as a signal that resources are threatened or already depleted, which may impair people's ability to focus on the future as well as their cognitive functioning.

According to the principle of resource scarcity, a current lack of resources changes how people approach problems and make decisions (Shah et al., 2012). Scarcity of any kind of resources (money, time, food) directs people's attention to the current threat and away from other, more long-term, threats and problems. For example, when money is scarce, people tend to focus on buying weekly groceries rather than on paying next month's rent. Likewise, when time is scarce, people tend to focus on meeting tomorrow's deadline rather than on preparing for an assignment that is due next week (Shah et al., 2012). In addition to the attentional shift from a long-term focus to a short-term focus, the preoccupation with a pressing problem can consume people's cognitive resources, leaving less room for other tasks (Mani et al., 2013). Put differently, resources such as attention and energy are finite and once they are used for one domain they become unavailable for other domains (see also resource drain theory, Edwards and Rothbard, 2000). For example, an air traffic

controller who is focused on preventing a potential collision course loses cognitive capacity to coordinate other planes in the air (Mani et al., 2013). Here, we propose that affective job insecurity induces a situation of resource scarcity that will direct people's attention away from the long term and will deplete their cognitive functioning, thereby undermining their ability to engage in future-oriented activities such as proactive career behavior.

The assumption that affective job insecurity induces a situation of resource scarcity that inhibits proactive career behavior is in line with the Conservation of Resources theory (Hobfoll, 1989, 2001), a theory that is often used in the job insecurity literature to explain how emotional distress about the future of one's job can result in negative consequences such as exhaustion and burnout symptoms (e.g., De Cuyper et al., 2012). The Conservation of Resources theory explains human behavior based on the need to conserve resources. The central tenet of this theory is that the maintenance or increase of resources is associated with well-being, while a threat of resource loss or an actual decline in resources is related to stress and strain. Additionally, a threat to resource loss evokes a focus upon short-term resource conservation rather than on long-term resource creation (Hobfoll, 1989, 2001). When resources are threatened, people seek to protect their resources by putting less effort into behaviors they are not required to perform or that may not pay off in the short term (Halbesleben and Bowler, 2007). Similar to the principle of resource scarcity (Shah et al., 2012), such resource protection may thus trigger an increased focus on the core task (Halbesleben and Bowler, 2007).

Given that proactive behavior requires energy and cognitive resources beyond the resources that are required for core tasks (Bolino et al., 2010; Parker et al., 2013; Schmitt et al., 2017), it is unlikely that workers will engage in proactive career behavior when worrying about the future of their job. That is, when people experience job insecurity, one of their most essential resources (i.e., employment) is threatened (De Cuyper et al., 2012; Richter et al., 2020). This feeling of job insecurity, or more specifically the worrying about the future of one's job (i.e., affective job insecurity), requires energy: people who ruminate and dwell on the possible loss of their job are severely drained of energy (Richter et al., 2020). As such, Conservation of Resources theory would predict that workers who experience affective job insecurity resort to protecting further loss of resources: they will more effectively allocate their remaining resources to ensure optimal functioning and, hence, are less likely to invest their energy into resource-consuming behaviors such as proactivity (Halbesleben and Bowler, 2007; Bolino et al., 2010; Parker et al., 2013; Schmitt et al., 2017).

Thus, based on both the principle of resource scarcity (Shah et al., 2012) and the Conservation of Resource theory (Hobfoll, 1989, 2001), we expect that initial worries and emotional distress about the future of one's job (i.e., affective job insecurity) will inhibit the very resources that are necessary to engage in proactive career behavior: a focus on the future and cognitive functioning.

*H2: Affective job insecurity will be negatively related to (a) future focus and (b) cognitive functioning.*

In turn, we expect that an impaired future focus and impaired cognitive functioning will inhibit proactive career behavior. This expectation is based on the definition of proactivity: proactive behavior is self-directed and future-focused behavior in which an individual aims to bring about change (Bindl and Parker, 2010; Parker et al., 2010). This definition bears two important elements for our expectations. First, due to its anticipatory and self-directed nature, behaving proactively requires a great deal of energy, time and attention for planning and enacting (Grant and Ashford, 2008; Bindl et al., 2012). As such, we expect that higher levels of cognitive functioning will be associated with higher levels of proactive career behavior. Second, proactivity is future-focused: it involves anticipating, thinking ahead and taking actions for the future (Bindl and Parker, 2010; Parker et al., 2010). Theoretically, then, future-oriented thinking should positively contribute to proactive behavior (Aspinwall, 2011; Wu et al., 2013). Indeed, Parker and Collins (2010) showed that consideration of future consequences was positively related to proactive work behaviors, and Strauss et al. (2012) showed that a focus on the self in the longer-term future ("future work self") stimulated proactive skill development, which involves building career-relevant resources and skills for the future. As such, we expect that a stronger focus on the future –defined here as the allocation of attention to the future (Shipp et al., 2009)– will be associated with higher levels of proactive career behavior.

*H3: (a) Future focus and (b) cognitive functioning will be positively related to subsequent proactive career behavior.*

## The Moderating Role of Income Adequacy

An important assumption in the Conservation of Resources theory (Hobfoll, 1989, 2001) is that individuals are embedded within their social contexts, and that these contexts can further threaten their resources. Those who lack resources in their (social) context are more vulnerable to resource loss while those who possess or have access to resources in their (social) context are less vulnerable to resource loss. Following this reasoning, certain resources may compensate for the resource loss associated with job insecurity, thereby buffering its negative consequences. That is, the threat of losing resources associated with employment (e.g., income, social support, doing something meaningful; cf. Jahoda, 1982) may be less detrimental when one of those resources is compensated for in one's social context. For example, the possibility of losing one's job may be less threatening when people have sufficient financial means to pay their rent or when they have a strong social network that they can call on for support and help. The experience of job insecurity, then, may be less likely to result in stress and decreased well-being. Indeed, Lim (1996) showed that having access to a supportive system can buffer the negative effect of job insecurity on life satisfaction and Jiang and Probst (2017) showed that job insecurity was less likely to result in burnout symptoms in countries with low income inequality – a social context in which people have more access to resources such as employment protection, labor standards, unemployment benefits (Zafirovski, 2005).



Here, we propose that income adequacy (i.e., having sufficient income to make ends meet) represents a resource that can compensate for the negative consequences of affective job insecurity. This proposition has its roots in research on “flexicurity” (an European employment strategy that combines security for workers with flexibility for organizations, see Wilthagen and Tros, 2004; Muffels and Wilthagen, 2013). The flexicurity strategy suggests that income security can act as a compensating mechanism for job insecurity in a labor market characterized by uncertainty, as it ensures that financial needs are met during a period of unemployment through unemployment insurance and/or social security benefits. For example, Sjöberg (2010) showed that generosity of unemployment benefits within a country contributed positively to workers’ well-being, especially those in insecure work situations.

We argue that income adequacy will mitigate the negative effect of initial affective job insecurity on people’s future focus as well as on their cognitive functioning. Specifically, we expect that worrying about one’s job will be less detrimental to people’s cognitive functioning and their future focus when they have sufficient income to make ends meet. Although having a sufficient income may not directly take away people’s emotional distress about the future of their job, such income adequacy does provide one less worry: the worry about being able to make ends meet. In terms of Conservation of Resources theory, having a sufficient income means that there is one less resource that is threatened by job insecurity. This would suggest that job insecure people with sufficient income are less vulnerable to further resource loss and, thus, that worrying about the future of their job will be less likely to impair their future focus and cognitive functioning. Likewise, in terms of the principle of resource scarcity (Shah et al., 2012), having a sufficient income implies that people will experience less resource scarcity, which should mitigate the negative effects of job insecurity on their long-term focus and cognitive functioning. Earlier research provides some initial evidence for this assumption in that worries about having sufficient income can lead to decreased cognitive capacity (Meuris and Leanaa, 2018). We thus expect that:

*H4: The relationship between affective insecurity and (a) future focus and (b) cognitive functioning will be moderated by income adequacy, in such a way that the hypothesized negative relationships will become weaker when income adequacy is higher.*

## MATERIALS AND METHODS

### Design and Context

In this study, we assumed that initial affective job insecurity would be associated with people’s future focus and cognitive functioning, which would in turn affect their proactive career behavior and subsequent cognitive job insecurity (see also **Figure 1**). To model these presumed sequential relationships, we conducted a three-wave survey study in which we assessed all variables in the hypothesized model at Time 1, proactive career behavior at Time 2, and cognitive job insecurity at Time 3. This

allowed us to control for people’s prior levels of these outcome variables and, as such, to rule out that the results were driven or altered by people’s initial proactive career behavior and/or initial cognitive job insecurity.

In addition, we hypothesized that income adequacy would mitigate the negative effects of affective job insecurity on future focus and cognitive functioning. We therefore used a sample of participants that were likely to vary in their income adequacy, i.e., the extent to which they had sufficient income to make ends meet. Specifically, we surveyed self-employed professionals during the COVID-19 pandemic in 2020–2021 who received governmental financial support. In the country in which this study was conducted, all self-employed professionals who had gotten into financial difficulties due to the COVID-19 crisis were eligible to apply for governmental financial support. Eligibility criteria included having an income below the national social minimum (€1,503.31 per month) due to the COVID-19 crisis; being an established self-employed professional between 18 and 67 years old; owning a company registered at the Chamber of Commerce; and having worked at least 1225 h as a self-employed professional in 2019. The maximum amount of financial support that self-employed professionals could receive for a period of 6 months equaled the national social minimum referred to above. Whether this amount of financial support was sufficient to make ends meet depended on participants’ fixed monthly expenses (e.g., rent, electricity and water, office supplies and software licenses, insurances, etc.). For example, a self-employed participant with expensive office space was less likely to be able to make ends meet with the amount of financial support compared to a self-employed participant who worked from a home office. As such, participants in our sample were likely to vary in their level of income adequacy.

### Sample and Procedure

After IRB approval (2020-WOP-12462), we conducted a three-wave survey study among self-employed professionals during the COVID-19 pandemic in 2020–2021. Participants were contacted via the governmental agency that provided financial support and received three consecutive online questionnaires each set 2 months apart. To enhance our response rate, participants received a digital coupon of €5 for a purchase in a leading online store if they completed one questionnaire, €10 if they completed two questionnaires, and €25 if they completed all three questionnaires. Participants were included in the study when they (a) received governmental financial support for self-employed professionals, (b) were between 18 and 65 years old, and (c) worked at least 20 h per week on average before the onset of the COVID-19 pandemic.

A total of 171 participants completed the questionnaire at Time 1, of which 91 completed the questionnaire at Time 2 (53.2%) and 108 completed the questionnaire at Time 3 (63.2%). The overall sample of participants with complete data at all three time points consisted of 53.8% men and 46.2% women. Participants’ average age was 44.3 years ( $SD = 13.1$ ), and 23.1% had completed a vocational training degree whilst 47.3% had a bachelor or master degree. The remaining 29.6% indicated that they had a high school degree or a different type of

degree. Participants worked in a wide variety of industries, with the largest share of participants working in the cultural sector (21.3%), followed by 13.9% in the catering or hospitality industry, 6.5% in education, 4.6% in retail, 4.6% in financial services, and 4.6% in ICT; the remaining 44.5% worked in other industries such as transportation, cleaning, service work, or construction. On average, participants had 11.4 years of work experience as a self-employed professional ( $SD = 11.0$ ) and worked 37.5 h per week before the onset of the COVID-19 pandemic ( $SD = 11.9$ ), which had dropped to 17.2 h per week ( $SD = 15.8$ ) at the time of our study.

## Measures

Unless indicated otherwise, all variables were assessed with existing and validated 7-point Likert scales, ranging from 1 [*strongly disagree*] to 7 [*strongly agree*]. **Table 1** presents the internal consistency (Cronbach's alpha) of each variable.

### Affective Job Insecurity

Participants' affective job insecurity was assessed at Time 1 with Hellgren et al.'s (1999) 3-item scale. An example item is: "I am worried about having to leave my job before I would like to."

### Income Adequacy

At Time 1, we assessed income adequacy with one item, by asking participants to indicate on a 5-point Likert scale to what extent their current income (including the governmental financial support that they received) was sufficient to make ends meet every month (ranging from 1 [*completely insufficient*] to 5 [*more than sufficient*]).

### Future Focus

Future focus was assessed at Time 1 with Shipp et al.'s (2009) temporal focus scale. We used the 4 items that referred to future focus, e.g., "I think about what my future has in store." Participants were asked to indicate on a 7-point frequency scale to what extent they had thought about the future as indicated by the item (1 [*never*]; 3 [*sometimes*]; 5 [*frequently*]; 7 [*constantly*]).

### Cognitive Functioning

Participants' cognitive functioning was assessed at Time 1 with eight items from the CAT-PD project that referred to cognitive problems (cf. Simms et al., 2011). Participants were asked to indicate on a 7-point frequency scale to what extent they had experienced difficulties with cognitive functioning in the past month (1 [*never*]; 3 [*sometimes*]; 5 [*frequently*]; 7 [*constantly*]). Items were coded in reverse to reflect cognitive functioning rather than cognitive problems.

### Proactive Career Behavior

Proactive career behavior was assessed at Time 1 and Time 2 with a scale previously used by Strauss et al. (2012) and Koen and Parker (2020). This scale originally contains four subdimensions of proactive career behavior: career planning (4 items, e.g., "I am planning what I want to do in the next few years of my career"), career consultation (3 items, e.g., "I initiate talks with my supervisor about training or work assignments I need to develop skills that will help my future work chances"), skill development

(3 items, e.g., "I develop skills which may not be needed so much now, but in future positions") and networking (3 items, e.g., "I am building a network of contacts or friendships to provide me with help or advice that will further my work chances"). Because participants in the current study were self-employed, we omitted the 3 items referring to consulting one's supervisor or manager (i.e., career consultation) from the scale to form the variable proactive career behavior.

### Cognitive Job Insecurity

We assessed participants' cognitive job insecurity at Time 1 and Time 3 with Vander Elst et al.'s (2014) 4-item scale. Example items are "I think I might lose my job in the near future" and "I am sure I can keep my job" (reverse coded).

### Demographic and Control Variables

Meta-analytical evidence suggests that the demographic variables age, gender and level of education are correlated with perceived job insecurity (cf. Sverke et al., 2002; Cheng and Chan, 2008). We therefore included these variables as demographic control variables in the current study. Level of education was operationalized as participants' highest completed degree, ranging from 1 [*none*], 2 [*elementary school*], 3 [*high school*], 4 [*vocational training*], 5 [*bachelor degree at a university of applied sciences*], 6 [*bachelor degree at a university*] to 7 [*master degree*]. In addition, we assessed the number of months that participants expected to be able to make ends meet with their current financial buffer (e.g., savings, real estate) and included this financial buffer as a control variable.

## RESULTS

**Table 1** presents the means, standard deviations, and correlations between all variables in this study.

### Measurement Model

We conducted a Confirmatory Factor Analysis (CFA) in AMOS 25.0 to evaluate the construct validity of the scales. For the independent variables assessed at Time 1, we compared the hypothesized five-factor model (i.e., a model in which the items of affective job insecurity, cognitive job insecurity, proactive career behavior, future focus, and cognitive functioning loaded on their respective latent factor) to a four-factor model (i.e., a model in which the items of affective job insecurity and cognitive job insecurity loaded on one latent factor while proactive career behavior, future focus and cognitive functioning loaded on their respective latent factor) and to a common-factor model (i.e., a model in which all items loaded on one latent factor). The error terms of proactive career behavior were allowed to covary within their respective dimension. Results showed that the five-factor model yielded an acceptable fit,  $\chi^2/df = 1.86$ ,  $p = 0.00$ , NFI = 0.79; CFI = 0.89, RMSEA = 0.07, and fitted the data significantly better than the four-factor model,  $\Delta\chi^2(4) = 22.32$ ,  $p = 0.00$ , or the common-factor model,  $\Delta\chi^2(10) = 1225.79$ ,  $p = 0.00$ .

For the outcome variables, we compared the hypothesized two-factor model (i.e., a model in which the items of proactive

**TABLE 1 |** Means, Standard Deviations, Internal Consistencies, and Correlations.

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Age (T1)	44.11	12.93	(-)											
2. Gender <sup>1</sup> (T1)	1.39	0.50	-0.19**	(-)										
3. Education <sup>2</sup> (T1)	4.52	1.43	0.00	0.20**	(-)									
4. Income adequacy (T1)	2.17	0.98	-0.22**	0.18**	0.03	(-)								
5. Financial buffer <sup>3</sup> (T1)	5.57	7.57	0.02	0.10	0.20**	0.18**	(-)							
6. Affective job insecurity (T1)	4.57	1.61	-0.23**	0.21**	-0.12	-0.15	-0.27**	(0.85)						
7. Cognitive functioning (T1)	5.24	0.99	0.23**	-0.33**	-0.04	-0.02	0.08	-0.47**	(0.84)					
8. Future focus (T1)	4.89	1.24	-0.30**	-0.09	-0.00	0.05	-0.07	0.06	0.02	(0.91)				
9. Proactive career behavior (T1)	3.88	1.41	-0.32**	-0.05	0.12	-0.04	0.03	-0.09	0.01	0.45**	(0.93)			
10. Proactive career behavior (T2)	3.80	1.44	-0.32**	0.19	0.13	-0.03	-0.11	-0.02	-0.06	0.39**	0.80**	(0.93)		
11. Cognitive job insecurity (T1)	4.05	1.41	-0.26**	0.09	-0.14	-0.22**	-0.21**	0.70**	-0.38**	0.09	0.00	0.10	(0.83)	
12. Cognitive job insecurity (T3)	3.86	1.49	-0.19	0.04	-0.11	-0.16	-0.15	0.48**	-0.34**	0.09	-0.07	-0.16	0.60**	(0.87)

\*\* $p < 0.05$  (2-tailed).

<sup>1</sup>Categories include 1 = male; 2 = female.

<sup>2</sup>Categories include 1 = none; 2 = elementary school; 3 = high school; 4 = vocational training; 5 = bachelor degree at university of applied sciences; 6 = bachelor degree at university; 7 = master degree.

<sup>3</sup>Number of months that participants expected to be able to make ends meet with their current financial buffer (e.g., savings, real estate).

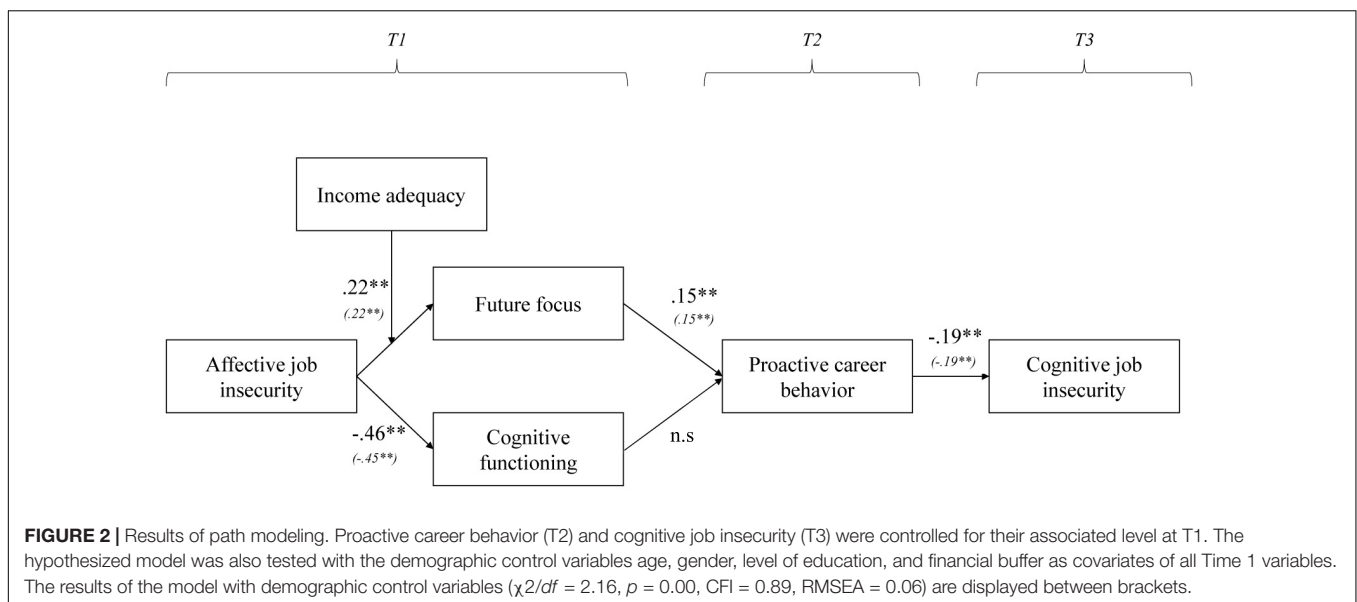
The sample at T1 included  $N = 171$  participants, the sample at T2 included  $N = 91$  participants, the sample at T3 included  $N = 108$  participants. Internal consistencies are presented at the diagonal.

career behavior at Time 2 and cognitive job insecurity at Time 3 loaded on their respective latent factor) to a common-factor model (i.e., a model in which all items loaded on one latent factor). Results showed that the two-factor model yielded a good fit,  $\chi^2/df = 1.70$ ,  $p = 0.00$ , NFI = 0.90; CFI = 0.96, RMSEA = 0.08, and fitted the data significantly better than the common-factor model,  $\Delta\chi^2(1) = 85.14$ ,  $p = 0.00$ .

## Hypotheses Testing

We examined the hypothesized model (see **Figure 1**) using path modeling in SPSS AMOS 25.0. For each outcome variable (i.e., proactive career behavior at Time 2 and cognitive job insecurity at Time 3), we controlled for participants' prior level of the respective variable at Time 1. To optimize statistical

power of the model, we used an estimate means procedure for participants who responded to Time 1 and Time 3 but had missing values at Time 2. The hypothesized model was tested with and without demographic control variables. In the model with control variables, we included age, gender, level of education and financial buffer as correlates of all Time 1 variables. The results of the hypothesized model without demographic control variables were the same as the results of the hypothesized model without demographic control variables (see also **Figure 2**). In line with Becker's (2005) recommendations, we therefore omitted the demographic control variables from our analyses to avoid any unnecessary decline in statistical power. Thus, the results reported below are the results from the hypothesized model without demographic control variables.



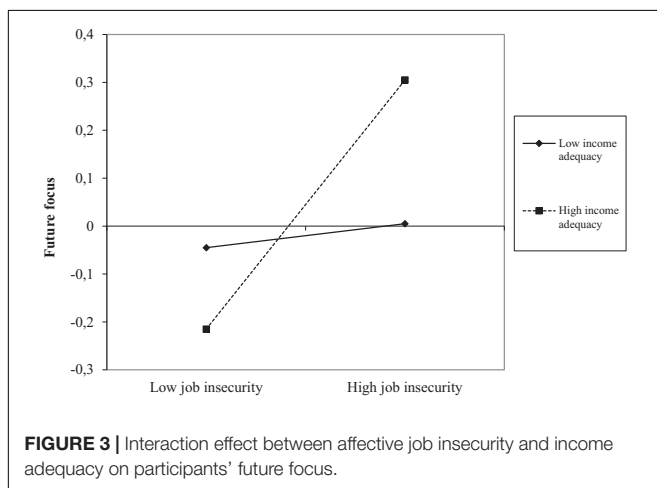
Results of the path analyses are presented in **Figure 2**. The hypothesized model showed a good fit to the data,  $\chi^2/df = 2.49$ ,  $p = 0.00$ , CFI = 0.92, RMSEA = 0.06.

Hypothesis 1 stated that proactive career behavior would negatively affect participants' later cognitive job insecurity. Results confirmed this Hypothesis and showed that proactive career behavior at T2 was negatively related to cognitive job insecurity at T3, after controlling for cognitive job insecurity at T1 ( $Est_{std} = -0.19$ ,  $p = 0.02$ ).

Hypothesis 2 stated that affective job insecurity would negatively affect participants' (a) future focus and (b) cognitive functioning. Results showed no support for Hypothesis 2a: affective job insecurity was unrelated to future focus. Results did support Hypothesis 2b: affective job insecurity was negatively related to cognitive functioning ( $Est_{std} = -0.46$ ,  $p < 0.01$ ).

Hypothesis 3 stated that (a) future focus and (b) cognitive functioning would be positively associated with participants' proactive career behavior. Results supported Hypothesis 3a: future focus was positively related to proactive career behavior at T2, after controlling for proactive career behavior at T1 ( $Est_{std} = 0.15$ ,  $p = 0.03$ ). Yet, cognitive functioning was unrelated to proactive career behavior at T2 (after controlling for proactive career behavior at T1), providing no support for Hypothesis 3b.

Hypothesis 4 stated that income adequacy would mitigate the presumed negative relationships between affective job insecurity and (a) future focus and (b) cognitive functioning. Results showed that income adequacy did indeed moderate the relationship between affective job insecurity and future focus ( $Est_{std} = 0.22$ ,  $p = 0.03$ ), but not in the expected direction. As shown in **Figure 3**, higher affective job insecurity was positively rather than negatively related to a stronger future focus, but only when participants reported that it was easy to make ends meet with their current income (i.e., high income adequacy). Additionally, results showed no interaction effect of affective job insecurity and income adequacy on cognitive functioning. Thus, these results do not support Hypothesis 4a, nor Hypothesis 4b.



## DISCUSSION

The rapidly changing labor market and recent COVID-19 pandemic have led to a steep increase in job insecurity across the world. Given the negative consequences of job insecurity for people's health, well-being, and careers (cf. Shoss, 2017; Lee et al., 2018), it is vital that workers are able to manage such feelings of job insecurity. The results of this three-wave survey study show that managing job insecurity in times of great uncertainty is easier said than done. Although we replicated the finding that workers can proactively minimize their own cognitive job insecurity (cf. Koen and Parker, 2020), and uncovered that future focus is an important determinant of such proactive career behavior, we also showed that initial affective job insecurity inhibited people's cognitive functioning: the more people worried about the future of their job, the more likely they were to experience difficulties with thinking straight and formulating ideas clearly. Yet, affective job insecurity did not restrict people's future focus; rather, it prompted future focus among those who did not have to worry about their income. Taken together, these findings suggest that worrying about potential job loss may impair people's cognitive functioning but may not necessarily undermine their ability to engage in future-oriented activities such as proactive career behavior. In fact, worrying about potential job loss may even stimulate proactive career behavior when people's income is secure.

## Theoretical Implications and Directions for Future Research

This study makes five important contributions to the literature. First, by adopting a proactive perspective to coping with job insecurity, we were able to show that workers can manage their feelings of job insecurity. Specifically, after controlling for initial cognitive job insecurity, greater engagement in proactive career behavior was associated with lower cognitive job insecurity a few months later. Thus, when workers are proactively creating career opportunities through, for example, investing in their network or developing skills that they may need in future jobs, they can decrease the expectation that job loss will happen in the near future. This finding adds to a growing body of literature on proactive coping with job insecurity: our results substantiate the idea that workers can –rather than just decreasing the negative consequences of job insecurity– also tackle the problem at its roots and prevent or lessen the experience of job insecurity itself (Abildgaard et al., 2018; Probst et al., 2019; Jiang et al., 2020b; Koen and Parker, 2020). We believe that this is a particularly relevant avenue for future research, given that job insecurity is becoming more of a rule than an exception in the current world of work. Hence, we encourage researchers to further explore ways in which workers may proactively prevent cognitive job insecurity, and, as such, its negative consequences.

Second, this study adds to the job insecurity literature that distinguishes between affective job insecurity (i.e., emotional distress about losing one's job) and cognitive job insecurity (i.e., the expected likelihood of losing one's job). Despite a



generally positive relation between both types of insecurity (e.g., Huang et al., 2012), this line of research has demonstrated that cognitive and affective job insecurity are conceptually and empirically distinct constructs (e.g., Jiang and Lavaysse, 2018). In fact, recent findings suggest that the positive relation between cognitive job insecurity on the one hand and affective job insecurity on the other hand can be conditional on other factors: two people who have similar expectations about the likelihood of job loss do not necessarily experience the same levels of emotional distress about that job loss (Jiang et al., 2020a). Yet, in this view, affective job insecurity is often considered a consequence of cognitive job insecurity (Huang et al., 2012); the expectation that it is likely to lose one's job triggers an emotional reaction. The current findings corroborate the nuance in the relation between cognitive and affective job insecurity by showing that proactive career behavior can indirectly reduce cognitive job insecurity a few months after experiencing affective job insecurity, yet, the findings also open up our thinking about the directionality of the relationship between both types of insecurity. That is, we find that affective job insecurity indirectly affects proactive career behavior aimed at reducing cognitive job insecurity, signaling the need to examine potential recursive effects between affective and cognitive job insecurity as well as potential mediators and moderators within these dynamics. Put differently, the emotional reaction to potential job loss may indirectly influence the likelihood of job loss through people's efforts to change the insecure situation. We believe that a longitudinal (diary) design may be able to capture these dynamic and recursive processes between cognitive job insecurity and affective job insecurity, and, perhaps, their impact on (career) behaviors, well-being, and actual job loss.

Third, our findings extend research on proactive coping with job insecurity by uncovering determinants of proactive career behavior. We found that future focus was an important determinant of proactive career behavior: people who were able to allocate their attention to the future were more likely to engage in proactive career behavior. This finding is in line with previous findings that show that focusing on a long-term future stimulates proactivity aimed at accumulating future resources (Parker and Collins, 2010; Strauss et al., 2012; Strauss and Parker, 2015). Yet, opposite to what is often assumed in proactivity research, such future focus is not a stable individual trait but rather depends on the situation: our results showed that feelings of job insecurity could actually prompt a future focus when people had an adequate income. This finding may be explained by the transactional theory of stress and coping (Lazarus and Folkman, 1984), which posits that a situation can be appraised as a loss, challenge, or threat, depending on a combination of person and situation factors. In the case of adequate income –or the security of sufficient financial support to cover one's fixed expenses for a few months–, feelings of job insecurity might be appraised as a challenge rather than as a threat, and, as such, may induce a future focus and subsequent proactive career behavior. Additionally, we found that cognitive functioning was not an antecedent of proactive career behavior. This finding is surprising, given the idea that

behaving proactively requires a great deal of cognitive resources such as energy, time and attention (Grant and Ashford, 2008; Bindl et al., 2012). Our measure of cognitive functioning may not have reflected such cognitive resources properly. Alternatively, impaired cognitive functioning may generate different behaviors: behaviors aimed to protect against further cognitive resource loss rather than behaviors aimed to protect against loss of employment. Indeed, workers threatened with loss of resources tend to be focused on acquiring new resources but will not invest in just any type of resources –only those resources that can help them to replenish their threatened resources (Halbesleben and Bowler, 2007; Breevaart and Tims, 2019). While proactive career behavior can, as evidenced by our results, help to protect against the threat of job loss by creating more job security, it may not help to overcome the threat of cognitive resource loss and may thus not have been affected by impaired cognitive functioning.

Fourth, we introduced the idea that there may be a paradox to proactive coping with job insecurity. Drawing on the principle of resource scarcity (Shah et al., 2012) and the Conservation of Resources theory (Hobfoll, 1989, 2001), we expected a “loss spiral” (Hobfoll, 1989, 2001) where initial emotional distress about the future of one's job would obstruct the very resources needed to engage in proactive career behavior, thereby inhibiting the possibility to proactively manage one's future job insecurity. Although we showed that initial affective job insecurity inhibited cognitive functioning, and that a future focus was necessary to engage in proactive career behavior which in turn decreased subsequent feelings of job insecurity, we did not find evidence for the full loss spiral implied in our study. A possible explanation for the lack of this loss spiral is that job insecurity was closely related to the COVID-19 pandemic in our study. For participants, job insecurity may therefore have felt as a rather temporary threat that could be overcome by short-term solutions. Uncovering the full extent to which loss and gain spirals apply to job insecurity requires additional research in different contexts, as well as the employment of different methods. We believe that a longitudinal diary design or cross-lagged panel design that examines the dynamic within-person process between job insecurity and proactivity can move the field forward.

Fifth, we found that job insecure people with a sufficient income were more likely –instead of less likely– to focus on a long-term future, and therefore better able to proactively manage their feelings of job insecurity. Put differently, for those who experienced income security, initial worries about the future of their job spurred future-focused thinking and future-focused career behavior. This finding signals a Matthew effect of accumulated advantage, an effect that is often referred to as “the rich get richer and the poor get poorer” (Merton, 1968). In essence, the Matthew effect holds that people with a better starting position are more likely to succeed because of that starting position. Applied to the context of our study, the moderating effect of income adequacy can be interpreted as a Matthew effect in which people with sufficient means (i.e., a good starting position) are the ones who are able to look ahead and proactively build resources to master and change their career (i.e.,



succeed), while people with insufficient means may fall behind. While we did not find direct evidence for the latter, we do believe that a further exploration of the Matthew effect in job insecurity research is an important avenue for the future.

## Practical Implications

In addition to its theoretical contributions, our study has some clear implications for practice and policy. To date, most job insecurity interventions have been aimed at helping people cope with the stress and strain that arises from job insecurity –i.e., secondary and tertiary interventions (Hargrove et al., 2011). Our findings, however, suggest that engaging in proactive career behavior can decrease job insecurity itself, rather than its consequences. Therefore, job insecurity interventions should also make use of so-called primary interventions, in which workers can engage in proactive career behavior to prevent the onset or further development of job insecurity. Promising in this regard is research that shows that proactive behavior can be stimulated through interventions. For example, Glaub et al. (2014) showed that entrepreneurs' proactive behavior could be changed through a personal initiative training, and Strauss and Parker (2015) showed that employees' proactive skill development could be facilitated through training and development. These studies not only provide a positive outlook on the probability of success of enhancing proactive career behavior, but also provide excellent starting points for research and practice on how to set up a successful intervention.

In interventions aimed at increasing proactive career behaviors, a future focus should be central. For example, Strauss and Parker (2015) showed that their vision-focused proactivity intervention only led to higher proactive behavior among people with a strong future orientation. They speculated that the intervention made both the long-term benefits and the short-term costs of proactive behavior more salient, which may not stimulate people low in future orientation to become more proactive. Fortunately, we showed that the tendency to focus on the future is not a stable individual trait (e.g., Parker and Collins, 2010) but can also depend on people's situation. In this specific case, having a sufficient income influenced participants' focus on the future, but there are many other factors that may affect future focus, ranging from age to country of residence. For example, as cultures can differ in their long-term orientation, it may be that workers in future-oriented cultures have a greater tendency to engage in proactive career behavior than those in less future-oriented cultures (Hofstede, 2001; Probst et al., 2019). All in all, people's future focus should be taken into account when designing and introducing interventions.

Importantly, our findings suggest that increasing job insecurity is not something that can only be achieved by individual actions. Flexicurity researchers have argued that also labor market policies that increase social security may reduce emotional distress about job loss (Berglund, 2015) and the moderating effect of income adequacy in the current study mimics this. At the same time, it remains to be seen whether providing income security can structurally compensate for job insecurity and its negative consequences, as there is

little evidence for this assumption (cf. Berglund et al., 2014; Svetek, 2020). From a psychological perspective, this is not surprising: employment has more latent benefits than just income (e.g., social support, meaningfulness, identity, Jahoda, 1982) and providing income security may not be sufficient to fully compensate for the lack of job security. Nonetheless, if providing income adequacy can, indeed, help people to approach their career proactively in a sustainable way, it may be a worthwhile next step in creating alternative forms of security in an insecure labor market.

## Limitations

Although our study has several methodological strengths (e.g., a three-wave research design), the contributions of our study should be considered in light of a few limitations. First, the sample size is relatively small and we had to employ an estimate means procedure for the variables measured at Time 2 to ensure sufficient statistical power for testing the hypothesized model. While we believe our contributions to be meaningful, we also believe that the results should be interpreted with caution because of the relatively small sample size. To further strengthen the validity and generalizability of our results, it is of utmost importance that future research replicates our findings in a larger sample. Only then, solid conclusion can be drawn regarding the dynamic process between job insecurity and proactivity and the moderating effect of income adequacy. Second, our design is correlational and involved self-report measures, two factors that can possibly contribute to common method bias and limit the ability to draw causal conclusion. We attempted to minimize these threats by using a three-wave design in which we temporarily separated our predictor and process variables from the outcomes (see Podsakoff et al., 2003). Third, we should note that our results only apply to proactive career behavior and may thus not be generalized to all proactive coping behaviors. Moreover, the current study did not include measurement of alternative coping behaviors aimed at short-term solutions for workers, such as finding other (temporary) employment. Fourth, our sample consisted of self-employed professionals, meaning that generalizations to other workers have to be made with caution. Specifically, it is likely that self-employed professionals might differ in their proactivity and attitudes toward job insecurity compared to people in salaried employment.

## Conclusion

How do people think about and act upon the future of their work when this future is uncertain? This study provides initial evidence that even when the future of work is uncertain, focusing on that future remains important: it spurs proactive career behavior, which can lessen the expected likelihood of job loss. However, worrying about job loss can obstruct people's cognitive functioning, and workers only seem to be able to translate their worries into a future focus and proactive actions when they are assured of an adequate income. Although more research is needed to substantiate these findings, our study showed that the multifaceted benefits that work offer also mean that various types

of resources are needed to manage potential job loss. As such, policies that offer such resources may be instrumental to ensure optimal conditions for individual coping to succeed.

## DATA AVAILABILITY STATEMENT

The data set, syntax, and output supporting the conclusions of this article are available in an online repository, accessible via [https://osf.io/2e3cx/?view\\_only=a945fb5182394ed68950786008fc2cdc](https://osf.io/2e3cx/?view_only=a945fb5182394ed68950786008fc2cdc).

## ETHICS STATEMENT

The studies involving human participants were reviewed and approved by IRB University of Amsterdam; 2020-WOP-12462. The patients/participants provided their written informed consent to participate in this study.

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## AUTHOR CONTRIBUTIONS

MB organized the data collection. JK analyzed and interpreted the data. Both authors contributed to research conception and design, writing the manuscript, and approved the submitted version.

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# The Double-Edged Sword Effect of Relational Crafting on Job Well-Being

Shanshan Li<sup>1</sup>, Bin Meng<sup>2\*</sup> and Qingjin Wang<sup>3</sup>

<sup>1</sup> Department of Industrial Economics, University of Chinese Academy of Social Sciences, Beijing, China, <sup>2</sup> Department of Economics and Management, Hengshui University, Hengshui, China, <sup>3</sup> Business School, Qingdao University, Qingdao, China

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Netherlands

### \*Correspondence:

Bin Meng  
mengbin1982@yeah.net

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Is relational crafting always beneficial? Despite the increasing research on the positive outcomes of relational crafting, some evidence still indicates its dysfunctional consequences. The current study proposed a double-edged sword effect of relational crafting on job well-being, including work dynamics and emotional exhaustion, with an integrative perspective from the resource loss and resource acquisition perspectives based on the job demands-resources model and the conservation of resources theory. By conducting a two-stage questionnaire survey on 323 employees, the results demonstrate that: (1) On the one hand, relational crafting induces emotional exhaustion through increased work load; (2) On the other hand, relational crafting also displays positive effect on increasing work dynamics and decreasing emotional exhaustion by fostering supervisor-subordinate *guanxi*. By analyzing the double-edged sword effect of subordinates' relational crafting on job well-being from the two processes of resource loss and resource acquisition effects, a more complete influencing mechanism between relational crafting and job well-being is constructed, which improves the understanding of relational crafting, enriches the literature on proactive behavior and provides a more integrated theoretical basis for researchers and managers.

**Keywords:** relational crafting, job well-being, work load, supervisor-subordinate *guanxi*, double-edged sword effect, job demands-resources model, conservation of resources theory

## INTRODUCTION

With the development of society, economy, science, and technology, the nature of work has become vaguer and more complex (Womack, 2018), requiring employees to adapt to dynamic jobs effectively (Slemp and Vella-Brodrick, 2013). Accordingly, the normative job description no longer applies to current workplace shifts, and a new form of flexible job redesign, referred to as job crafting, has been suggested (Wrzesniewski and Dutton, 2001). As a proactive employee behavior, job crafting generally encompasses idiosyncratic changes to their tasks (task crafting), relationships (relational crafting), and cognition (cognitive crafting) (Wrzesniewski and Dutton, 2001). With the progress of studies, job crafting scholars have indicated different crafting orientations, such as approach avoidance or promotion prevention (e.g., Bruning and Campion, 2018; Zhang and Parker, 2019). Compared with promotion prevention, we agree with the view of Zhang and Parker (2019) that the approach-avoidance perspective is more direct. Evidence from research suggests that "job crafting is characterized more by effortful and directed actions to seek positive aspects of



work rather than by withdraw-oriented behaviors concerning the negative ones” (Costantini et al., 2021, p. 336). Thus, we distinguish approach crafting from avoidance crafting and focus on the former, which is intended to serve employees by creating positive psychological state and favorable job characteristics for them, which distinguishes the process from other forms of job crafting (Wrzesniewski and Dutton, 2001; Tims et al., 2012; Bruning and Campion, 2018). Furthermore, relational crafting has higher practical significance for employees in Chinese organizations, as China attaches great importance to workplace *guanxi* under the influence of the Confucian culture (Chen et al., 2009; Tang et al., 2020). *Guanxi* is “an informal, particularistic personal connection between two individuals” (Chen and Chen, 2004, p. 306). Workplace *guanxi* is necessary and is associated with positive outcomes, such as preferential decisions (Wei et al., 2010) and higher job satisfaction (Cheung et al., 2009). Meanwhile, positive workplace *guanxi* can be developed and established by affection and reciprocal exchange (Zhai et al., 2013). Relational crafting depicts employees’ behaviors to change relational boundaries, involving activities of seeking, building, and/or maintaining better relationships with preferred individuals in the workplace (Bruning and Campion, 2018). This behavior has been found to help employees have more supportive and rewarding interactions, resulting in various positive outcomes (Jutengren et al., 2020). Relational crafting can be categorized as approach oriented and avoidance oriented. In our study, we focus on approach-oriented relational crafting. Therefore, when discussing relational crafting in the paper, it relates only to approach-oriented relational crafting. We also believe that further studies on relational crafting will be a meaningful and important topic in the contemporary Chinese context.

Although the concept of relational crafting and related research has received wide attention in the past 20 years, most studies examine relational crafting as an element of job crafting, analyzing its outcomes (Lee and Lee, 2018). Recently, various researchers have increasingly turned their attention to the effect of specific crafting forms, such as task crafting and relational crafting, based on the given situation instead of focusing solely on job crafting, suggesting that the results may be more nuanced and accurate if a form of crafting is investigated separately (Dierdorff and Jensen, 2017; Teng et al., 2020; Geldenhuys et al., 2021). Existing literature has predominantly centered on the positive effects of relational crafting, for which several main reasons have been proposed. For example, relational crafting is thought to help employees cultivate job meaningfulness (Michaelson et al., 2014), enhance demand-supply fit (Lu et al., 2014), and improve work adaptability (Rofcanin et al., 2019) while facilitating job performance (Geldenhuys et al., 2021). However, to date, direct examinations of the possible negative effects of relational crafting, such as increased work load, have remained absent. Nevertheless, some scholars have begun to indicate that pro-self-focused proactive behaviors are also associated with increased levels of fatigue and reduced job well-being (Berg et al., 2010; Weseler and Niessen, 2016). For example, Strauss et al. (2017) argued that personal initiative is associated with job strain due to resource depletion. Zacher et al. (2019) further examined the

negative impact of personal initiative on occupational well-being (emotional engagement and emotional exhaustion), suggesting that it can cause a negative shift in employee’s mood. Moreover, some studies have also observed that crafting can cause a negative effect due to the intermittent feelings of regret and increased stress and conflict (Wrzesniewski and Dutton, 2001; Berg et al., 2010; Dierdorff and Jensen, 2017). Therefore, as a specific proactive behavior and a specific form of job crafting, how are these conflicting viewpoints and empirical evidence reflected in subordinates’ relational crafting and how does relational crafting affect job well-being?

Drawing on the job demands-resources model (JD-R model) and the conservation of resources theory (COR theory), the present study aims to offer a more comprehensive understanding of relational crafting. In particular, we postulate that relational crafting has a double-edged sword effect on job well-being based on the supervisor-subordinate context. Using this argument, we further explain the underlying mechanisms of the effects of relational crafting on job well-being from two perspectives of resource loss and resource acquisition, in accordance with the JD-R model and the COR theory. The resource loss path indicates that relational crafting is negatively related to job well-being by increasing work load. As an extra-role behavior, relational crafting consumes massive psychological and cognitive resources from crafters (i.e., subordinates), thereby creating excessive stress and lowering job well-being. When subordinates craft their jobs by extending social relationships at work, they might be ostracized by others because of the substantial change they cause to the existing *guanxi* circle, which in turn might bring pressure and negatively impact job well-being. Therefore, work load can lead to a health impairment process and, in turn, negatively affect subordinates’ job well-being. The resource acquisition path suggests that relational crafting is positively related to job well-being by improving supervisor-subordinate *guanxi* (SSG). Relational crafting is a process in which individuals adjust their social relationships to enhance their social bonds (Wrzesniewski and Dutton, 2001; Nielsen and Abildgaard, 2012). By seeking support, feedback, and guidance from supervisors, and by actively concerning, caring for, and assisting supervisors, subordinates can increase work efficiency, improve communication quality, boost relatedness with supervisors (Rudolph et al., 2017), and obtain positive responses from them, thereby establishing a better SSG. A higher quality of SSG will inevitably enhance job well-being. Therefore, SSG can lead to a motivational process and, in turn, positively affect subordinates’ job well-being.

To advance the relational crafting research, we investigated both its negative and positive indirect effects on job well-being, including work dynamics and emotional exhaustion. This study makes four main contributions to the literature: First, prior studies on the impact of relational crafting always consider it a part of job crafting (Slemp and Vella-Brodrick, 2014; Slemp et al., 2015; Lee and Lee, 2018). We aim to make a more nuanced examination of relational crafting consequences. Therefore, we focus on the relationship between relational crafting and job well-being to extend the related research based on the Chinese context, where *guanxi* and friendship are highly emphasized. Thus, our



study improves the understanding of relational crafting and enriches the literature on job crafting. Second, although studies on relational crafting's impact on attitude-related outcomes have attracted much attention (Michaelson et al., 2014; Jutengren et al., 2020), few scholars have analyzed its positive effect from the context of the SSG perspective. We investigated whether subordinates' relational crafting could influence their job well-being by affecting SSG. In this way, our study extends over two domains, job crafting literature and social network literature, contributing to job well-being; namely, work dynamics and emotional exhaustion. Third, although past research provides burgeoning evidence of the positive consequences of relational crafting, we suggest that its outcomes may be more varied (Wrzesniewski and Dutton, 2001; Weseler and Niessen, 2016). We argue that relational crafting is not only associated with attitude-related positive outcomes but also has the potential to cause high work load harmful to subordinates' job well-being. Hence, we propose that relational crafting can be a "double-edged sword" and may lead to lower job well-being, which supplements and expands the existent research on proactive behavior. Finally, previous studies on relational crafting are mainly based on the self-determination theory and the JD-R model from a single perspective. This study integrates the JD-R model and the COR theory from the resource loss and the resource acquisition processes to fill this gap, providing a new theoretical explanation for the connection between proactive behavior and job well-being.

## THEORY AND HYPOTHESES

### Theoretical Foundations of Relational Crafting and Job Well-Being

Relational crafting is a type of job crafting. Wrzesniewski and Dutton (2001) proposed a widely applied definition of job crafting by regarding it as an employee behavior that actively changes role boundaries. On this basis, they also classified three types of job crafting: task crafting, relational crafting, and cognitive crafting. However, in recent years, with increasing attention on the other effects of job crafting (apart from the positive ones), more comprehensive classifications have been suggested. For example, Weseler and Niessen (2016) divided job crafting into five dimensions, combining the crafting direction (expansion reduction) with crafting content (task relationship) while retaining cognitive crafting. Bruning and Campion (2018) built role-resource approach-avoidance taxonomy to divide job crafting into four dimensions: approach role/resource crafting and avoidance role/resource crafting. Lichtenthaler and Fischbach (2019) categorized it into promotion-focused and prevention-focused job crafting based on the regulatory focus theory. Zhang and Parker (2019) defined job crafting as a hierarchical structure after affirming the importance of approach-avoidance motivation. They viewed crafting direction (approach avoidance) as the first level, crafting content (behavior cognition) as the second level, and crafting goals (resources demands) as the third level, thereby forming an integrated crafting model with eight dimensions. In light of previous related research

outcomes and Zhang and Parker's (2019) view, we believe that the approach-avoidance perspective is more appropriate. Approach crafting refers to positive, goal-oriented, and problem-oriented crafting behaviors, while avoidance crafting involves behaviors with negative and evasive aspects (Costantini et al., 2021). Accordingly, the key implication arising from the achievements above is that relational crafting also has approach-avoidance orientations with the characteristics corresponding to approach-avoidance job crafting. In the current study, as aforementioned, we focus predominantly on approach-oriented relational crafting.

The concept of job well-being was proposed to describe the specific expression of well-being in work, that is, the perceived well-being of employees in their workplace. It can be used to understand employees' cognitive evaluations and affective experiences (Diener, 2000; Li et al., 2021). In terms of cognitive evaluation, job well-being is reflected in the evaluation of overall job satisfaction. For example, Ryff and Keyes (1995) pointed out that the nature of job well-being includes employees' evaluations of job autonomy, environmental mastery, and personal growth. Regarding affective experience, job well-being is perceived as the balance between positive and negative effects. Compared with the cognitive dimension, the affective dimension not only has a more significant positive effect on subordinates' work behaviors and performance but also reflects better their psychological and emotional changes in the process of relational crafting. Staw et al. (1994) argued that employees with stronger positive affect are more likely to receive positive comments from their supervisor. Arnold et al. (2007) also found that affective well-being can explain job performance variation after the influence of fixed control variables of job satisfaction and organizational commitment. In addition, Chinese subordinates' relational crafting may require them to invest more physical and psychological resources to deal with the vastly rich and complex *guanxi*. Receiving support from supervisors can act as an energy supplement for subordinates. Therefore, we emphasize the affective experience of job well-being. As Bradburn (1969) proposed, "the positive affect and negative affect are the two independent dimensions of job well-being, and when the frequency of positive affect is higher than that of negative affect, employees will exhibit job well-being." Diener (2000) stated that "job well-being is a kind of affective experience in which positive affect (e.g., happiness, joyousness, enthusiasm, etc.) surpasses negative affect (e.g., shame, anxiety, depression, etc.) and occupies the dominant position." We, therefore, pay attention to the positive and negative aspects of job well-being. Based on the studies of Cropanzano and Wright (2001) and Du et al. (2014), we consider work dynamics and emotional exhaustion as the embodiment of the positive affect, while the negative affect measures job well-being from the opposite direction. Work dynamics include employees' spiritual attitudes with vitality and vigor. Ryan and Deci (2001) believed that employees feeling true well-being are full of vitality and dynamics, making work dynamics a key indicator of job well-being. Emotional exhaustion is the core feature of burnout, as it describes a feeling and state of emotional draining caused by individuals' personal resources being nearly drained by work

stressors (Maslach and Jackson, 1981). Warr (1987) proposed that emotional exhaustion is also a dimension of job well-being.

## Theoretical Background

Relational crafting has opposite directional influences on job well-being, and the JD-R model and the COR theory provide a theoretically integrated framework, detailing when relational crafting damages or benefits crafters' well-being. The JD-R model, proposed by Demerouti et al. (2001), categorizes every occupation's characteristic into general categories: job demands and job resources. Job demands refer to the "negative factors" that require an individual's sustained physical and/or psychological effort or skills in the job, which are more associated with physiological and/or psychological costs, including high work pressure, interpersonal conflict, job insecurity, and an unfavorable physical environment (Demerouti and Bakker, 2011). Job resources refer to the "positive factors" with motivational potential at the organizational, interpersonal, and task level to help employees achieve work goal, reduce job demands and the associated physiological and psychological costs, while stimulating personal growth and development, including job security, leader support, and job autonomy (Demerouti et al., 2001; Demerouti and Bakker, 2011; Bakker and Sanz-Vergel, 2013). The COR theory, proposed by Hobfoll (1989), indicates that employees with abundant resources have more opportunities to obtain additional resources and gain benefits from them, whereas those who lack vital resources are more likely to experience subsequent losses and perceive threats (e.g., stress) (Hobfoll, 1989). According to the COR theory, one of the basic needs of human beings is to acquire and accumulate resources to conserve other important resources that are crucial for obtaining higher-level goals or an ideal future state (Hobfoll, 2011; Hobfoll et al., 2018). Meanwhile, the COR theory teaches us that when individuals' access to essential resources is threatened, when they lose vital resources, and when fewer resources offset resources loss, they may experience stress. Resource loss is more striking than resource gain as it constitutes a significant risk to subsistence and impacts people more swiftly (Ojo et al., 2021). Consequently, the core hypotheses of "dual paths" are developed based on the JD-R model and the COR theory, indicating that two different underlying processes play a role in relational crafting. The first is the effect of the resource loss process, suggesting that demanding jobs or ones with chronic or high demands and low personal and job resources may lead to the depletion of energy (i.e., emotional exhaustion) and health problems. The second is the effect of the resource acquisition process, implying that personal and job resources may play an intrinsic motivational role and lead to high job engagement and job well-being (Deng et al., 2021). Therefore, there are both resource loss and resource acquisition effects in relational crafting. The loss effect path depicts negative outcomes, such as health problems and emotional exhaustion, whereas the acquisition effect path describes positive outcomes, such as high job engagement and positive affect.

Based on the JD-R model and the COR theory, on the one hand, we consider work load and elaborate its mediating role in the resource loss path. The process of subordinates' relational crafting consumes substantial time and energy, which

undoubtedly increases work load. Furthermore, subordinates may struggle to deal with the increasingly complex and varied *guanxi*, which will aggravate work load, cause emotional exhaustion and job burnout, and hamper job well-being. On the other hand, we consider SSG and elaborate its mediating role in the resource acquisition path. *Guanxi* is not only an indigenous Chinese construct but also plays an important role in Chinese culture (Miao et al., 2020). SSG, a special type of *guanxi* in Chinese organizations, covers both work-related exchanges and informal and non-work-related interactions between supervisors and their subordinates (Zhang et al., 2014; Miao et al., 2020). When subordinates craft their jobs by deepening relationships (e.g., building new *guanxi*, reconstructing existing *guanxi*, and adapting to *guanxi* with co-workers or supervisors) at work, they build a friendlier *guanxi* with their co-workers and supervisors due to positive self-presentation (Daniels et al., 2014). In particular, due to the bureaucratic consciousness in the Chinese workplace and the fact that supervisors have considerable latitude to make decisions without sticking to formal rules (Miao et al., 2020), subordinates prefer to improve *guanxi* with their supervisor. Thus, in this study, we focus on enhancing the quality of SSG through relational crafting. The high quality of SSG enables subordinates to obtain more personal and job resources, such as emotional support, trust, information, and empowerment from their supervisor (Cheung et al., 2009), thereby increasing work dynamics and promoting job well-being. In sum, we aim to examine whether subordinates' relational crafting can affect job well-being through work load and SSG.

## Resource Loss Path: The Mediating Role of Work Load

Work load is one of the characteristics/sources of job stress, which can be regarded as employees' or subordinates' subjective judgment of workload (Spector and Jex, 1998; Price, 2001). As previously reported, work load is mainly reflected by long work time, fast work pace, and a large number of assigned tasks (Spector and Jex, 1998). Relational crafting consumes resources and causes work load increase. According to the COR theory, we believe that work load is a typical representative of the resource loss path, and subordinates' relational crafting will increase their work load as they have to divert some of the time, energy, and resources, which they normally spend on their own job to create an expanded and deepened social and work *guanxi*, thereby negatively influencing their work pace since personal resources are finite and "travel in packs, or caravans." (Hobfoll, 2011; Hobfoll et al., 2018). Meanwhile, the consumption of relationships and tasks on subordinates' personal and job resources may cause a lack of sufficient cognitive resources to enact other formally prescribed behaviors and to fulfill others' role expectations if fewer resources offset these resources loss (Hobfoll et al., 2018), resulting in increased stress and work load. In addition, when subordinates craft relationships, they may be involved in a series of complex intellectual activities that can take up more time, energy, cognitive ability, and other resources because of the complicated *guanxi* in the Chinese workplace (Luo et al., 2016). As a result, subordinates feel overwhelmed. Taken collectively, subordinates' relational crafting can inevitably and

significantly cause work load increase if the resource loss cannot be replaced in time.

Furthermore, work load is an important source of job demands for subordinates, impacting their psychology (Ilies et al., 2010). Building on the JD-R model, job demands are the physical, psychological, and social requirements of the individuals, which require effort and cost. When job demands are consistently high and no job resources are available to compensate, the individuals' energy will be constantly depleted, which may lead to energy exhaustion (Demerouti et al., 2001). The COR theory also states that when individuals perceive constant resource consumption and face the threat of resource loss and the failure to obtain the corresponding return on resource investment, they tend to become more sensitive to resource reduction, resulting in undesirable results, including reduced job well-being (Huang et al., 2019). As previously proposed, the resource occupation of subordinates' relational crafting will inevitably and significantly reduce their resources to enact other formally prescribed behaviors as resources are finite, and thus increase their subjective job stress, work pace, and perceived assignments, thereby enhancing work load and reducing well-being. Prior research also indicated that excessive work load not only had a negative effect on job status and job satisfaction (Kunte et al., 2017; Mittal and Bhakar, 2018; Hwang et al., 2020) but was also positively related to job burnout and emotional exhaustion (Weigl et al., 2016; Buruck et al., 2020). Therefore, we hypothesize the following:

Hypothesis 1a: Relational crafting is negatively related to work dynamics by increasing work load.

Hypothesis 1b: Relational crafting is positively related to emotional exhaustion by increasing work load.

## Resource Acquisition Path: The Mediating Role of Supervisor-Subordinate *Guanxi*

Supervisor-subordinate *guanxi*, a specific and essential type of *guanxi* in the Chinese workplace, is defined as "the relationship between a subordinate and his or her immediate supervisor," creating a sense of "social connections" based on mutual interest and benefit (Wong et al., 2003, p. 484). SSG researchers view subordinates as a vital part in determining the quality of SSG (Miao et al., 2020). Prior literature has shown that supervisors in Chinese organizations always offer different bonuses and opportunities to their subordinates based on *guanxi* (Chen et al., 2009), which motivates subordinates to invest in their *guanxi* with supervisors. This implies that subordinates who undertake relational crafting in Chinese organizations will attach greater importance to improve the *guanxi* with their supervisor instead of this with co-workers (Yin et al., 2017), which enables them to understand better their supervisor's demands and preferences and gain the supervisor's trust, in a way becoming a member of the supervisor's "in-group" (Lam et al., 2015). Moreover, subordinates who craft their interpersonal relationships at work by choosing to spending more time with valued, liked, and preferred individuals can establish a *guanxi* circle in line with

their preference, thereby enhancing job engagement (Yin et al., 2017). Increased job engagement demonstrates the positive image to their supervisor. This relational crafting represents a proactive impression management tactic that can change supervisors' cognition and make a good impression on them that would obtain positive responses (Fuller et al., 2012). Meanwhile, relational crafting can be perceived by supervisors as a pro-organizational and initiative behavior that contributes to an organization, and the subordinates will, in turn, become closer than others to a member of the "in-group." The identity of an "in-group" member means that subordinates' relational crafting not only establishes a strong working relationship with their supervisor but also allows to keep in touch with the supervisor, resulting in improved private relationship, since an "in-group" member would be more valued and favored by his or her supervisor (Xu et al., 2019). For example, the supervisor may give the subordinates (i.e., crafters) more authorization and a high-performance rating formally, and may also put more effort in the informal relationship, including visiting each other or eating dinner together after work. Altogether, relational crafting has a positive spillover effect for the *guanxi* between subordinates and their supervisor both in and outside the workplace (Chen et al., 2011). High quality of working and private relationships is an important foundation for high quality of SSG as it is not limited to the scope of work (Chen et al., 2009; Tang et al., 2020). Furthermore, as Yin et al. (2017) argued, the relational resources accumulated through subordinates' relational crafting not only create opportunities for task crafting but also change their supervisor's attitude toward such behaviors, which, in turn, enables them to assist supervisors in jobs by extending task boundaries and taking on additional tasks on the basis of easing supervisors' worries about their extending task crafting (e.g., perceived threat). In other words, by taking on extra-role responsibilities based on relational crafting, subordinates' loyalty and affinity will be highly valued, which is the key to establishing and maintaining high quality of SSG (Tang et al., 2020). According to the COR theory, subordinates' relational crafting is also a behavior to acquire and accumulate resources, which increases their core *guanxi* resources in the Chinese workplace. Hence, we posit that relational crafting improves SSG.

Due to the differential pattern in Chinese organizations, supervisors always give different opportunities and resources to their subordinates according to the quality and relatedness of SSG. High quality of SSG is not only an important job resource (Bakker and Demerouti, 2007) but also constitutes a social resource that can spill over into the workplace and improve subordinates' additional job resources, such as opportunities, support, autonomy, and development (Guan and Frenkel, 2019). Based on the JD-R model and the COR theory, we believe that SSG can improve subordinates' resource accumulation, enabling them to engage further in a job and accrue more job resources that contribute to higher work dynamics and lower emotional exhaustion (Hobfoll, 1989; Demerouti et al., 2001). Tan et al. (2020) suggested that when employees had a high level of organizational support, their sense of responsibility to an organization increased, creating higher work commitment and work dynamics. Huang et al. (2010) found that SSG



was considered a valuable resource that could help overcome emotional exhaustion at work. Furthermore, several scholars have also explained and examined the relationship between SSG and subordinates' affective outcomes. For example, Zhai et al. (2013) argued that SSG was positively related to job satisfaction. Li et al. (2018) also highlighted the importance of SSG and stated that SSG cultivated subordinates' happiness through increased resources and personal power. In sum, a key implication arising from the high quality of SSG is that when subordinates have that with their supervisor, they are more likely to sustain positive work mood because of the additional emotional support, resulting in increased work dynamics and reduced emotional exhaustion. Therefore, we hypothesize the following:

Hypothesis 2a: Relational crafting is positively related to work dynamics by increasing SSG.

Hypothesis 2b: Relational crafting is negatively related to emotional exhaustion by increasing SSG.

Figure 1 shows our theoretical model.

## MATERIALS AND METHODS

### Sample and Procedure

We aim to explore how relational crafting affects job well-being. Therefore, the sample companies must have a certain degree of openness and flexibility to lay a contextual foundation for crafting activities. A total of 500 employees from high-tech enterprises and hospitals in the eastern coastal areas of China were surveyed with the help of relatives and friends. All the participants were full-time employees and were employed in different occupations, including human resource specialists, nurses, doctors, accountants, and construction managers. Before data collection, several researchers had met with some participants to describe to all the participants the aims, procedures, and relational crafting's connotation to ensure that everyone could clearly understand all items.

At Time 1 (T1), we sent 500 employees the link to the questionnaire website and asked them to report relational crafting and demographics (gender, age, education, and working years), receiving the completed surveys from 452 participants (response rate: 90.40%). At Time 2 (T2) (about 3 months later), SSG, work load, job well-being, and demographics (gender, age, education, and working years) were measured by sending WeChat messages and e-mails with the questionnaire website link to the respondents at T1. A total of 375 employees returned the T2 survey (response rate: 82.96%). The two-wave data were matched by participants' WeChat and e-mail. All ratings were anonymous as we did not collect clear names. After deleting the invalid forms, a total of 323 matched surveys were retained (overall response rate: 64.60%). The results of *t*-tests showed that there were no significant differences on demographics or T1 variables (i.e., relational crafting) existed between the T2 responders and non-responders (Dooley and Lindner, 2003). About 55.11% of the participants were male; 25.70% were under the age of 25, 25.38% were aged between 25 and 35, 34.06% were aged between 35 and

45, 14.86% were over 45 years old; 66.87% of the participants had a bachelor's degree or above; 19.81% had work for a year or less, 39.63% had worked for 2–5 years, 24.15% had worked for 6–9 years. About 42.11% of the participants were human resource specialists, 30.96% worked in a medical position, 17.03% were accountants, 9.91% were construction managers.

### Measures

Unless otherwise noted, responses to all items were measured on seven-point Likert-type scales, ranging from strongly disagree (1) to strongly agree (7).

#### Relational Crafting

Relational crafting was assessed using a five-item scale developed by Slemp and Vella-Brodrick (2013). In their study, the main items of relational crafting scale were related to build harmonious interpersonal relationships and did not include reducing or avoiding the interaction with others, which was in line with the current study. A sample item is "Make an effort to get to know people well at work." The Cronbach's  $\alpha$  score for the scale was 0.861.

#### Work Load

A five-item scale developed by Spector and Jex (1998) was used to assess work load. A sample item is "My job requires me to finish the task quickly." The Cronbach's  $\alpha$  score for the scale was 0.841.

#### Supervisor-Subordinate *Guanxi*

Supervisor-subordinate *guanxi* (SSG) was assessed using Wong et al.'s (2003) seven-item scale. Their measure reflected the *guanxi* quality between supervisors and their subordinates, which was suitable for our research. Given the characteristics of the scale and the purpose of reducing respondents' burden to complete the questionnaire, we combined items 4 and 5 into one item, namely, "My immediate supervisor and I are quite willing to help each other (e.g., finding, moving, or decorating a house)." The six items exhibited high internal consistency. The Cronbach's  $\alpha$  score for the scale was 0.910. A sample item is "I have frequent interactions with my immediate supervisor."

#### Work Dynamics

This variable was measured using a six-item scale from Schaufeli et al. (2002). A sample item is "When I get up in the morning, I feel like going to work." The Cronbach's  $\alpha$  score for the scale was 0.844.

#### Emotional Exhaustion

Emotional exhaustion was measured using a Chinese version (Li and Shi, 2003) of Maslach Burnout Inventory (MBI) that assessed emotional exhaustion with five items. It had been proved to have high reliability and validity. A sample item is "Job makes me tired." The Cronbach's  $\alpha$  score for the scale was 0.878.

#### Control Variables

We collected several demographic variables, including gender, age, education, and working years, as prior literature suggested that compared with men, women might implement relational crafting differently in many aspects, and employees with more

experience and a higher level of education tended to engage in fewer crafting behaviors (Tims et al., 2013; Dierdorff and Jensen, 2017). Hence, we controlled them to rule out alternative explanations and to carry out a more reliable test. All the controlled variables were dummy coded. Gender was coded as 1 for the participants who were male and 2 for participants who were female. Age was coded as 1 for the participants who were aged under 25 years old, 2 for participants who were aged between 25 and 35, 3 for the participants who were aged between 35 and 45, and 4 for the participants who were aged over 45 years old. Education was coded as 1 for the participants who had finished a high school education or below, 2 for the participants who had an associate's degree, 3 for the participants who had a bachelor's degree, and 4 for the participants who had a postgraduate's degree. Working years was coded as 1 for the participants who had worked for a year or less, 2 for the participants who had worked for 2–5 years, 3 for the participants who had worked for 6–9 years, and 4 for the participants who had worked for 10 years or more.

## Data Analysis

We used SPSS 22.0 and Amos 23.0 for data analysis. First, Cronbach's  $\alpha$ , composite reliability, and confirmatory factor analyses (CFAs) were conducted to assess the reliability and validity of the key variables. Common method variance (CMV) was also assessed. Second, we used path analysis to evaluate the theoretical model (see **Figure 1**) and the alternative model (adding the direct path from relational crafting to job well-being based on the theoretical model); thus, we chose the optimal model to examine the hypothesized relationships (Anderson and Gerbing, 1988). Finally, we used the bootstrapping method to test mediation because of its high power (Preacher and Hayes, 2004, 2008).

## RESULTS

### Reliability and Validity

First, before conducting reliability and validity test, we had checked CMV because it is a potential issue in the self-reporting approach research. We used Harmon's one-factor test by including all of the items of the five variables (i.e., relational crafting, work load, SSG, work dynamics, and emotional exhaustion) to examine CMV in SPSS 22.0. When the first emerging factor accounted for over 50% of the extracted variables'

variance, common method bias was suggested and CMV would be a problem. The results demonstrated that the first emerging factor accounted for 14.83% of the explained variance, indicating that CMV was not a significant problem in the present study.

Second, we calculated Cronbach's  $\alpha$  and composite reliability of relational crafting, work load, SSG, work dynamics, and emotional exhaustion to examine the reliability. As mentioned above and displayed in **Table 2**, the values of Cronbach's  $\alpha$  and composite reliability were greater than the threshold value of 0.80, demonstrating acceptable reliability.

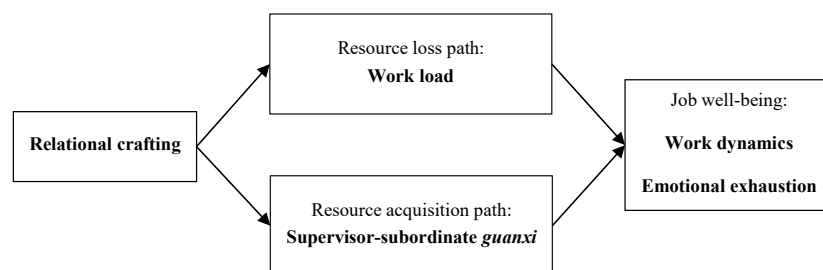
Finally, we conducted a series of CFAs using Amos 23.0 on the scales, including relational crafting, work load, SSG, work dynamics, and emotional exhaustion, to examine discriminant validity (see **Table 1**). Results showed that the fit of the five-factor model in which items were loaded on their respective measures was better than any other model ( $\chi^2/df = 2.696$ , RMSEA = 0.061, CFI = 0.928, TLI = 0.918, SRMR = 0.059). These results of CFA provided full support for the discriminant validity of our study instruments. We also used the square roots of the average variance extracted (AVE) to further examine the discriminant validity. As shown in **Table 2**, the square roots of AVE were larger than each construct's correlation coefficients, ensuring satisfactory discriminant validity.

### Descriptive Statistics and Correlations

**Table 2** provides means, standard deviations (S.D.), and correlations among study variables. As anticipated, relational crafting (T1) was positively related to work load (T2) ( $r = 0.143$ ,  $p < 0.01$ ) and positively related to SSG (T2) ( $r = 0.184$ ,  $p < 0.01$ ). Work load (T2) positively related to emotional exhaustion (T2) ( $r = 0.564$ ,  $p < 0.01$ ). SSG (T2) was positively associated with work dynamics (T2) ( $r = 0.468$ ,  $p < 0.01$ ), negatively associated with emotional exhaustion (T2) ( $r = -0.201$ ,  $p < 0.01$ ). These results provide preliminary support for the hypotheses proposed above. We further used path analysis to test the entire model and the hypotheses.

### Hypotheses Testing

Study hypotheses were tested using path analysis. We added both direct paths from relational crafting to job well-being based on the theoretical model to get the optimal model. Results demonstrated that both the theoretical model ( $\chi^2/df = 3.146$ , RMSEA = 0.063, CFI = 0.918, TLI = 0.889, SRMR = 0.066) and the alternative model ( $\chi^2/df = 3.134$ ,



**FIGURE 1 |** Theoretical model.



**TABLE 1 |** Results of confirmatory factor analyses.

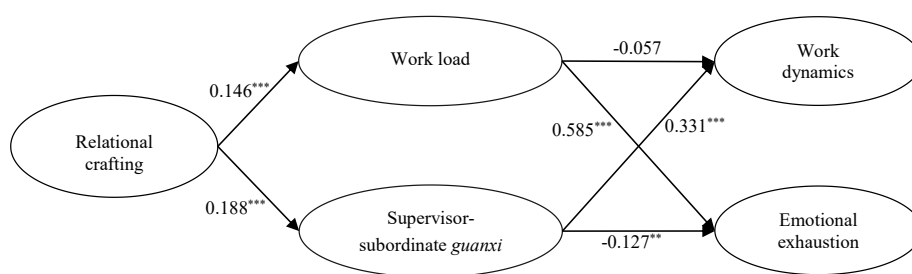
Models	Variables	$\chi^2$	df	$\chi^2/df$	RMSEA	CFI	TLI	SRMR
Five-factor model	RC, WL, SSG, WD, EE	846.672	314	2.696	0.061	0.928	0.918	0.059
Four-factor model <sup>1</sup>	RC,WL+SSG,WD, EE	1,135.347	318	3.570	0.097	0.833	0.805	0.095
Four-factor model <sup>2</sup>	RC, WL, SSG,WD+EE	1,008.451	318	3.171	0.104	0.823	0.794	0.088
Three-factor model	RC, WL+SSG, WD+EE	1,229.533	321	3.830	0.105	0.736	0.702	0.100
Two-factor model	RC+WL+SSG, WD+EE	1,844.033	323	5.709	0.164	0.635	0.604	0.159
One-factor model	RC+WL+SSG+WD+EE	2,451.275	324	7.566	0.173	0.548	0.510	0.160

<sup>1</sup> & <sup>2</sup> represents different models of Four-factor model.

**TABLE 2 |** Means, standard deviations, and correlations.

Variables	1	2	3	4	5	6	7	8	9
1. Gender									
2. Age	0.093								
3. Education	−0.025	0.144**							
4. Working years	0.044	0.068	0.122*						
5. RC T1	0.001	−0.005	−0.016	−0.044	<b>0.807</b>				
6. WL T2	−0.003	0.033	−0.034	−0.027	0.143**	<b>0.786</b>			
7. SSG T2	0.007	0.042	0.017	0.001	0.184**	−0.104	<b>0.833</b>		
8. WD T2	−0.005	−0.020	0.118*	0.023	0.288**	−0.109	0.468**	<b>0.758</b>	
9. EE T2	0.113*	0.109	−0.028	−0.001	−0.106*	0.564**	−0.201**	−0.140**	<b>0.820</b>
Composite reliability					0.903	0.890	0.931	0.888	0.911
Mean	1.449	2.381	2.712	2.372	4.959	4.914	5.182	4.596	4.696
S.D.	0.498	1.017	0.853	0.984	0.587	1.039	0.768	0.540	0.925

\*\* $p < 0.01$ , \* $p < 0.05$ . The bold values are the square roots of AVE.

**FIGURE 2 |** Path analysis results. \*\*\* $p < 0.001$ , \*\* $p < 0.01$ , and \* $p < 0.05$ .

RMSEA = 0.061, CFI = 0.918, TLI = 0.891, SRMR = 0.070) fitted the data well. According to the principle of model parsimony suggested by Little (1997), we accepted the theoretical model as the most preferred model. The standardized coefficients for all paths estimated in the theoretical model are shown in **Figure 2**. Results showed that relational crafting was positively associated with work load ( $\beta = 0.146$ ,  $p < 0.001$ ), and that work load was positively associated with emotional exhaustion ( $\beta = 0.585$ ,  $p < 0.001$ ) after the influence of fixed control variables, indicating that Hypothesis 1b received support. However, the path coefficient between work load and work dynamics was not significant, demonstrating that Hypothesis 1a did not receive support. We held that the reason why the path coefficient between work load and work dynamics was negative but not significant might be that SSG and the control variables had a strong impact on work dynamics, enabling the effect of work load to be covered. Moreover, relational crafting was positively related to SSG ( $\beta = 0.188$ ,  $p < 0.001$ ), SSG was positively related to work dynamics ( $\beta = 0.331$ ,  $p < 0.001$ ), and that SSG was negatively

related to emotional exhaustion ( $\beta = -0.127$ ,  $p < 0.01$ ) after the influence of fixed control variables (gender, age, education, and working years), indicating that Hypothesis 2a and Hypothesis 2b received support.

To test the mediation effect of work load and SSG, we used the procedures proposed by Preacher and Hayes (2004) and Preacher and Hayes (2008) and applied the bootstrapping method to further examine mediation through the “Process” plugin of SPSS 22.0. This method can produce higher statistical power. The bootstrapping sample size was set to 5,000, the confidence interval was set to 95%, and the results are shown in **Table 3**.

The bootstrapping mediation analysis showed that, at the 95% confidence interval level, (1) the indirect effect of work load between relational crafting and work dynamics was  $-0.009$ , and the confidence interval (LLCI =  $-0.026$ , ULCI =  $0.003$ ) included 0, indicating that Hypothesis 1a did not get supported. (2) The indirect effect of work load between relational crafting and emotional exhaustion was  $0.087$ , and the confidence interval (LLCI =  $0.021$ , ULCI =  $0.195$ ) did not include 0, indicating that

**TABLE 3 |** Results of bootstrapping mediation effect examination.

Paths	Effect	S.E.	LLCI	ULCI
Relational crafting → work load → work dynamics	−0.009	0.008	−0.026	0.003
Relational crafting → work load → emotional exhaustion	0.087	0.056	0.021	0.195
Relational crafting → SSG → work dynamics	0.062	0.024	0.018	0.110
Relational crafting → SSG → emotional exhaustion	−0.023	0.015	−0.056	−0.008

Hypothesis 1b was fully supported. (3) The indirect effect of SSG between relational crafting and work dynamics was 0.062, and the confidence interval (LLCI = 0.018, ULCI = 0.110) did not include 0, indicating that Hypothesis 2a was fully supported. (4) The indirect effect of SSG between relational crafting and emotional exhaustion was −0.023, and the confidence interval (LLCI = −0.056, ULCI = −0.008) did not include 0, indicating that Hypothesis 2b was fully supported.

## DISCUSSION

The study was built on the JD-R model and the COR theory to examine how subordinates' relational crafting impacted their job well-being. Our findings demonstrated that relational crafting had an opposite directional influence on job well-being through two different mediating variables (work load and SSG). More specifically, subordinates' relational crafting harmed job well-being by increasing their work load but promoted their job well-being by enhancing SSG. Our findings indicate the complex mediating process of subordinates' relational crafting on job well-being, presenting a more nuanced explanation of the relationship between relational crafting and job well-being. At the same time, we validated the JD-R model and the COR theory and shed light on two of their specific mechanisms before revealing both dysfunctional and functional outcomes of relational crafting.

## Theoretical Implications

First, the focus of our work extends the current job crafting literature by specifically examining relational crafting. As mentioned above, prior studies primarily try to recognize relational crafting as a type of job crafting and examine its effect (Slomp and Vella-Brodrick, 2014; Slomp et al., 2015; Lee and Lee, 2018). It is essential to understand the effects of relational crafting. Not only does it have unique characteristics different from task crafting and cognitive crafting, but it also has much greater significance in Chinese organizations with a high emphasis on *guanxi* (Li et al., 2018). Our study aimed to conduct an examination of subordinates' relational crafting consequences and analyzed the potential for both negative and positive outcomes, which extended and updated the relevant studies.

Second, our study provides a new perspective to explore the beneficial mediator variables between subordinates' relational crafting and attitude-related outcomes. Our study is the first to explicitly examine the mediating effect of SSG on relational

crafting and job well-being. Prior job crafting literature attempts to test the positive consequences of intrinsic need, job autonomy, job engagement, job enjoyment, and team efficacy (Lee and Lee, 2018; Lazazzara et al., 2020). Most previous social network literature on SSG mainly focuses on the outcomes of SSG, including behavioral, attitudinal, and perceptual ones, such as job promotion, organizational commitment, and trust (Miao et al., 2020). We found that subordinates who craft their *guanxi* in the workplace are more likely to be categorized as “in-group” members by supervisors, thereby enhancing SSG and improving their job well-being. Thus, we found an antecedent variable of SSG and integrated two domains, namely, job crafting and social network, to contribute to job well-being.

Third, our study provides new evidence to understand the relationship between relational crafting and job well-being. In particular, we propose and prove that subordinates' relational crafting has a double-edged sword effect on job well-being. Our results are consistent with those of Wrzesniewski and Dutton (2001), Gordon et al. (2015), Bruning and Campion (2018), and Lazazzara et al. (2020), who suggest that job crafting is not always positive. We extended this research concentrate on subordinates' relational crafting and classified job well-being into work dynamics and emotional exhaustion, making a direct empirical examination of the important theoretical stipulation. As such, our work is significant for understanding the coexistence of the positive and negative sides of subordinates' proactive behavior, as their relational crafting involves proactive self-initiating changes (Wrzesniewski and Dutton, 2001; Parker et al., 2010). The positive side of proactive behavior has been frequently discussed in prior literature, as shown in a meta-analysis by Thomas et al. (2011); nevertheless, most of the current studies did not capture the potential negative effect of proactive behavior. Our research showed that subordinates' relational crafting can also negatively influence their job well-being through increased work load, which fills the gap and echoes the suggestion of Harju et al. (2021) to test the double-edged sword effect of job crafting.

Finally, our study takes a more unifying view to understand the complex mediating mechanism by integrating the JD-R model and the COR theory, in which resources are consumed or protected in the process of subordinates' relational crafting. Although the beneficial mediator variables *via* the process of relational crafting positively influencing job well-being based on the self-determination theory and the JD-R model have been frequently investigated in prior literature (Tims et al., 2013; Slomp and Vella-Brodrick, 2014; Harju et al., 2021), the cost mediator variables *via* its negative influence on job well-being or the potential mediator variables that can explain the double-edged sword effect on job well-being are overlooked. Thus, we extended the existent research by exploring the resource loss path and the resource acquisition path of subordinates' relational crafting in one model based on a new theoretical perspective, depicted as a double-edged sword effect on job well-being.

## Practical Implications

In addition to the theoretical implications, this study also provides guidance for practitioners. First, by providing evidence that relational crafting could improve job well-being, we hope

to draw the attention of organizations and managers to the importance of carefully motivating and controlling subordinates' relational crafting. On the one hand, organizations and managers should give subordinates opportunities to experiment with various behaviors of relational crafting. On the other hand, we raise the question of whether it is possible to develop a temperate level of subordinates' relational crafting in which subordinates do not experience its major negative effect, the increased work load. Practically, we suggest that subordinates can adjust the development process of relational crafting according to the actual situation, as the process is a proactive behavior. For example, they could choose several measures, such as seeking external support and taking recovery activities, when perceiving demands that are beyond their capabilities and resources. Previous studies found that supervisory support reduces the negative effects of high job strain (Sargent and Terry, 2000), and recovery activities help employees' resources return to pre-stress states (Kim S. et al., 2018). Meanwhile, we suggest that organizations and managers/supervisors may need to engage in several crafting training programs to better understand relational crafting and its potential negative side. Lee and Lee (2018) argued that with a better understanding of crafting, managers and supervisors can ensure positive outcomes. More importantly, managers/supervisors could take measures to reduce the negative effect of subordinates' relational crafting on job well-being. For example, a relational crafting intervention may be considered as an effective measure to weaken the potential work load that might be caused by relational crafting (Van Wingerden et al., 2017). Furthermore, supervisors should provide subordinates (crafters) with adequate support and care to compensate for the time, energy, and cognitive resources consumed during relational crafting, as SSG is an important resource for amplifying work dynamics and buffering emotional exhaustion. Finally, as subordinates' personal and job resources can be influenced by the working environment, and abundant resources can reduce the possibility of overload, organizations should create a supportive context, enriching their resources.

## Limitations and Future Research

Our study has several limitations. First, although the two-stage design reduces common method bias, the results also showed that this bias did not significantly affect our research, as the problems of the self-report questionnaire measures that we used in the empirical examination still exist (Hair et al., 2006). Accordingly, we suggest that future studies conduct a three-wave longitudinal study to analyze the mediation model more accurately. In addition, future studies could collect data from multiple and random sources because of the large Chinese population.

Second, we only examined the resource loss and resource acquisition perspectives *via* which relational crafting creates a double-edged sword effect based on the JD-R model and the COR theory. Future studies could test other possible mediating mechanisms, such as the self-presentational and the self-defense mechanisms that might explain the potential double-edged sword effect of relational crafting. Relational crafting can improve *guanxi* with supervisors and help employees gain their trust and information, and thus obtaining supervisors' recognition. From

the perspective of the self-presentational mechanism, in order to constantly meet supervisor's expectations and demonstrate value, subordinates will be motivated to engage in more activities that are significant to the supervisor and the organization (Lau et al., 2014), resulting in increased work dynamics. However, the trust that subordinates gain from their supervisor through relational crafting often implies an increase in their own work-related obligations and an expansion of their role (Baer et al., 2015; Ren and Chadee, 2017). Based on the self-defense view, subordinates also perceive this trust as a potential threat that may increase their anxiety and emotional exhaustion.

Third, the current study confirmed that subordinates' relational crafting had an opposite directional influence on job well-being through two paths. For a single path, we encourage researchers to conduct further discussions and examinations. For example, if relational crafting is poorly performed (e.g., by blindly pursuing one's self-interest), it may also have negative effects, such as triggering colleagues' jealousy, increasing excessive and unnecessary energy consumption, and increasing workload. In this way, the resource acquisition process may lead to decreased job well-being. Thus, we propose to define this impact as the too-much-of-a-good-thing effect of relational crafting and call for more research to test the issue.

Finally, Zhai et al. (2013) suggested that co-worker *guanxi* also needs to be labeled as a type of workplace *guanxi*, which inspired us to investigate the effect of relational crafting on both SSG and co-worker *guanxi*. In addition, Kim H. et al. (2018) found that task crafting can be costly (e.g., lower job satisfaction) to the crafter, providing thereby, some clues for further research. Future research may explore the double-edged-sword effect of other specific crafting forms, such as task crafting, and the mediating mechanisms.

## DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

## AUTHOR CONTRIBUTIONS

SL predominantly contributed to conducting the literature review, designing the research, collecting some of the data, analyzing the data, and drafting the manuscript. BM and QW repeatedly revised and refined the content of the manuscript. QW contributed to helping to collect some of the data and drafting the manuscript. All authors substantially contributed to the research concept and design.

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# Unlimited Paid Time Off Policies: Unlocking the Best and Unleashing the Beast

Jessica de Bloom<sup>1,2</sup>, Christine J. Syrek<sup>3</sup>, Jana Kühnel<sup>4\*</sup> and Tim Vahle-Hinz<sup>5</sup>

<sup>1</sup> Faculty of Social Sciences, Tampere University, Tampere, Finland, <sup>2</sup> Department of HRM&OB, Faculty of Economics and Business, University of Groningen, Groningen, Netherlands, <sup>3</sup> Department of Business Psychology, University of Applied Sciences Bonn-Rhein-Sieg, Rheinbach, Germany, <sup>4</sup> Department of Occupational, Economic and Social Psychology, University of Vienna, Vienna, Austria, <sup>5</sup> Department of Organizational, Business, and Social Psychology, Psychologische Hochschule Berlin, Berlin, Germany

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### \*Correspondence:

Jana Kühnel  
jana.kuehnel@univie.ac.at

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Unlimited paid time off policies are currently fashionable and widely discussed by HR professionals around the globe. While on the one hand, paid time off is considered a key benefit by employees and unlimited paid time off policies (UPTO) are seen as a major perk which may help in recruiting and retaining talented employees, on the other hand, early adopters reported that employees took less time off than previously, presumably leading to higher burnout rates. In this conceptual review, we discuss the theoretical and empirical evidence regarding the potential effects of UPTO on leave utilization, well-being and performance outcomes. We start out by defining UPTO and placing it in a historical and international perspective. Next, we discuss the key role of leave utilization in translating UPTO into concrete actions. The core of our article constitutes the description of the effects of UPTO and the two pathways through which these effects are assumed to unfold: autonomy need satisfaction and detrimental social processes. We moreover discuss the boundary conditions which facilitate or inhibit the successful utilization of UPTO on individual, team, and organizational level. In reviewing the literature from different fields and integrating existing theories, we arrive at a conceptual model and five propositions, which can guide future research on UPTO. We conclude with a discussion of the theoretical and societal implications of UPTO.

**Keywords:** self-determination theory, freedom, flexibility, organizational policy, autonomy, social exchange theory, holiday, leave

## INTRODUCTION

Recent headlines in major newspapers and online media illustrate that unlimited paid time off policies are currently fashionable and widely discussed by HR professionals around the globe (Reeves, 2021): “Unlimited holiday: The rise of leave without limits,” “Unlimited vacation policy: Why employers should consider it,” “The ugly truth about unlimited holidays,” “Why unlimited vacation days is a scam,” “Unlimited vacation sounds amazing. It can burn workers in the end” and “Four lessons about unlimited vacation.” These examples also showcase the paradoxical effects which have been described

in popular media. On the one hand, paid time off is considered a key benefit by employees (AICPA, 2018) and unlimited paid time off policies (UPTO) are seen as a major perk which may help in recruiting and retaining talented employees. On the other hand, some early adopters reported that employees took less time off than previously, presumably leading to higher burnout rates. Accordingly, HR professionals proposed measures and boundary conditions which may ensure that UPTO unfolds its assumed benefits while preventing any harmful side-effects. However, theoretical reasoning and empirical evidence is missing to show and explain why these measures work. Therefore, we set out to build a theoretical model on UPTO and its underlying processes and formulated propositions to explain if and under which conditions UPTO can benefit or harm individual employees, the team, and the company.

The COVID-19 pandemic and steep rise in remote work sparked even more interest in UPTO and related flexible work arrangements with potentially wide-ranging implications for performance management (e.g., Results Only Work Environments). In this conceptual review, we will synthesize the available theorizing and very scarce empirical evidence to predict the effects of UPTO on employee health, well-being, motivation, and job performance. We developed a conceptual model (Figure 1) that depicts how the effects of UPTO should exert their influence on employees from the theoretical lens of self-determination theory (Ryan and Deci, 2000) and social exchange theory (Homans, 1958; Blau, 1964). Specifically, we propose that UPTO can “unlock the best” and engender feelings of autonomy which in turn lead to favorable outcomes for employees and ultimately the organization. At the same time, UPTO utilization is shaped by negative social processes which may “unleash the beast” and result in harmful outcomes for employees and the organization. Finally, we propose boundary conditions of UPTO which facilitate “unlocking the best” in employees and conditions that may rather “unleash the beast” and harm individual workers, the team, and the organization.

Our manuscript is divided into five sections. Firstly, we define and place UPTO in a historical and international context. Secondly, we focus on leave utilization as a key construct which translates UPTO from a hypothetical option into concrete action (i.e., taking leave). Thirdly, we describe the two parallel processes which we termed “unlocking the best” and “unleashing the beast” which are set in motion simultaneously by making UPTO available. Fourthly, we delineate boundary conditions on individual, team, and organizational level which can affect whether and how UPTO will be utilized and thus the degree to which UPTO has beneficial, neutral or even harmful consequences. Fifthly, we discuss the theoretical and societal implications of UPTO.

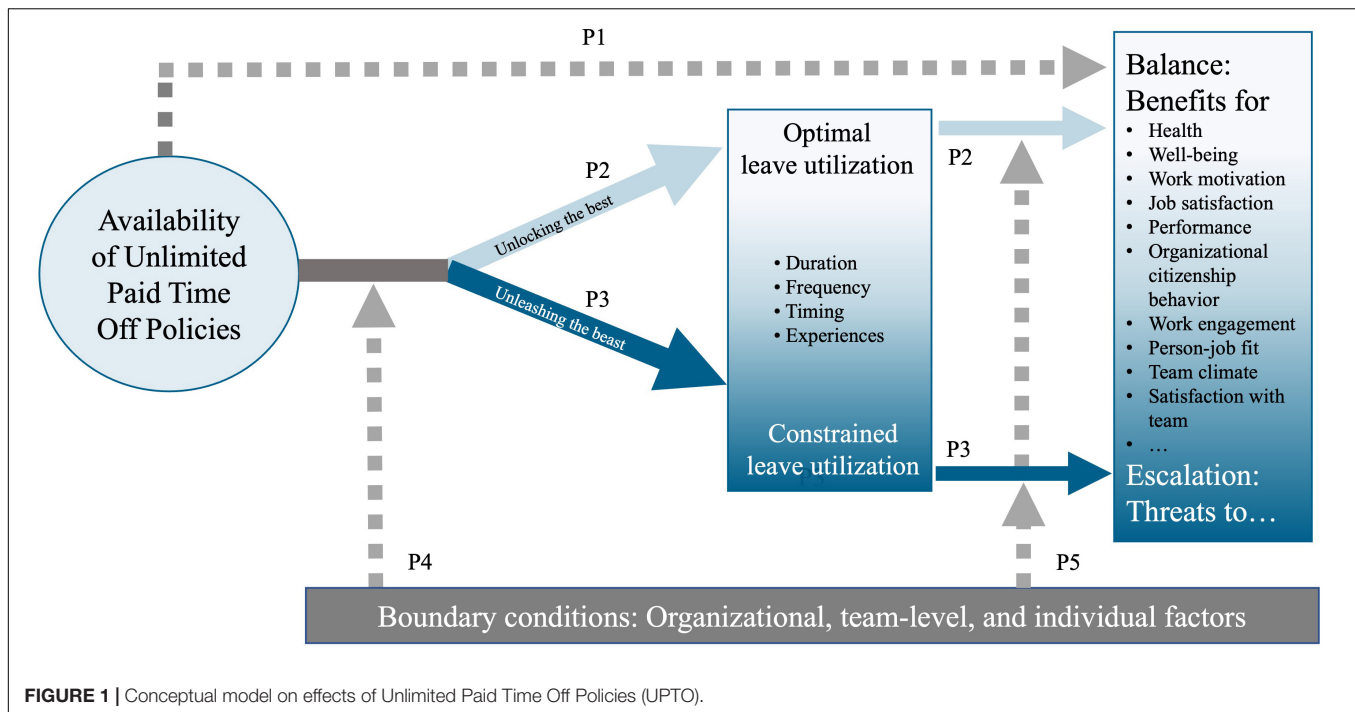
## Work Intensification, Flexibilization, and Leisure Scarcity - A Need for Unlimited Paid Time Off Policies?

How did UPTO become such a hot topic within the field of Human Resource Management? How did managers around

the world come to think that providing workers with an unlimited amount of paid leave might be a good idea? Below, we describe the historical and societal developments which gave rise to UPTO.

A globalized 24/7 economy, automation, digitalization, and technological advancements such as smart mobile Information and Communication Technology devices which enable employees to work anywhere and at any time have led to structural changes in the way work is organized, carried out, and experienced (Green, 2004; Kubicek and Korunka, 2017). In today’s “Industry 4.0” (Schwab, 2017), most employees work in the service industry or conduct knowledge work, requiring them to engage in emotional labor, lifelong learning and efficient task and time management (Jarvis, 2007; Grandey and Melloy, 2017). For many workers, a primary work task is “non-routine” problem solving and job performance is determined by the employee’s ability to acquire, share, and utilize knowledge (Reinhardt et al., 2011). The very concept of work has become flexible, accompanied by a change in the nature of employment relationships such as a proliferation of temporary, project- and platform-based work, and high levels of job insecurity (e.g., Burchell et al., 2002; Rofcanin and Anand, 2020). Spatial and temporal boundaries between work and non-work domains increasingly vanish, even more so after the COVID-19 pandemic hit and people work from home for significant shares of their working time, while work pace and workload increase, leading to the perception of accelerated working lives (Rosa, 2015; Piasna, 2018).

Research on work trends in recent decades has shown that Dumazedier’s (1967) vision of a “leisure society,” characterized by abundant opportunities for relaxation, distraction from work, and personal development, did not materialize hitherto for most workers. In fact, his predicted decreases in individual annual working time have only occurred in certain industries such as manufacturing, whereas increases have occurred in other sectors such as the service industry (for an insightful historical overview of working time developments over the past centuries see Wilensky, 1963). Job demands have even intensified, and people perceive their working days nowadays as intense (Boxall and Macky, 2014; Kubicek and Tement, 2016): Time pressure is high and increasing, and many people feel pushed to work faster and longer to meet deadlines (Baethge et al., 2019). Concerning leisure time, we nowadays witness polarization along demographic and socio-occupational lines. For instance, time-use data from Canada and the Netherlands shows that workload for paid and unpaid workers has risen over the last two decades, while the amount of free time has declined (Zuzanek et al., 1998). Along similar lines, results from the latest European Working Conditions Survey show that 22% of workers report that they work during their free time several times a month to meet work demands (Parent-Thirion et al., 2017) and for many workers, life is characterized by feelings of “time famine” or “time squeeze” (Schor, 1991). Glorieux et al. (2010) identified a significant share of the workforce as the “harried leisure class,” highly educated high-income workers who constantly feel short in time. Accordingly, leisure is increasingly seen as a scarce commodity that needs to be spent in



**FIGURE 1** | Conceptual model on effects of Unlimited Paid Time Off Policies (UPTO).

efficient ways, resulting in phenomena such as “time deepening” (Godbey, 1976).

Furthermore, most modern work happens behind a computer and output became less tangible than before. After the decline of factories and the production of goods in the western world, the need to coordinate the work efforts of large groups of workers via physical presence at the same time and place has steadily decreased. Today, many workers produce services and knowledge, making it more difficult for employers to exert control and closely monitor employees’ work tasks and output. Consequently, the responsibility for the strict regulation of work tasks and working times has - at least partly - shifted back from employers to employees.

These structural changes in working life and the changing nature of work together with the perceived scarcity of leisure time have led to a heightened need and desire to manage one’s work and free time autonomously and preferably to have more leisure. This trend is reflected in (re)newed interest in alternative ways of working and increased opportunities to take time off from work when needed and desired.

As early as in the 1970s, many companies already implemented (more or less) drastic changes toward flexible working times and/or shorter weekly working hours. Yet research on these new types of working has remained scarce, rendering inconclusive evidence (for a summary of early studies see Bird, 2010). Rather than an actual absence of beneficial effects, the ambiguity in these findings may be due to the great variety of working time arrangements under investigation as well as differences in the uptake of these arrangements in practice (i.e., availability versus utilization). Conceptual frameworks

that can guide empirical investigations are urgently needed to investigate the effects of different flexible working time arrangements in depth.

In this manuscript, we focus on UPTO as a concrete, specific, and very timely example of a new working time arrangement. UPTO is not only relevant because it fits the Zeitgeist of modern working life, but also because it is universally applicable to all workers. This also distinguishes UPTO from other types of flexible work arrangements (i.e., flexible working hours, compressed work weeks, reduced work hours and/or flexibility in work location) which workers are allowed to but do not need to use (for a review, see Shifrin and Michel, 2021). Whereas many work-non-work policies are geared at specific workers or life phases workers undergo, when UPTO is introduced, it substitutes all previous, classical leave policies and is thus automatically applicable to all workers.

## The Rise of Unlimited Paid Time Off Policies

In the next sections, we will define UPTO, provide a few concrete examples of UPTO which have been introduced in practice and then move on to briefly describe the historical background of leave legislation as well as an international comparison on leave policies. We deem this overview key to understand the importance of the societal, organizational, and individual context which can affect the utilization of leave.

We define UPTO as unlimited and sporadic paid time off from work during which an employee can be away from work and is not required to conduct any work-related tasks with negotiable boundary conditions such as timing, length, and requirements regarding coordination and performance. The term



“sporadic” is important here, because it distinguishes UPTO from structural adjustments of weekly working hours. Thus, people’s contractually defined weekly working hours remain unchanged, just like the location for working, but employees are provided with the opportunity to take time off from work whenever desired while receiving their full wage. In principle, as indicated by the label of being unlimited, there is no maximum number of days off that can be taken. In practice, many companies still communicate a maximum length of single leave episodes or state that leave can only be taken if approved by the team, supervisor, and/or if workload allows. Therefore, UPTO has often been criticized in the media for not being truly unlimited or even being a scam.

As previously mentioned, UPTO has been widely discussed as a flexible working time arrangement among practitioners in human resource management. In September 2020, an internet search, for instance, yielded more than 88,700 hits for the search term “unlimited paid time off” and 36,700 hits for “open paid time off.” Many human resource managers came to view UPTO as an attractive tool in attracting and managing modern knowledge workers. In several industries, the whole concept of fixed working hours is frowned upon and seen as a relic from times when performance could easily be measured in “minutes on task.” Particularly in the tech industry, HR managers claim that creative and cognitively demanding work requires new ways of working and of measuring a person’s input and output (e.g., Jordan et al., 2022). Therefore, UPTO and abandoning a fixed number of annual leave days resembles the *Zeitgeist* of modern work without temporal or spatial boundaries. In addition, a shortage of workers in the tech industry also forms a strong incentive to create attractive workplaces for employees. In the “war of talent,” UPTO has been portrayed as a means to attract and retain talented employees. Consequently, numerous tech companies such as Netflix, Hubspot, Dropbox, or Kronos have introduced UPTO. As UPTO is not limited to specific types of jobs, companies in other industries have followed soon. In the following section, we provide a brief historical and international overview of paid and unpaid leave which helps us to conceptualize and contextualize UPTO.

## Conceptualizing and Contextualizing Unlimited Paid Time Off Policies

Work and leisure are often portrayed as opposites. In fact, work, defined as purposeful activities requiring mental and/or physical exertion and carried out in the public domain in exchange for wages (Wilson, 1996:23), can be seen as a precondition for the existence of leisure. That is, work and leisure are interdependent. But sometimes work and leisure are even difficult to distinguish, and research finds that people without work do not perceive leisure as such (Wilson, 1996; Ciulla, 2000). Accordingly, leisure scientists have long struggled to define leisure, frequently resulting in somewhat arbitrary or circular definitions of leisure as “time outside work” or simply as the opposite of work (for a discussion of this challenge, see Beatty and Torbert, 2003). Historically, leisure as a concept emerged when the physical space of work moved outside people’s homes. With rising levels of wealth, leisure was initially only a privilege

of the upper classes. With labor movements and unionization of workers during industrialization came greater protection of workers’ rights, including a reduction in weekly working hours. The right to leisure which guarantees free time to everyone was established by the Universal Declaration of Human Rights signed by 48 member states of the United Nations in 1948. In modern times, boundaries between work and leisure have again become blurred and life domains have merged. Due to modern technology, most people carry their work “in their pocket” around the clock, and work-related emails are the first thing people have a look at when opening their eyes in the morning. Work and leisure are no longer seen as antithetical but flow into and complement each other in a dynamic relationship (Beatty and Torbert, 2003). Since the start of the COVID-19 pandemic, work and private life have become even more intermingled: A great share of the working population works from home and structural and physical boundaries between life domains have vanished completely. Thus, legal definitions and legislation on leisure time and rest periods have been implemented to delineate work and leisure and protect worker’s health and well-being.

Across the world, work is regulated by laws which also regulate the right to and timing of rest periods. Paid time off is defined as a pre-defined number of days each year that an employee is allowed to be away from work while still receiving full wage. Legislation in the United States and the EU exemplifies well the extreme differences which exist regarding annual paid time off across the globe. Most industrialized states in the world can be placed somewhere between these two extremes. In the United States, workers do not have the legal right to paid annual leave, treating leave as a perk rather than a worker right (Ray and Schmitt, 2007). Each state in the United States has own labor laws, and in most states, employers can decide whether they grant paid leave to their employees or not. Consequently, 26% of Americans have no access to paid leave (U.S. Bureau of Labor Statistics, 2018) and the United States’ average is only eight vacation days per year. Moreover, the right to leave is also unequally distributed among United States workers favoring high wage, highly educated full-time workers (Ray et al., 2013).

In the European Union, legal rights to at least 4 weeks of paid vacation per year were established in 2003 (DIRECTIVE 2003/88/EC, 2003). EU countries must comply with this directive and EU companies can only grant more, but never less than 4 weeks of leave. Compared to the United States, with no legal statutory right to leave, European companies have a generous leave policy in place (i.e., annual leave plus several special types of leave for life events such as moving, sickness, or death of a family member). Still, many Europeans save up leave days for personal emergencies, leading to unused vacation days at the end of the year (which can only be saved for a limited time), and suboptimal use of the leave granted by the employer. This problem is likely even more prominent in countries where employees do not have the legal right on sick leave, but a fixed amount of leave which is to be used for vacations, sick leave, and personal emergencies. Introducing UPTO might be seen as a solution to this problem, because people no longer feel the need to save days for special circumstances, leading to fewer accrued leave days at the end of the year (which also constitutes a liability for companies), and

better recovered employees. In addition, what should be kept in mind is that while the implementation of UPTO is anchored on an organizational level, the individual availability of UPTO can be perceived very differently by employees. Therefore, we would like to direct attention toward employees' individually perceived availability and accessibility of UPTO when the impact of UPTO is assessed. That is, we suggest that part of how UPTO become effective is driven by the degree to which employees perceive UPTO to be available to them, whether and how they make use of the policy.

## UNLIMITED PAID TIME OFF POLICIES AND LEAVE UTILIZATION

In our conceptual model on UPTO, leave utilization is key in translating UPTO into concrete actions (see **Figure 1**) - first and foremost regularly taking time off when desired and/or needed. Research on working life policies has shown that accessibility of policies is not the same as their utilization (Ford and Locke, 2002; Kirby and Krone, 2002). While the availability of UPTO can indeed have beneficial effects on workers' well-being by providing employees with some "peace of mind" (i.e., the idea that the policy would be available to them in times of need; P1 in **Figure 1**), UPTO should moreover affect well-being, health, and performance once workers actually make use of the policy and utilize the policy optimally. To illustrate this argument with an example: Some human resource managers have described in the media that workers actually took fewer holidays after the introduction of UPTO. It is possible that workers in these companies nevertheless report higher job satisfaction than before they had UPTO, because they feel that they could take time off whenever they like. However, if workers feel happier but do not actually take leave, UPTO cannot lead to profound or lasting benefits. Therefore, it is also essential to focus not only on the outcomes, but also carefully monitor and understand the underlying processes which transform the policy into potential benefits for health, well-being, and performance. Below, we present a short description of how leave utilization might differ between persons, and how these differences may relate to differences in employees' health, well-being, motivation, and performance.

Leave utilization can vary regarding the duration, frequency, and timing of leave periods as well as regarding recovery experiences during leave. Regarding duration and frequency of leave, evidence from research on vacations suggests that longer leaves do not necessarily have stronger or longer lasting effects on health and well-being (De Bloom et al., 2008). For instance, both long weekends (4 days) and 5- or 10-day domestic holidays can significantly improve well-being (Kühnel and Sonnentag, 2011; De Bloom et al., 2012) and even the beneficial effects of 6-month sabbaticals fade soon after returning to work (Davidson et al., 2010). So, the frequency of leaves seems to be somewhat more important than the duration of single leave episodes. Still, both are key indicators of leave utilization. Accordingly, we suggest using both the duration and frequency of taking leave before the introduction of UPTO as a benchmark, as

these indicators provide important information on the impact of UPTO. For example, if the total number of leave days taken decreases, this may be an indication of employees experiencing barriers to taking leave such as pressure to finish work tasks colleagues are depending on (Barber et al., 2019). If under UPTO the same number of free days is taken and greater variance between people emerges in terms of frequency, this could mean that people have increasingly adapted leave to their personal needs.

Some implications regarding leave timing can be drawn from research on breaks at work. For example, research on energy management strategies suggests that breaks are particularly useful in times of low energy and increased distress to prevent further resource depletion (Fritz et al., 2011; Zacher et al., 2014). Thus, especially in times of low energy resources, such as after a busy period at work or after an important deadline, taking leave may be beneficial (e.g., Sonnentag, 2018).

Research on stress and recovery after work has provided evidence on specific aspects in terms of experiences during leave that are beneficial for recovery. Four recovery experiences have been shown to have beneficial effects for employees in terms of well-being: detachment (mentally distancing oneself from work), relaxation (low activation and increased positive affect), control (ability to choose between different activity options), and mastery (challenging experiences and the opportunity to learn new things) (Sonnentag and Fritz, 2007, 2015). In the DRAMMA model, which combines evidence from psychology and leisure sciences (Newman et al., 2014), this list was extended by two additional experiences: meaning (activities that provide a sense of purpose) and affiliation (activities that foster the feeling of relatedness to others). The empirical evidence suggests that leave which fosters these experiences is positively related to optimal functioning, i.e., higher vitality, life satisfaction, subjective health, and lower depressive complaints, need for recovery, tension, and strain (Sonnentag et al., 2017; Kujanpää et al., 2020; Virtanen et al., 2020). We propose that UPTO enables employees to take leave more regularly, spontaneously, and for longer time periods, which should stimulate beneficial recovery experiences. On the basis of the limited research to date, we propose that UPTO implemented so that duration, frequency, and timing of leave periods can be adjusted to individual needs should relate to positive outcomes for employees.

## UNLOCKING THE BEST AND UNLEASHING THE BEAST

In the following sections, we will provide a theoretically and empirically guided overview of the effects of UPTO on employees' health, well-being, work motivation, and performance. **Figure 1** summarizes our conceptual model, and shows that we aim to describe the effects of UPTO as a function of releasing the beneficial potential of autonomy and setting in motion social processes, which we refer to as "unlocking the best" and "unleashing the beast," grounded in self-determination theory (Ryan and Deci, 2000) and social exchange theory (Homans,

1958; Blau, 1964), respectively. Our model aligns with and can explain “paradoxes” that regard autonomy (Mazmanian et al., 2013) and flexible work arrangements (Cañibano, 2019), showing that well-intended policies can also result in (unintended) negative outcomes for employee and employer.

Our model illustrates that with the introduction of UPTO, two processes are likely to be evoked simultaneously. The first process, which we call *unlocking the best*, describes the most likely intended beneficial effects of UPTO: Employees are given autonomy over their leave, which should lead to beneficial outcomes. The second process, which we call *unleashing the beast*, illustrates the paradoxical situation in which well-intended policies may turn into unwanted outcomes. Employees are granted autonomy over their leave, but detrimental social processes are activated (such as normative pressure within a work group, informal expectations about taking leave), which corrupt the idea of autonomy and turn the freedom of taking leave into an obligation of not taking (too much) leave.

The first process, unlocking the best, is grounded in self-determination theory (Ryan and Deci, 2000), which states that autonomy is a key ingredient for a fulfilled life. Satisfaction of people’s innate need for autonomy leads to higher work engagement, better health, well-being, work motivation, and performance. The second process - unleashing the beast - is based on social exchange theory (Homans, 1958; Blau, 1964), which highlights that under UPTO, taking leave constitutes a process that is heavily shaped by social interactions. These social processes can curtail the intended individual freedom into social obligations associated with an atmosphere of guilt, excessive responsibility for organizational or team goals and consequently harmful effects for employees, such as poorer health, well-being, work motivation, and performance. It is important to note that we propose that both processes are at play simultaneously, and that individual-level, team-level, and organizational factors will determine which process will prevail (see boundary conditions described below).

We propose that the processes we term “unlocking the best” and “unleashing the beast” are partly mediated by *leave utilization*. Regarding the assumed positive pathway, availability of UPTO may lead to beneficial outcomes directly (P1) and by enabling workers to adjust their leave utilization to their personal needs which in turn liberates psychological resources and positive emotions, resulting in greater well-being and energetic resources (P2). On the other hand, detrimental social processes may restrict leave utilization, and, for instance, inhibit optimal timing of leave by putting teams’ work goals before individuals’ recovery goals. This can drain people’s energetic resources and in the long-term lead to feelings of exhaustion (P3). We will describe these processes in greater detail below.

In the outcome part of our conceptual model on the right, we describe potential outcomes of availability of UPTO. Positive effects resulting from UPTO are reflected in a balance between individual and organizational needs such as higher job satisfaction, well-being, and work engagement, a better work-non-work balance, as well as more organizational citizenship behaviors. Negative effects resulting from UPTO are reflected in an imbalance between individual and organizational

needs, which is likely to result in short-term higher work engagement and job satisfaction but also in long working hours, more working during leisure time, rumination about work after office hours, and higher work-non-work conflicts. In the long term, negative effects may prevail as temporary strain reactions cannot be reversed and people must perform while still feeling tired (Meijman and Mulder, 1998). This process further drains emotional and cognitive resources and depletes personal energy, ultimately leading to serious threats to well-being, health problems such as burnout, sleeping problems, anxiety, or depression. In the next section, we describe both processes of our conceptual model in detail and present preliminary findings from research supporting our propositions.

## Unlocking the Best

Autonomy regarding leave is seen as a key element of healthy work and attractive jobs. In representative surveys across industrialized nations, shorter working hours and extended amounts of free time are increasingly seen as desirable. When asked whether employees would prefer higher salaries or more vacation days, the majority of workers vote for more leisure (e.g., AICPA, 2018; Ver.di, 2019), mirroring the shift in priorities from consumption of physical goods toward services and experiences (Pine and Gilmore, 1998). Therefore, UPTO enabling employees to take agency over their work time, is also often communicated as an asset to attract and retain talented employees (Hill et al., 2008).

Job autonomy, defined as “the degree to which the job provides substantial freedom, independence, and discretion to the employee in scheduling the work and in determining the procedures to be used in carrying it out” (Hackman and Oldham, 1976: 162), is considered the core mechanism which can bring about the positive effects of UPTO. Job autonomy has been shown to be an essential ingredient for work-related well-being and performance. It helps employees to achieve goals at work, and can facilitate personal growth (e.g., Hackman and Oldham, 1976; Spector, 1986). Indeed, major theories in the field of work psychology have something to say about autonomy, and also outside the work context, autonomy is seen as a basic human need and its satisfaction as a key mechanism helping people to thrive and flourish in life (Deci and Ryan, 2008). Thus, the relationship between job autonomy and well-being of employees is explained by the satisfaction of autonomy as a basic human need.

In abandoning the use of a fixed amount of leave, companies aim to establish a culture of psychological ownership. Just like self-employed entrepreneurs, employees are considered capable of managing their work tasks and striking an optimal balance between the needs of the company and their personal needs. UPTO may signal trust of the company in employees, may empower them, reaffirm their status and sense of self as accomplished professionals trusted to make responsible use of UPTO. This could benefit both the employees and the company. Studies have indeed shown that providing employees with higher levels of autonomy makes them feel accountable and more committed to their work (e.g., Spector, 1986). This in turn positively affects organizational outcomes such as greater



financial returns, customer satisfaction, productivity, lower employee turnover, and fewer accidents (Harter et al., 2002). In conclusion, we expect that UPTO leads to benefits for employees (e.g., greater well-being, work engagement), because it fosters satisfaction of autonomy as a basic human need, as proposed in self-determination theory (Deci and Ryan, 2008). This leads to our first proposition:

- P1: Availability of UPTO provides the satisfaction of autonomy as a basic human need and therefore can directly lead to benefits for employees such as greater well-being and work engagement.

Furthermore, we assume that the relationship between availability of UPTO and beneficial outcomes is also partly mediated by leave utilization. Control over the timing and duration of leave enables employees to align their work better with their personal needs and experience a better balance between work and non-work life. According to recovery research, job control regarding the timing of recovery episodes is important for optimal well-being (Sonnetag et al., 2017). As the job demands people experience vary across time, depending on the job tasks they must perform, their need for recovery also varies (Sonnetag and Zijlstra, 2006). Moreover, individual characteristics (e.g., stress resilience, personality traits such as neuroticism, hardiness, and resilience) may determine employees' optimal workload and need for recovery (Sonnetag et al., 2010; Kraaijeveld et al., 2014). Employers introducing UPTO assume that employees can recognize if and when they need to recover and act accordingly by taking time off. UPTO could foster the optimal timing and duration of taking leave based on personal preferences, work characteristics, and person characteristics. For example, during the current COVID-19 pandemic UPTO could help employees by allowing them to take leave to adjust to burdens associated with the pandemic (e.g., childcare, homeschooling). Enabling people to take time off from work whenever needed may provide them with a means to optimize their personally preferred patterns of effort and recovery.

Leave from work, as a prolonged episode of recovery from work and mental disengagement from work, enables employees' psychobiological systems to return to baseline levels and reestablish full working capacities and well-being (Meijman and Mulder, 1998; Sonnetag and Fritz, 2015). Numerous empirical studies in occupational health psychology have indeed shown that recovered workers are healthier, more committed to their work, and perform better (e.g., De Bloom et al., 2008; Binnewies et al., 2010; Kühnel et al., 2017). Autonomy in taking leave according to one's personal needs might also foster the leave experiences of psychological detachment and control. For example, adjusting the start of a vacation to an unexpected pressing deadline reduces the number of unfinished tasks when finally start their vacation. Leaving behind a "clean desk" is beneficial in terms of mentally distancing oneself from work (Syrek et al., 2017), and reduces work-related rumination. Additionally, autonomy to take leave when desired heightens control over free time and vacation activities. For

instance, UPTO may help employees to take leave when the weather is nice or an important event takes place and supports engagement in personally meaningful hobbies (e.g., sailing or running a Marathon). Thus, UPTO offers higher control in the choice of activities during leave days and thereby improves the quality of leave experiences. This leads to our second proposition:

- P2: Beneficial outcomes of UPTO are partly explained by optimal utilization of leave. Specifically, we propose that availability of UPTO enables employees to adjust their leave to their personal needs, resulting in optimal duration, timing, and frequency of leave days as well as better leave experiences. This in turn leads to beneficial well-being and performance outcomes.

## Unleashing the Beast

Contrary to the proposed direct link between availability of UPTO and beneficial outcomes, we do not propose a direct link between availability of UPTO and negative outcomes. That is, we consider it unlikely that the mere availability of UPTO can deteriorate employee well-being or performance. Even though there is some research showing that work-family policies can be perceived unfair by people who do not have children and therefore do not make use of certain policies (called the "family-friendly backlash;" Parker and Allen, 2001), UPTO is not restricted, specifically tailored to or particularly relevant to certain groups of workers. Instead, we assume that potential negative effects of UPTO unfold via suboptimal leave utilization. We explain this process via social exchange theory (Homans, 1958; Blau, 1964).

Following social exchange theory (Homans, 1958; Blau, 1964), UPTO can be seen as an inducement of the company which requires a contribution to the company from the employees' side, i.e., UPTO may create a social obligation toward the employer. Taking advantage of UPTO may thus lead to a feeling of obligation or even guilt toward the employer. In return for UPTO and the freedom it supposedly provides, the organization can expect the employee to be an ideal worker (Putnam et al., 2014). Following Kelliher and Anderson's (2010) and Cañibano's (2019) argumentation, we suggest that UPTO becomes a part of a psychological contract between the employees and the employer, and entails certain tacit expectations regarding the appropriate leave behavior under UPTO. People's vision of an ideal worker is thereby shaped by their professional and workplace norms (Wieland, 2010), and empirical evidence suggests that this often means working overtime and making sacrifices for the employer. For instance, research on flexible work arrangements and technology which enables workers to work more flexibly, has shown that people often tend to put in more hours, experience more conflicts between work and private life (Peters et al., 2009), and perceive work as intensified (Kelliher and Anderson, 2010; Mazmanian et al., 2013). Individuals may internalize organizational goals, which promotes overcommitment or self-endangering behaviors (Peters, 2001; Deci et al., 2016) and that limit employees' leisure time at the expense of the



company. According to Deci et al. (2016) these behaviors include prolonging working hours, intensifying working hours, using substances for recuperation, taking stimulants, working despite illness, lowering the quality of work, and failing to observe safety standards. These behaviors tend to occur due to high work demands and interestingly are particularly common in workplaces with high levels of autonomy (Baeriswyl et al., 2014). Self-endangering work behaviors also go hand in hand with health problems seriously impaired recovery from work-related stress (Deci et al., 2016).

In the absence of formal rules on leave and without a specification of an exact number of leave days per year, workers may be inclined to exercise greater levels of control over others, leading to “concertive control” (Barker, 1993; Ter Hoeven et al., 2017). Concertive control is characterized by strong identification with the team and/or the organization, strict informal rules and norms within teams, and punishment and reward exercised by the team. For instance, research has shown that self-managing teams which are granted more autonomy increase their control over individual team members (Barley and Kunda, 1992; Ezzamel and Willmott, 1998; Sewell, 1998). An endless number of vacation days means that employees have no guidance on how much leave is appropriate. When no formal rules exist, employees will look for informal rules communicated by their supervisor or team members. Normative pressures within teams can induce an employee to conform to the team’s values and courses of action. Consequently, employees are likely to imitate their peers’ behaviors, because these behaviors signal the norms deemed appropriate (Gino et al., 2009). Descriptive norms (what is actually happening at the workplace) have a stronger effect on behavior than injunctive norms (what ought to be happening at the workplace), even when the descriptive norm does not align with the injunctive norm (Kallgren et al., 2000). In popular media, this process has been described and companies with a “No vacation policy” have been criticized for disregarding this effect. Under UPTO, employees can take as much time off as they wish (injunctive norm), but the number of days that will ultimately be taken depends on what other team members do (descriptive norm). Depending on the company culture, the team culture and the personality of the supervisor, wide differences between people and teams may emerge in terms of the utilization of UPTO. This could contribute to a work environment where the utilization of UPTO is discouraged (see also McDonald et al., 2005).

In a similar line of argumentation, it could be argued that leave is owned by an individual worker under standard (non-unlimited) leave policies. In most companies, additional leave hours can be bought, and excess leave hours can be exchanged for extra salary. Workers leaving an organization usually need to be paid out all unused leave hours. But under UPTO, leave becomes a shared good. If one worker takes more leave, this may imply less leave for another. Under UPTO, a worker can no longer compensate the company and/or their team for additional leave taken by giving up some salary. This means that they are at the mercy of their colleagues and supervisors for granting them additional free time at the expense of the group. Under UPTO, leave changes from an individual trading good into a collective good.

Finally, we would like to zoom in on the paradoxical role of autonomy. In her essay on what she calls the “performance society,” Lynn Berger (2020) refers to the downside of autonomy as the “perversion of freedom.” Referring to philosopher Han’s (2015) essay on the “burnout society,” Berger states that the shift from external control of work through an employer to the employee leads to an ever-increasing need for self-optimization. External prohibition, command, and regulation at work are increasingly replaced by internal initiative, motivation, and self-discipline. As this discipline comes from the inside rather than from an external force, resistance is impossible, resulting in self-exploitation. This exploitation of the self is more efficient than exploitation by an external force because it is actually perceived as freedom. The exploiting and exploited become one.

Regarding leave utilization these detrimental social processes imply that fewer vacation days may be taken than under policies with a fixed number of vacation days per year. Several companies which had introduced UPTO canceled the policies because they could indeed see this happening (e.g., Gateley, 2018; Sweeney, 2019). This phenomenon bears a strong resemblance to what has been described as “leavism.” Leavism refers to employees’ tendency to take leave when they are actually sick or unable to complete their work in time (Hesketh and Cooper, 2014). Under UPTO, some employees may take leave, but actually just work from home to save commuting time, run errands or take care of family obligations during the working day. A change toward mainly shorter leaves and a decrease of longer leaves would be indicative of people not feeling free to make optimal use of UPTO.

Interestingly, evidence from breaks at work shows that employees have difficulties in recognizing their need for recovery and tend not to take breaks if they have the autonomy over taking breaks (Henning et al., 1989). Sonnentag (2018) coined the term “recovery paradox” to describe the empirical finding that recovery processes are particularly impaired when they are needed most, that is, when employees face high job stressors. Under UPTO, employees may similarly fail to initiate leave days when their self-regulatory resources diminish, and initial signs of distress occur. This process could be further amplified by organizational structures that couple high autonomy with high work demands and responsibility to meet these demands.

Teams may also struggle to jointly decide who is granted what amount of leave. Team members are often dependent on each other’s work and a day off for one team member can mean additional work for another. Negotiating an optimal balance between team members can be tough and carry the potential for conflict. Even when teams may jointly arrive at an agreement on how many days off each employee is granted, some employees may need more days due to personal circumstances or desires (e.g., family emergencies, need for recovery, traveling the world). It may be challenging to argue for this within a team while keeping a fair distribution of leave among team members, i.e., the same amount of leave for all. To be granted permission to get more days off than their team members, employees may feel forced to disclose information about their personal circumstances requiring them to take time off. Leave turns from a right into a dispensation from the company, controlled by the team and/or

supervisor. This means, compared to fixed leave policies, under UPTO, employees may be controlled more by workplace norms, and their own view of the ideal worker which affects leave utilization and the content of leave experiences. Being granted leave by the team may be associated with feelings of guilt for leaving the colleagues to deal with stressful situations or feeling obliged to make up for taking leave when back at the workplace. Thus, UPTO can lead to ruminating or worrying about work during the vacation and reduce mental detachment. Additionally, leave may only be taken if the moment is right for the team, which reduces the options regarding leave activities (which may depend on the time of the year, and therefore reduces control over leave activities). This leads to our third proposition:

- P3: Negative outcomes under UPTO are partly explained by constrained utilization of leave. Specifically, we suggest that detrimental social processes hinder employees from adjusting leave to their personal needs resulting in not recognizing or ignoring the need to take a leave and suboptimal leave duration, frequency, timing, and leave experiences.

## BOUNDARY CONDITIONS THAT MAY SHAPE THE EFFECTS OF UNLIMITED PAID TIME OFF POLICIES

Below, we provide an overview of boundary conditions which support or hinder optimal utilization of UPTO and boundary conditions which affect the pathway from leave utilization to outcomes. We emphasize that these factors merely serve as examples in the broad spectrum of potentially relevant boundary conditions.

### Individual Level

We will discuss three individual factors that affect whether and how leave is utilized and translated into beneficial outcomes. Firstly, studies show that women generally utilize flexible work policies and vacation leave more intensely than men (Maume, 2006). According to Maume (2006), this difference is partly explained by traditional expressions of work-family priorities in which men take fewer leaves because they are more concerned about job security and coordination issues at work whereas women are more concerned about their families. Rather than a true gender effect, the differences found may thus be explained by work centrality. Work centrality refers to the importance a person assigns to working in comparison to other life domains such as leisure, family or religion (Paullay et al., 1994). People who view work as central to their identity are likely to utilize leave to a smaller extent (i.e., shorter and less frequent leaves) than people who have a more balanced identity, including other life domains and roles as well.

Secondly, we propose that people with a high need for segmentation between life domains make relatively little use of flexibility in time or place compared to people with a low need for segmentation (Shockley and Allen, 2010). We propose that people with a high (vs. low) need for segmentation may use

UPTO to the same extent, but for different purposes and thus with different consequences. People with a strong segmentation preference may more likely use UPTO as a recovery opportunity, because they have strong boundaries between work and non-work domains. These well-established boundaries ensure that when they take leave, they will not engage in work-related activities during their non-work time. People with a low need for segmentation, however, are at greater risk of using UPTO to engage in what we have introduced as “leavism” above. They will more likely continue to work during their leave, and they may even take leave in times of high workload just to tend to their work from home and schedule their time more efficiently (e.g., by saving travel time).

Thirdly, personality traits such as neuroticism or openness may influence both an employee's need for recovery from job stress and their desire to travel to discover new places and meet new people, respectively, and thus whether available UPTO will be utilized. Recovery-related self-efficacy may determine whether workers benefit from taking time off. Recovery-related self-efficacy refers to “an individual's expectation of being able to benefit from recovery time and recovery opportunities” (Sonnentag and Krueger, 2006: 202). It is an important predictor of recovery from job stress (e.g., Park and Lee, 2015; Park and Kim, 2019). Accordingly, we propose that people who lack recovery-related self-efficacy will less likely and less extensively make use of UPTO. In addition, employees with higher recovery-related self-efficacy may benefit more from taking leave than people with lower recovery-related self-efficacy.

### Team Level

Group level processes play an important role in UPTO utilization. Decisions on leave are often shifted from supervisors to the team level. This means, depending on the workload, personal preferences, and considerations of fairness, teams might decide jointly who can take time off from work, when, and for how long. Some teams may establish rules in which the whole team needs to approve the plans of each team member whereas other teams shift this responsibility to their team leader. Factors such as team maturity (i.e., how long does a team work together), diversity and location (i.e., remote or on-site) may either simplify or complicate the process of establishing norms within a team and having constructive discussions on how to organize leave-taking within a team.

While UPTO might at first sight seem more suitable for knowledge workers, there are several companies around the world that have introduced UPTO even though their workers' performance and output depends on physical presence. For instance, to cure patients or ensure satisfied call center clients, a team needs to collaborate to achieve their joint goal(s). Occupation rate (i.e., services are provided to clients/patients around the clock) is key in this endeavor. This means that employees need to negotiate the timing and duration of their leave with their colleagues. This is actually true for any kind of leave policy. Consequently, an employee can only take off if another employee covers their shift. As workers are more dependent on each other to achieve their work goals and perform well, the social exchange process is key.

Overall, such processes can potentially result in conflicts within the team and between the team and the supervisor. Technical tools and expertise that would help teams to reliably predict workload and occupation rates required to handle the workload on specific days or times of the year might be beneficial in order to prevent team conflicts under UPTO.

An important factor in determining whether individual employees can take leave relates to structural interdependence. According to Courtright et al. (2015), interdependence includes both task and outcome interdependence, meaning that team members depend on one another for access to critical resources and coordinated action in order to establish well-functioning workflows. Moreover, performance expectations, goals, feedback, and rewards are often on the team level. Consequently, individual team members may feel high levels of responsibility in making sure that their team achieves common goals and completes projects in time. This may restrict the freedom of individual team members to take leave and withdraw temporarily from investing in the team's shared goals. The stronger the interdependence of a team, the lower utilization of leave is expected to be.

A related construct with similar effects is team identity. Team identity is defined as a bond (personal, cognitive, emotional, and behavioral) between an individual and their team (Henry et al., 1999) and represents the extent to which an individual perceives oneness with their team (Ashforth and Mael, 1989). Research has shown that people with a strong team identity are inclined to follow and invoke team norms (Somech et al., 2009). It is likely that people who identify strongly with their team and the team's shared goals will be less inclined to utilize UPTO for their personal benefit as this may harm the team's goals of achieving certain work tasks within a specific time frame. The opposite effect may occur in teams with a strong "recovery culture" (Sonnentag et al., 2021), i.e., teams with a shared awareness that recovery is important and valuable. These teams may encourage and enable each other to take leave whenever needed.

## Organizational Level

Organizational factors also affect how employees utilize UPTO. We will describe three important factors: organizational culture, leadership, and workload. Firstly, based on Cameron and Quinn's (2006) framework, a clan culture defined as an environment promoting caring for the individual worker and positive relationships, can be expected to foster optimal leave utilization compared to a market culture, which stimulates within-group competition rather than cooperation. Empirical support of this argument has been reported by Timms et al. (2015) who have demonstrated that a non-supportive organizational culture (i.e., expectations that employees work long hours and that careers will be negatively impacted if employees make use of flexible work arrangements) is related to non-use of flexible work arrangements. Similarly, Peetz and Allan (2005) found that flextime can lead to a long hour working culture.

Secondly, leadership plays a crucial role in discouraging or encouraging utilization of UPTO, either by directly communicating expectations or by acting as role models.

We expect that both empowering and transformational leadership which provide subordinates with individualized consideration and intellectual stimulation support subordinates in terms of leave utilization, whereas transactional leadership focusing on compliance by subordinates through both rewards and punishments may create an environment that restrict that subordinates' use UPTO according to their personal needs. Research has shown that a market culture and transactional leadership are associated with "obsessive passion," defined as a rigid persistence in work activities and an uncontrollable urge to work hard, resulting in long working hours and conflicts in other life domains (Vallerand, 2010). This closely resembles what we have described as self-endangering work behaviors and overcommitment.

Research has also shown that workers tend to recognize their supervisors' orientation toward health (Franke et al., 2014) and, for example, imitate their supervisors' behaviors in terms of segmentation between life domains (Koch and Binnewies, 2015). Communication by supervisors about policies shapes what Ter Hoeven et al. (2017) refer to as "acquired rules." These rules are defined as beliefs which guide employees' decisions regarding the use or non-use of work-life policies. That means, supervisors serve as important role models which will shape the utilization of UPTO in their subordinates.

Thirdly, high workload, urgency and frequent, tight deadlines are very decisive as to if and how UPTOs are used. Research has also shown that individuals with longer tenure in the organization, supervisory responsibilities, and with coworkers who utilize flexible work are more likely to utilize flexible work policies than are workers without tenure, supervisory responsibilities, and who do not perceive their workgroup as using the newly acquired flexibility (Lambert et al., 2008). This suggests that workers need to feel secure and perceive the organizational culture as being supportive of flexible work policies in order to actually make use of such policies. Transparency about rules within the company can guide employees in establishing the right amount of leave for them.

Fourthly, another important element on the organizational level is a system to monitor leave. While it may seem tempting for companies to abandon all rules and simplify leave registration, a registry is essential to monitor and intervene, particularly if employees take too little leave. In the European context, it is also important to note that the law requires a minimum number of leave days to be taken every year. Therefore, companies have the legal duty to record leave and prove that they adhere to the legal guidelines. Moreover, such a registration system can also help teams to coordinate their work tasks and occupation rates.

This argumentation for individual, team-level, and organizational factors above leads to the following propositions:

- P4: Individual, team-level, and organizational factors affect whether and how UPTO is utilized. For example, on individual-level, employees with high work centrality may take fewer leave days than employees with a lower work centrality. On team level, teams with a supportive recovery culture may stimulate their team members to take more regular/longer

leave. On organizational level, software systems which help workers to predict workload and required occupation rates on the work floor can help workers to coordinate their leave periods and take time off when needed and possible.

- P5: Individual, team-level, and organizational factors affect the relationship between leave utilization and outcomes. For example, on individual level, employees with a high recovery-related self-efficacy may benefit more from taking leave than employees with lower recovery-related self-efficacy. On team level, team members with high interdependency may shame colleagues for taking leave during a busy period at work, thereby offsetting the beneficial effects of leave taking. On organizational level, high workload, and tight deadlines right after holiday periods may prevent beneficial vacation effects to translate into lasting well-being and performance benefits.

## DISCUSSION

In this conceptual review, we focus on the newly emerging HR policy of UPTO. Building on and extending earlier work on the paradox of autonomy (Mazmanian et al., 2013) and flexible work (Cañibano, 2019) and integrating self-determination and social exchange theory, we have developed a conceptual model and five propositions on the effects of UPTO leading to benefits or threats for worker's well-being, health, and performance. We propose the effect of availability of UPTO unfolds via two simultaneously occurring processes which either release the benefits of autonomy resulting in higher well-being, motivation, and performance, or trigger detrimental social process which limit leave utilization and with negative long-term consequences for individuals, teams, and the organization. Central in our model is the utilization of UPTO which translates sheer availability of UPTO into consequences. Finally, we propose that several boundary conditions at individual, team, and organizational level are at play that either foster or inhibit the optimal utilization of leave in terms of leave frequency, duration, timing, and experiences, and that shape whether workers benefit from utilization of leave. In developing our model, we draw on earlier research findings on autonomy and flexible work scattered across various disciplines and integrate them in a coherent framework with the help of two major theories: self-determination theory (Ryan and Deci, 2000) and social exchange theory (Homans, 1958; Blau, 1964). Below, we elaborate on the theoretical implications of our work and reflect on the wider societal implications of UPTO.

### Theoretical Implications: Potential Extension of Motivation Theories

Self-determination theory forms one of the two core elements of our model, suggesting that UPTO enables employees to satisfy their need for autonomy which in turn should directly lead to optimal functioning. However, self-determination as a theory focuses on the individual worker and cannot fully explain the “unleashing the beast” part of our model, which relates to social exchange theories. More importantly, we believe that self-determination theory does not sufficiently capture

situations in which people are both intrinsically motivated (i.e., voluntarily participate in work activities out of enjoyment), *and* work due to external pressures such as described in the “unleashing the beast” part of our model. In line with Berger's reasoning on the “perversion of freedom,” internalized pressures for self-optimization and self-exploitation, and the “emergent theory of neoclassical calling” (Bunderson and Thompson, 2009), we speculate that self-determination theory may be further developed to include what we would call “escalated motivation.” Escalated motivation could account for the short-term adaptive (e.g., “walking the extra mile” for the company, high work engagement) and long-term non-adaptive outcomes of autonomy (e.g., long working hours, burnout) and may represent a unique combination of intrinsic motivation and introjected regulation. We think that such an adaptation would fit the context of modern working life in which external control by the organization is often replaced by internal control. Building on Michel Foucault's analyses of neoliberalism, Casalini (2019) describes basically the same phenomenon of self-exploitation when stating “The neoliberal individual is invited to think of himself or herself as free, but in fact is dependent on the imperatives of the neoliberal social environment” (p. 136). In combination with the increasing pressure to enjoy work and experience one's job as meaningful (Berkelaar and Buzzanell, 2014; Graeber, 2018), this new type of “escalated motivation” may also explain rising levels of burnout (Aumayr-Pintar et al., 2018; Gallup, 2019). Thus, a combined consideration of the benefits of autonomy and possible corruptions of these effects due to negative interfering social processes, might provide a theoretical lens that explains paradoxical effects of flexible work arrangements in modern working environments.

Regarding the detrimental social process of UPTO, we have mainly focused on situations in which employees are too committed to the organization and invest (too) much effort in their work. But in fact, the opposite can happen, too. That is, if an employee feels exploited by the organization, they may reduce their input to the organization. As an example, an employee may make more use of UPTO after having learned that they did not get the expected promotion and associated pay rise. This may re-establish a perceived effort-reward imbalance, but obviously has direct harmful consequences for the organization (Siegrist, 2002; Van Vegchel et al., 2005). It is also interesting to note that this abuse of UPTO is an often-raised fear in the media.<sup>1</sup> And who would keep working anyways if you do not need to, but could be on holidays year-round? This question taps into our ideas on human nature and the nature of work. And there is an answer derived from studies on the universal basic income and research on hypothetical and actual lottery winners. These studies show that around two-thirds of people would keep working even if they would not need a salary to make a living (for an overview and summary of these studies, see Hüffmeier and Zacher, 2021).

Relatedly, we have not considered positive social exchange processes in our model. However, it is also possible that availability of UPTO leads team members to feel trust and

<sup>1</sup><https://www.foxbusiness.com/small-business/what-to-do-when-your-employees-abuse-your-unlimited-vacation-policy>



gratitude toward each other, which in turn may lead to beneficial team-level outcomes such as a positive team climate. Accordingly, social processes may also complement the “unlocking the best” process occurring at the individual level.

## Societal Implications: Unlimited Paid Time Off as a Modern Form of Piecework?

Unlimited paid time off in its most liberal form means complete freedom to take time off whenever desired. Employees could drastically reduce their weekly working hours or decide to work only a couple of weeks per month or a few months per year. As long as their work gets done, employers should in principle accept this utilization of UPTO. When UPTO is taken to this extreme (which in practice rarely happens), it implies maximum flexibilization of working times. In fact, it would mean totally abandoning fixed working times. There has been already heightened interest in flexible working arrangements regarding *when* and *where* work is done (e.g., Putnam et al., 2014; Rofcanin and Anand, 2020). UPTO implies that employees could even decide *if* they work at all. Consequently, employers would need to implement management practices to ensure that the job gets done at the point in time they want it done. Most of the companies that have implemented UPTO thus far do indeed have management systems in place which are clearly based on output. That is, these companies often have HR practices such as management by objectives with clearly formulated organizational goals and systems in which supervisor and employee jointly set measurable objectives, progress toward these objectives is closely monitored, and attainment of the objectives within a pre-set time frame is evaluated and rewarded.

We assert that working under UPTO in this extreme (and hypothetical form) may be comparable to piecework in which employees get paid a fixed piece rate for an action performed or product completed, irrespective of the time they worked on it. In modern work, the “piece” would be attaining a pre-defined objective such as a project completed, a product delivered, or a deal signed with a new client. If working hours and physical presence at the workplace no longer serve as a criterion for productivity, employment contracts may drastically change or may become obsolete. Consequently, work arrangements may increasingly become non-standard “gigs” (Gandini, 2018). Under UPTO, employees may increasingly become or made into entrepreneurs or freelancers.

## Unlimited Paid Time Off Policies as a Process Evolving and Changing Over Time

Last but not least, we would like to mention that the introduction of new HR policies is a dynamic process unfolding across various levels within the organization. For instance, when investigating UPTO, it would be important to compare employees with and without UPTO (between-person comparison) and employees before and after UPTO introduction (within-person comparison). Between persons, higher variance in

leave duration and frequency in the group with UPTO compared to a group with regular leave schemes would be indicative of higher autonomy under UPTO and the path of “unlocking the best” in our model. Comparing the time before and after UPTO introduction in the same persons, stability in the number of leave days taken and increasing variance in leave frequency would suggest that UPTO helps employees to adjust their leave to individual needs and preferences.

Following Van Mierlo et al. (2018), the introduction of a new HRM policy like UPTO can be seen as a process that evolves and changes over time. Newly introduced HRM practices change the behavior of various actors at the workplace. This in turn affects how these practices play out and affect these different actors. Subsequently, this may lead policymakers and HRM managers to adapt the rules or introduce new policies and the process starts over again. This means that UPTO might be best represented and investigated within a multilevel framework. For instance, it is likely that individual-level relationships (e.g., positive relationship between autonomy and benefits of UPTO) are dependent both on team-level constructs (e.g., pressure to succumb to team norms) and individual-level constructs (e.g., being jealous of other team members' leave taking). UPTO is also expected to evolve over time when the context changes and employees experiment with UPTO, experience how it influences their well-being, job performance, and private lives and adapt the way they utilize it. The ongoing pandemic and rise in telework may further speed up the process of companies introducing flexible work policies and potentially also UPTO.

## CONCLUSION

When work and free time become increasingly intertwined, leisure may become work and work may become leisure. For instance, leisure has been defined as an “experiential quality of one's time when one engages voluntarily and intentionally in awareness-expanding inquiry” (Beatty and Torbert, 2003: 239). In business life, countless variations exist of the saying that you will not work a day in your life if you choose a job you love. Both views fall short of capturing the essence of the struggle modern workers undergo. While the first view seems to suggest that work as counterpart to leisure is characterized by activities which are neither voluntary nor enjoyable, the second disregards work which is undertaken to earn a living rather than for fun or to achieve a greater purpose in life. The upcoming years will show how employers and employees will negotiate, arrange and manage work and non-work life domains and how new trends in work arrangements such as UPTO and telework will affect the process of striking a balance between closely interconnected life domains.

In this conceptual review, we studied UPTO as an example of flexible work policies which can benefit or harm individual workers and the organization, depending on the boundary conditions which facilitate or hinder utilization of the freedom which these policies supposedly create. Whilst UPTO can increase employees' feeling of control, accountability, and

work engagement, it could also lead to self-endangering work behaviors, long working hours, and exhaustion. We therefore sketch two competing processes and boundary conditions. One process that builds on self-determination theory captures “balance” (“unlocking the best”) in which UPTO allows employees to shape their work-non-work balance because of the autonomy that such policy gives them, and the positive benefits associated therewith. The second process that is grounded in social exchange theory reflects “escalation” (“unleashing the beast”), because UPTO may spark detrimental social processes which constrain leave utilization and arouse feelings of uncertainty and guilt concerning the required completion of work. In addition, absence of formal rules may lead to newly emerging informal rules which are not communicated and increase social conflicts. We think that empirical research is indispensable to reveal how UPTO can be implemented so as to benefit both employers and employees. We hope that our propositions can guide research on this important emerging policy.

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## AUTHOR CONTRIBUTIONS

JB, CS, JK, and TV-H were involved in conceptualizing the review, collecting and reviewing the available literature, developing the manuscript, contributed to the article, and approved the submitted version.

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# The Relationship Between Feedback Quality, Perceived Organizational Support, and Sense of Belongingness Among Conscientious Teleworkers

Yanyan Liu<sup>1</sup>, Nan Xu<sup>2\*</sup>, Qinghong Yuan<sup>1</sup>, Zhaoyan Liu<sup>1</sup> and Zehui Tian<sup>1</sup>

<sup>1</sup>Business School, Nankai University, Tianjin, China, <sup>2</sup>School of Management, Guangzhou City University of Technology, Guangzhou, China

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### \*Correspondence:

Nan Xu  
xunan@gcu.edu.cn

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The belongingness literature has largely examined the antecedents of non-teleworkers' sense of belongingness, but little attention has been paid to what job-related factors could affect teleworkers' sense of belongingness. Grounded in organizational support theory, our research focuses on why feedback quality from the direct leader brings sense of belongingness and considers how conscientiousness of teleworkers shapes this effect. Based on data from 329 participants obtained at three different time points from one technology service organization in China, our results indicated that teleworkers' perceived organizational support serves as an essential mediator of the positive relationship between feedback quality from the direct leader and sense of belongingness. Additionally, the teleworkers' conscientiousness strengthened the positive direct effect of feedback quality on perceived organizational support and the indirect effect on sense of belongingness. The moderating role of conscientiousness in strengthening the link between feedback quality and perceived organizational support was significant for high levels of conscientiousness and not significant for low levels. Finally, we discussed theoretical and practical implications.

**Keywords:** feedback quality, sense of belongingness, perceived organizational support, conscientiousness, teleworker

## INTRODUCTION

Teleworkers refer to individuals working from locations away from their primary offices, such as home, client sites, or shared office space (Raghuram et al., 2019; Adamovic et al., 2021). Teleworking is a widely popular work mode that has been experiencing rapid worldwide growth due to its potential benefits, such as better work-life balance, reduced travel time, schedule flexibility, autonomy, and job satisfaction (Allen et al., 2015; Field and Chan, 2018; Wang et al., 2020). Although it can bring many benefits to teleworkers, the loss of organizational trappings, and spontaneous, face-to-face interaction with other organizational members makes it harder for teleworkers to maintain a salient connection with the organization (Ashforth, 2020). Thus, teleworkers are more likely to experience a lack of sense of belongingness (Belle et al., 2015;

Mogilner et al., 2018), which refers to “the experience of personal involvement in a system or environment so that persons feel themselves to be an integral part of that system or environment” (Hagerty et al., 1992, p. 173) and serves as a crucial influencer of employee satisfaction and work outcomes (Randel et al., 2018; Zheng et al., 2020).

Scholars have a long history of research on sense of belongingness and found that many factors may inhibit or enhance employees' sense of belongingness, such as physical and social isolation (Bartel et al., 2012; Kossek et al., 2015; Wang et al., 2020), leadership (Cai et al., 2018; Yang et al., 2020), and organizational support (Haines et al., 2002; Chen et al., 2020). Nevertheless, previous research mainly focuses on non-teleworkers at the workplace. Little attention has been paid to how work-related factors influence teleworkers' sense of belongingness. Therefore, this paper will take this as the research object. Among studies that addressed the antecedents of sense of belongingness, organizational support is considered as a key motivator for individuals to identify their intention to belong (Casimir et al., 2014; Chen et al., 2020). Specifically, due to the constraints of the work environment, teleworkers' interactions with the organization (i.e., tackling the possible problems and challenges arising in teleworking) are primarily from dyadic interactions with their leaders at work (Park and Cho, 2020). In the daily two-way communication between leaders and employees, leaders providing job feedback to employees are an important part of the process (Ashford et al., 2016). Therefore, feedback becomes a particularly important source for teleworkers to feel the support of organizations (Kumar et al., 2018; Guan and Frenkel, 2020). However, despite the importance of feedback to teleworkers, few studies have focused on the relationship between feedback from leaders and teleworkers' sense of belongingness. Feedback quality, as one of the most practical aspects of feedback, refers to relevant, specific, and detailed information to make their job performance progress (Steelman et al., 2004), and determines the extent to which feedback can help work progress. Thus, this study will focus on how and when feedback quality affects teleworkers' sense of belongingness.

Specifically, organizational support theory suggests that helping employees in stressful situations or helping employees deal with their jobs effectively are believed to be the assurance of organizational support for employees, and such support will catalyze positive employee outcomes (Ahmed et al., 2015; Islam et al., 2019). We believe that delivered feedback from leaders can be regarded as a way for organizations to support their teleworkers, which in turn can evoke their sense of belongingness. As demonstrated in previous studies, supervisors act as agents of the organization (Eisenberger et al., 2002; Jin and McDonald, 2017), thus employees in generally view their supervisor's favorable treatment (i.e., high-feedback quality) toward them as indicative of the organizational support (Baran et al., 2012; Kurtessis et al., 2017). Based on this reason, we believe that organizational support may be the intrinsic mechanism connecting feedback quality and teleworkers' sense of belongingness.

To further identify the boundary conditions of how feedback quality affects sense of belongingness *via* perceived organizational

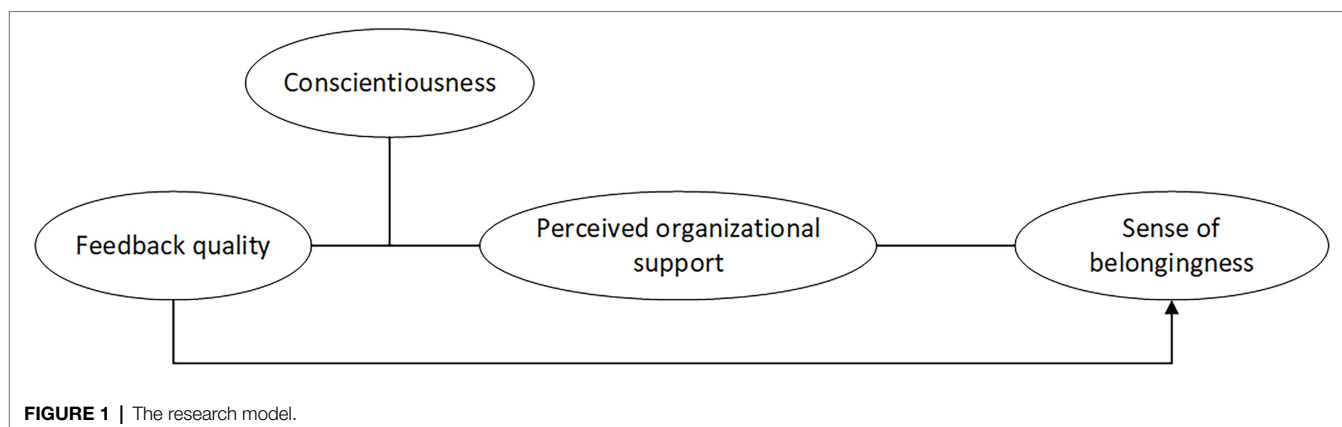
support, personality traits are considered as important factors influencing individuals' reactions to and use of feedback (Furnham, 1989; Smither et al., 2005). In this study, teleworkers are not under the daily visible supervision of their leaders, so we chose conscientiousness to explore when these relationships change. Conscientious individuals are described as hard-working, persistent, achievement-striving, and goal-oriented (Barrick et al., 2005; Singh, 2019; Tu et al., 2020). Individuals with high conscientiousness may work harder to address and deal with feedback than those with low conscientiousness because they have a greater willingness to achieve and are more focused or self-disciplined in completing tasks (Cianci et al., 2010). Thus, we believe that highly conscientious individuals place more emphasis on feedback to meet the challenges of being away from the organization. With this, they are more likely to view high-quality feedback as support from the organization, which in turn reinforces the individual's sense of belongingness. Therefore, we expect that conscientiousness moderates the relationship between feedback quality and sense of belongingness through perceived organizational support.

This research makes some critical theoretical contributions. First, the present study enriches the literature on sense of belongingness by targeting teleworkers, who form a prevalent workgroup in current society have rarely been studied, and by identifying feedback quality as an antecedent. Second, drawing from organizational support theory, we reveal the mediating role of perceived organizational support between feedback quality and sense of belongingness. Finally, this study will further delineate the boundary conditions of the hypothesized relationship by examining the moderation of conscientiousness. We propose that the level of conscientiousness may directly affect their attitude toward feedback. Such investigation provides a more nuanced picture of when feedback quality influences teleworkers' sense of belongingness, allowing us to better understand who is more sensitive to feedback quality for teleworkers. **Figure 1** depicts our overall research model.

## THEORY AND HYPOTHESES DEVELOPMENT

### Feedback Quality and Sense of Belongingness

Belongingness is a mental health concept that describes the self as a perceived part of an organization (Hagerty et al., 1992) and is often seen as the result of frequent, pleasurable interactions with others (i.e., follower-leader; Baumeister and Leary, 1995; Chan et al., 2015; Kia et al., 2019). Teleworkers are more likely to suffer from a lack of belongingness because they have to meet the challenge of remaining connected to the organization while working outside of the organization. As a result, they are more likely to feel that there is no community to rely on for support, so that they are more likely to feel isolated and invisible, as well as to no longer maintain a sense of belongingness with the organization and eventually lose their intimate connection to the organization (Belle et al., 2015). However, in the frequent daily communication between



teleworkers and the organization, in addition to the organization's task, assignment to teleworkers is the organization's daily work feedback to teleworkers. Therefore, the quality of feedback may affect the employee's perception of the relationship with the organization and satisfaction with work interactions.

Specifically, as Xanthopoulou et al. (2012) argued, daily job resources (i.e., high-quality feedback) could predict employees' positive emotions because those resources concern individuals' sense of their ability to successfully control their environment. In this study, for teleworkers, helpful feedback from the supervisor is a kind of important work resources, which refers to job aspects that are functional in achieving work goals and stimulate personal growth and development (Bakker and Demerouti, 2007). Thus, we believe that high-quality feedback can induce positive emotions in the internal interactions of the organization. Low-quality feedback can leave teleworkers believing their leaders are not helping them effectively, which can breed anxiety and helplessness (Reimann and Guzy, 2017). Feelings of helplessness, especially for teleworkers, pose a threat to his status and safety within the organization and adversely affect individuals' sense of belongingness at work (Hershcovis et al., 2017), and then withdraw from the organization (Chan et al., 2015; O'Reilly et al., 2015; Randel et al., 2018). A similar study found that when employees have not received the feedback they need, it will hurt their need to belong or connect to others (McIlroy et al., 2021). Thus, we propose that high-feedback quality can increase teleworkers' sense of belongingness. Instead, if employees perceive their organization as not treating them positively (e.g., low feedback quality), they are less likely to become attached to the organization and stay with it (Joo et al., 2015). Thus, we believe as:

*Hypothesis 1:* Feedback quality will be positively associated with teleworkers' sense of belongingness.

## The Mediating Role of Perceived Organizational Support

According to perceived organizational support theory, perceived organizational support refers to employees' general beliefs about the degree to which their organization values their contributions and cares about their wellbeing (Shanock and Eisenberger, 2006,

p. 206). Organizational literature also indicates that organizational support signifies that employees are cared for and valued (Tremblay and Gibson, 2016). Since leaders are viewed as agents of the organization, employees tend to perceive the leaders' behaviors as how much the organization values their contributions and wellbeing (Eisenberger et al., 1986). Direct leaders typically have more frequent daily contact with employees, so they have more opportunities to demonstrate support (or lack thereof) to employees than organizations do (Wu and Parker, 2017).

Previous research suggests that feedback usually is regarded as an indicator of organizational support (McIlroy et al., 2021). Feedback quality holds a valuable resource to help employees attain work tasks and fulfill job responsibilities associated with their specific position at work. In reality, employees wait not passively for feedback but actively seek it in casual daily interactions at work (Ashford et al., 2016; Lam et al., 2017; De Stobbeleir et al., 2020), which expresses the extent to the desire of employees for feedback. For teleworkers who work remotely, high-quality feedback is typically characterized by the perceived consistency and usefulness of the feedback, and therefore involves the informational value of the feedback message (Dahling et al., 2015; Wang et al., 2015). By contrast, low-quality feedback may be less likely to make teleworkers feel cared for and valued by their leaders because of its inefficiency in helping them improve their work. Thus, making teleworkers perceive organizational support by providing them with high-feedback quality will result in their stronger identification and commitment to the organization, which will ignite teleworkers' enthusiasm to help the organization succeed and help them achieve a greater sense of psychological wellbeing (Kurtessis et al., 2017). This will act as a signal to employees that they can count on the organization to help them when job demands are great (McIlroy et al., 2021). Some empirical studies have shown that managers engaging in encouraging others, nurturing others, and endeavoring to assist others' development will motivate employees' perception of organizational support (Zhou and Miao, 2014).

Furthermore, several recent studies have examined how perceived organizational support contributes to employees' sense of belongingness. Park et al. (2016) found that providing support, direction, and feedback regarding career plans and personal development to the employee by mentors will promote



their perceived organizational support and further reduce their intention to leave. Toker et al. (2015) suggest that the instrumental and emotional support employees receive at work provides sense of belongingness due to its value of helping employees to better cope with the dual pressures of work demands. Hoppe et al. (2017) also argued that offering instrumental and informational support to employees may enhance their sense of belongingness, as those support is valued by employees and contributes to expansion of employees' resource reservoir. The leader is a representative of the authority in an organization (Marstand et al., 2017), and authority means adequate resources. Leader support can bolster employees' sense of belongingness because of the important inducement of resources adequacy in promoting sense of belongingness (Nifadkar and Bauer, 2016).

Altogether, the type of treatment an employee receives from the organization is perceived to be illustrative of the employees' position within the organization (Zagenczyk et al., 2013). Positive treatments by the organization (i.e., high-feedback quality) may symbolize an appreciated position of teleworkers within the organizational entity, while negative organizational treatments (i.e., low feedback quality) symbolize the employee's minimal value to the organization (Restubog et al., 2008). Accordingly, when leader delivers teleworkers with high-feedback quality, teleworkers will feel appreciated and valued by the organization, which allows them to closely define themselves concerning what the organization represents (De Ruiter et al., 2018). As pointed out in De Ruiter et al. (2018), when an organization fulfills its obligations, it positively influences teleworkers' psychological bond with the organization, and thus sense of belongingness from employees will be cultivated. Thus, we propose as:

*Hypothesis 2:* Perceived organizational support will mediate the positive relationship between feedback quality and teleworkers' sense of belongingness.

## The Moderating Role of Conscientiousness

We realize that not all teleworkers like to use high-quality feedback to assess whether the organization is supportive of them. Conscientiousness is a component of the five-factor personality model (Costa and McCrae, 1988, 1992) and represents the degree to which individuals are dutiful, hard-working, persevering, and self-disciplined and tend to strive for achievement (Barrick et al., 2005; Resick et al., 2007). In the case of individuals assigned to the outside site (i.e., teleworkers), teleworkers with high conscientiousness will attach more importance to leaders' feedback (VandeWalle, 2003; Vandewalle et al., 2019). We expect that conscientiousness will amplify the positive effects of feedback quality on perceived organizational support.

As suggested by organizational support theory, when the organization provides help and care for employees' needs, employees will feel that the organization is supportive of them

(Riggle et al., 2009). We propose that high conscientious teleworkers are more likely to recognize the value of work-related help (i.e., feedback) from the organization than low conscientious teleworkers due to their high expectations of work quality, and thus derive stronger organizational support from the feedback. Specifically, conscientious individuals value personal achievement more, so they care more about the high quality of work (Hohnemann et al., 2022), are more motivated (Huang et al., 2017), and are hard-working (Eissa, 2020). Thus, highly conscientious individuals are more concerned with achievement-related conditions, such as a sense of accomplishment (Tu et al., 2020), and are inclined to expend energy on conquering the work-related problems that they encounter (Eissa, 2020). That is, feedback becomes a more valuable asset that is needed to help them improve their work better for high conscientious employees. Conversely, teleworkers with less conscientiousness were not highly concerned about achievement at work, so the delivered low feedback quality may not cause a noticeable disturbance for them. Hence, we hypothesize as:

*Hypothesis 3:* Conscientiousness will moderate the direct effect of feedback quality on perceived organizational support. The effect will be stronger for teleworkers with high conscientiousness relative to low.

## Moderated-Mediation Model

To integrate these relationships, a moderated-mediation model is proposed. We propose that conscientiousness plays a moderating role in the indirect relationship between feedback quality and teleworkers' sense of belongingness *via* perceived organizational support. As mentioned before, compared with low levels of conscientiousness, teleworkers with high levels of conscientiousness put more value on high-quality feedback. Thus, teleworkers with high levels of conscientiousness will perceive stronger organizational support from high-quality feedback, which further leads them to feel a stronger sense of acceptance and inclusion in the organization as a part of the organization. We hypothesize as:

*Hypothesis 4:* Conscientiousness will moderate the indirect effect of feedback quality on teleworkers' sense of belongingness *via* perceived organizational support. The effect will be stronger when conscientiousness is high relative to low.

## MATERIALS AND METHODS

### Samples and Procedures

The participants for this research were recruited from a Chinese information technology company and more than 3,000 employees, with customers all over the country in a wide range of industries. We chose this company's teleworkers as our research subjects. Teleworking is defined as "work carried out in a location where remote from central offices or production facilities, the worker

has no personal contact with co-workers there, but is able to communicate with them using new technology” (Di Martino and Wirth, 1990: 530). All the teleworkers had an area specifically devoted to their office space and the technological equipment necessary (i.e., PC) to carry out their job. However, the teleworkers had no set time to visit the office and face-to-face contact was minimal. They engaged in work away from the office location three or more days a week, which is defined as high-intensity telework in Belle et al. (2015).

This organization has around 2000 teleworkers. We distributed the electronic questionnaires by a random employee WeChat group of 500 teleworkers with the help of HR, which is a group formed by HR to facilitate daily management. We stated that the survey was a research study on the employees’ daily work and that the data would only be used for academic research, noting that it is anonymous and will not be personal. Moreover, we stated that the survey was divided into three waves at around two-week intervals. In the last question of each questionnaire, we asked the participants to fill in the last four digits of their phone numbers to match the responses and reassure the participants to provide more truthful answers (Podsakoff et al., 2003). We also emphasized that if they would like to know the results of the study in the future, they could leave an email in their questionnaires.

To ensure a two-week interval, we left the questionnaire system open for 3 days for each collection, which also allowed participants sufficient time to complete it. In the first-wave survey (T1), 422 employees completed the survey of feedback quality delivered by their leaders, conscientiousness, and personal information. In the second-wave survey (T2), the questionnaire of perceived organizational support was sent to the same WeChat group, and 380 participants completed it. In the third-wave survey (T3), 334 participants in the same WeChat group completed the questionnaire of sense of belongingness. We screened the questionnaires in the following ways. First, participants had to be teleworkers; second, the questionnaire was filled out completely; and third, the questionnaire was matched by the last four digits of their phone numbers. A 329 matched data were included in the last sample, with a 65.80% response rate. The average age was 29.89 years ( $SD=6.58$ ). A 200 participants were men. Education level for high school diploma or below, college diploma, bachelor’s degree, master’s degree, doctoral degree, and above were 3.3, 5.5, 46.8, 43.2, and 1.2%, respectively. Participants’ average dyadic tenure with leaders was 2.23 years ( $SD=1.92$ ). The average organizational tenure was 3.19 years ( $SD=3.76$ ).

## Measures

All survey items were translated into Chinese according to the back-translation procedure in Brislin’s (1986) study. A five-point Likert scale was used, ranging from 1 (=strongly disagree or to no extent) to 5 (=strongly agree or to a very large extent).

### Feedback Quality

Feedback quality was measured using a five-item subscale ( $\alpha=0.90$ ) from Steelman et al. (2004). Participants were asked

to indicate the extent to which they agreed that a specific statement reflected the feedback practices from their direct leaders. One sample item was “the feedback I obtain from my direct leader is helpful.”

### Conscientiousness

Employees rated their conscientiousness using five items ( $\alpha=0.89$ ) from Singh (2019). One sample item was “I am always prepared for work.”

### Perceived Organizational Support

To measure perceived organizational support, we used the eight items ( $\alpha=0.89$ ) taken from Rhoades et al. (2001). One sample item was “help is available from my organization when I have a problem.”

### Sense of Belongingness

Employees rated their sense of belongingness to the organization they had a contract with on the survey comprising five items ( $\alpha=0.88$ ) from Hoogervorst et al. (2012). One sample item was “Please rate the extent to which you feel ‘valued’ by your company.”

### Control Variables

Besides controlling for demographic variables (gender, age, and education level), we also controlled employee tenure in the organization and dyadic tenure (the leader–subordinate relationship) in the following analysis, which have been found to be essential for employees’ sense of belongingness by Ashforth et al. (2013).

## RESULTS

### Descriptive Statistics and Confirmatory Factor Analysis

Means, standard deviations, and bivariate correlations are presented in Table 1. The preliminary analysis showed that feedback quality was positively related to perceived organizational support ( $r=0.41$ ,  $p<0.01$ ) and sense of belongingness ( $r=0.50$ ,  $p<0.01$ ), and perceived organizational support is positively related to sense of belongingness ( $r=0.47$ ,  $p<0.01$ ). Moreover, results showed that only age, education, and dyadic tenure are correlated to perceived organizational support or sense of belongingness. Thus, following the recommendation of Becker et al. (2016), we controlled the effects of age, education, and dyadic tenure in the following SEM analysis.

We used Mplus 7.4 to conduct several confirmatory factor analyses, and the results are shown in Table 2. We conducted item parcels for all variables recommended by Little et al. (2002), and 12 parcels were generated for four variables. The results demonstrate that the hypothesized four-factor measurement model has a better fit ( $\chi^2=70.44$ ,  $df=48$ ,  $TLI=0.99$ ,  $CFI=0.99$ ,  $RMSEA=0.04$ ,  $SRMR=0.02$ ) than any of the other three-factor models.

**TABLE 1** | Correlations and descriptive statistics.

	Mean	SD	1	2	3	4	5	6	7	8	9
1. Gender	1.39	0.49									
2. Age	29.89	6.58	-0.07								
3. Education	3.33	0.75	0.05	-0.14**							
4. Tenure	3.19	3.76	0.09	0.66**	-0.12*						
5. Dyadic tenure	2.23	1.92	0.14*	0.47**	-0.12*	0.76**					
6. Feedback quality	3.86	0.81	0.05	0.12*	-0.01	0.10	0.17**	(0.90) <sup>a</sup>			
7. Conscientiousness	2.36	0.72	-0.02	0.09	-0.13*	0.06	0.02	0.07	(0.89)		
8. Perceived organizational support	3.28	0.58	-0.08	0.12*	-0.14**	0.08	0.15**	0.41**	0.28**	(0.89)	
9. Sense of belongingness	3.76	0.66	0.02	0.09	-0.10	0.03	0.12*	0.50**	0.05	0.47**	(0.88)

*N* = 329; Gender was coded "1" for men and "2" for women. Education was coded "1" for "high school diploma or below," "2" for "college diploma," "3" for "bachelor's degree," "4" for "master's degree," and "5" for "doctoral degree." <sup>a</sup>Reliability coefficients are reported along the diagonal. \**p* < 0.05, \*\**p* < 0.01.

**TABLE 2** | Confirmatory factor analysis for discriminant validity.

Model	$\chi^2(df)$	CFI	TLI	RMSEA [90% CI]	SRMR	$\Delta\chi^2 (\Delta df)^a$
Four-factor model (FB, POS, SOB and CON)	70.44(48)	0.99	0.99	0.04[0.02, 0.06]	0.02	-
Three-factor model (FB and POS were combined)	726.68(51)	0.76	0.69	0.20[0.19, 0.21]	0.13	656.24(3)***
Three-factor model (FB and SOB were combined)	485.94(51)	0.85	0.80	0.16[0.15, 0.17]	0.10	415.5(3)***
Three-factor model (FB and CON were combined)	750.13(51)	0.75	0.68	0.20[0.19, 0.22]	0.15	679.69(3)***
Three-factor model (POS and SOB were combined)	501.01(51)	0.84	0.80	0.16[0.15, 0.18]	0.11	430.57(3)***
Three-factor model (POS and CON were combined)	686.56(51)	0.78	0.71	0.20[0.18, 0.21]	0.13	616.12(3)***
Three-factor model (SOB and CON were combined)	734.93(51)	0.76	0.69	0.20[0.19, 0.22]	0.22	664.49(3)***

*N* = 329. <sup>a</sup>The chi-square difference for each model reflects its deviation from the four-factor model. FB, Feedback quality; POS, perceived organizational support; SOB, sense of belongingness; CON, conscientiousness. \**p* < 0.05, \*\**p* < 0.01, and \*\*\**p* < 0.001.

## Tests of Hypotheses

We used the SEM in Amos 26.0 with latent variables to test all hypotheses with bootstrapping procedure with 5,000 samples. To Hypotheses 1 and 2, we specified the direct and indirect effects of feedback quality on perceived organizational support and sense of belongingness. Three demographic variables (i.e., age, education level, and dyadic tenure) were used to predict perceived organizational support and sense of belongingness. We found that the model fit of the mediating effect was acceptable ( $\chi^2 = 462.56$ , *df* = 177,  $\chi^2/df = 2.61$ , CFI = 0.92, TLI = 0.91, RMSEA = 0.07). **Table 3** summarizes standardized direct effects with lower and upper bound limits. We found feedback quality was significantly related to sense of belongingness [ $b = 0.27$ , 95% CIs (0.15, 0.42),  $p < 0.001$ ], supporting Hypothesis 1. In terms of considering perceived organizational support as a mediation mechanism linking feedback quality and sense of belongingness, we found a significant positive indirect effect of feedback quality on sense of belongingness *via* perceived organizational support, as indicated by the 95% confidence intervals [CIs;  $b = 0.09$ , 95% CIs (0.07, 0.21),  $p < 0.001$ ], which excluded 0. Therefore, Hypothesis 2 was supported.

To test Hypothesis 3, we introduced conscientiousness as a moderator in the mediation model to predict perceived

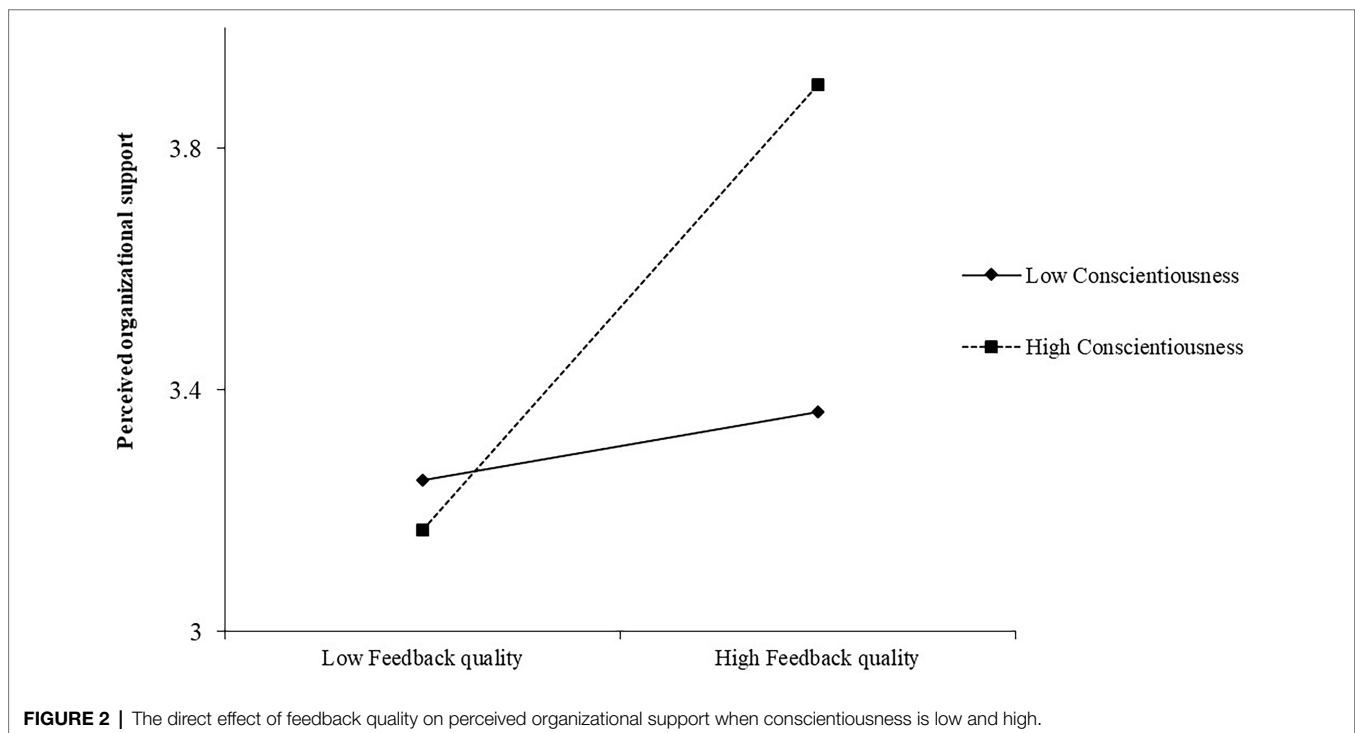
organizational support. All the predictors (i.e., feedback quality and conscientiousness) were mean-centered to reduce the potential for multicollinearity (Aiken et al., 1991). We found that the model fit of the moderated-mediation effect was also acceptable ( $\chi^2 = 840.31$ , *df* = 412,  $\chi^2/df = 2.04$ , CFI = 0.92, TLI = 0.91, RMSEA = 0.06). As shown in **Table 3**, the interaction term of feedback quality and conscientiousness was significantly related to perceived organizational support [ $b = 0.35$ , 95% CIs (0.23, 0.43),  $p < 0.001$ ]. To assist with interpretation, the plot of the interaction effect is shown in **Figure 2**. Consistent with our expectation, simple slope analyses showed that feedback quality was more positively correlated with perceived organizational support when conscientiousness was at a high level (+1 *SD*;  $b = 0.46$ ,  $p < 0.001$ ) than when conscientiousness was at a low level (-1 *SD*;  $b = 0.07$ ,  $p > 0.05$ ), with a significant difference in the relationship magnitude (*difference* = 0.39,  $p < 0.001$ ). Hypothesis 3 was thus supported.

Moreover, we examined the extent to which the overall mediation effect of perceived organizational support was conditionally influenced by the levels of conscientiousness. To test the difference of the conditional indirect effects under low and high levels of conscientiousness, Edwards and Lambert (2007) method, which has been widely used in later studies

**TABLE 3** | Standardized direct, indirect, and interaction effects with lower and upper bound limits.

Bootstrap method	Bias-corrected percentile method		
	<i>b</i>	CI	<i>p</i>
Structural paths			
Feedback quality→Sense of belongingness	0.27	[0.15,0.42]	0.000
Perceived organizational support→Sense of belongingness	0.25	[0.14,0.37]	0.000
Feedback quality→Perceived organizational support	0.38	[0.28,0.49]	0.000
Feedback quality→Perceived organizational support→Sense of belongingness	0.09	[0.07,0.21]	0.000
Feedback quality × Conscientiousness→Perceived organizational support	0.35	[0.23,0.43]	0.002

*N*=329. CI: confidence interval; *b*: unstandardized regression weight, *b*-values are computed through bootstrapping procedure with 5,000 bootstrap samples. \**p*<0.05, \*\**p*<0.01, and \*\*\**p*<0.001.

**FIGURE 2** | The direct effect of feedback quality on perceived organizational support when conscientiousness is low and high.

(Panaccio et al., 2014; Zheng et al., 2021), was followed. We used Model 7 in Hayes' (2013) PROCESS macro with 5,000 bootstrap samples to test the moderated-mediation model. As expected, the indirect, positive effect of feedback quality on sense of belongingness *via* perceived organizational support was stronger when conscientiousness was at a high level [+1 *SD*; effect size=0.16, Boot *SE*=0.03, 95% CIs (0.10, 0.23)] than when conscientiousness was at a low level [−1 *SD*;  $\beta$ =0.02, Boot *SE*=0.01, 95% CIs (0.00, 0.05)], with a significant difference estimate [difference=0.14, Boot *SE*=0.02, 95% CIs (0.06, 0.14)]. Therefore, Hypothesis 4 was supported.

## DISCUSSION

Research on sense of belongingness has gained widespread attention, but previous studies have emphasized the importance of co-workers (Thau et al., 2007) and organizational inclusive

atmosphere (Shore et al., 2018) in improving office employees' sense of belongingness. But empirical studies targeting teleworkers are uncommon. Especially, less attention has been paid to how feedback quality influences teleworkers' sense of belongingness. In the current study, we drew on organizational support theory (Shanock and Eisenberger, 2006) to build and examine a theoretical model that explains why and when feedback quality may evoke teleworkers' sense of belongingness—an experience where individuals feel themselves to be an integral part organization in the workplace. We found that feedback quality can foster employees' sense of belongingness *via* perceived organizational support. A possible explanation of this finding is that feedback as a work-related resource, providing employees with quality feedback is a symbol of approval for employees and allows them to feel valued and nurtured by the organization which further makes them more willing to stay with the organization and belong to it. This finding also corroborates Riggall et al.'s (2009) view that in a supportive work environment,



employees feel more included in the organization. Moreover, the results also indicated that perceived organizational support mediated partially the relationship between feedback quality and sense of belongingness. This is probably because organizational support theory is not the only way to link feedback quality to sense of belongingness, but it also re-emphasizes the importance of high-quality feedback.

Furthermore, we found teleworkers with high levels of conscientiousness than low levels were more likely to perceive organizational support and experience a sense of belongingness. Specifically, for teleworkers with high levels of conscientiousness relative to low levels, the positive direct relationship between feedback quality and perceived organizational support and the positive indirect relationship between feedback quality and sense of belongingness *via* perceived organizational support both became stronger. The finding strengthens the crucial value of teleworkers' personality in shaping individuals' prioritization of needs. It is clear in this study that the need for high-quality feedback is higher for teleworkers who are more conscientious.

## Theoretical Implications

This study extends the sense of belongingness literature in virtual employee management in many ways. First, based on the most fundamental needs of teleworkers, this study identifies feedback quality as the antecedents of influencing teleworkers' sense of belongingness and verifies the important value of perceived organizational support in motivating teleworkers' sense of belongingness. This study responds to the appeal and improves the attention to the value of feedback quality (Ashford et al., 2016), emphasizing that feedback has become a core resource for employee learning and self-developing, which further ensures employees' eagerness to belong to the organization (Anseel et al., 2007).

Second, we found the backing for the mediating role of perceived organizational support between feedback quality and sense of belongingness. This study contributes to intrinsic mechanism exploration linking feedback quality to sense of belongingness. That is, for teleworkers, perceived organizational support is essential in helping them perceive their own as a part of the organization. This is in agreement with the findings of Wiesenfeld et al. (2001) and Shore et al. (2011), such perceived personal experience of getting support at work is a powerful force in bolstering their perception of belongingness to the organization. Moreover, scholars have investigated many employee outcomes that were influenced by organizational support (Ahmed et al., 2015), such as organizational commitment, employee engagement, job satisfaction, and turnover intentions. However, this study found a more specific result examining the impact of perceived organizational support on sense of belongingness.

Finally, we introduce teleworkers' conscientiousness as a crucial boundary factor to analyze the influence of feedback quality. It confirmed that conscientious teleworkers pay more attention to feedback quality for effectively solving the problems faced at work and provides a more detailed process of how

feedback quality influences teleworkers' outcomes, which expands the research related to conscientiousness in the field of feedback.

## Practical Implications

The present research's overall outcomes have several practical implications for organizations. First, this study clearly emphasized the importance of giving teleworkers high-quality feedback, because receiving high-quality feedback can trigger positive attitudes, cognitions, and behaviors (Steelman et al., 2004; Wang et al., 2015) such as perceived organizational support and sense of belongingness. For teleworkers, physical distance causes information deficits (Handke et al., 2021), social and professional isolation (Nicklin et al., 2016; Wang et al., 2020). They experience a great deal of ambiguity. Leaders become the merely important bridge between teleworkers and the organization. A leader of teleworkers should give tailored and thoughtful feedback (Jarvenpaa et al., 1998; Bell and Kozlowski, 2002). Thus, daily feedback from the leader for teleworkers becomes crucial information for employees to reduce job uncertainty, learn and improve job performance (Virick et al., 2010). For teleworkers, it is recommended that leadership and management training programs focus on learning their feedback needs (Marstand et al., 2018). Furthermore, as mentioned by Riggs and Porter (2017), leaders should strive to discuss their behaviors with teleworkers (e.g., giving high-quality feedback) to better meet teleworkers' needs.

Second, our findings also highlight the important role of perceived organizational support for teleworkers in transmitting the influence of feedback quality on sense of belongingness. On the one hand, effective management communication (i.e., giving high-quality feedback) is essential to signal that the organization cares about the wellbeing and values the contributions of its employees (Allen, 1992; Neves and Eisenberger, 2012). At the same time, managers can empathize with their teleworkers and understand their concerns and difficulties. In addition, research has shown that a variety of organizational practices bring employees and organizations closer together and benefit employees' perception of organizational support. For example, DeConinck (2010) found that organizational justice has a positive relationship with perceived organizational support through employees' perception that the organization cares about their welfare. Human resource practices (i.e., high-performance work practices) were also proved to enhance perceived organizational support by investing in the skills and abilities of employees, designing work in a way that facilitates employee collaboration in problem solving, and providing incentives to enhance motivation (Gavino et al., 2012). The power and influence of the broad organization relative to factors of individual levels may create more advantages in fostering employees' perception of organizational support, which in turn promotes their sense of belongingness.

Finally, the research results show that teleworkers with high levels of conscientiousness are more likely to perceive organizational support and a sense of belongingness. It indicates that conscientiousness should become an evaluation criterion in the process of recruiting and selecting teleworkers in the organization (Eissa, 2020; Tu et al., 2020), given that this

personality for teleworkers is imperative to cherish more job-related resources from organizations, such as job feedback.

## Limitations and Future Research

This study has several limitations worth discussing. First, the self-report method was used to measure all variables; thus, the common method deviation is worrisome. We collected data from three different times to a certain extent and alleviated the concern of common method bias. However, future research could solve common method deviation problems by using some objective data such as leveraging the turnover rate of teleworkers to detect their sense of belongingness.

Second, along with perceived organizational support theory, we found perceived organizational support as the mechanism connecting feedback quality to teleworkers' sense of belongingness. However, the analysis results showed that perceived organizational support did not play a fully mediated role; thus, other potential mechanisms cannot be excluded. For example, the level of feedback quality may serve as a kind of motivation/stressor that triggers teleworkers' excitement/anxiety, positively correlated to positive/negative affectivity based on affective event theory.

Finally, future research should consider other buffers. For example, high-quality leader-member exchange characterizes individuals as trustworthy, respectful, loyal, and having a mutual obligation with their leaders to arouse their positive affectivity, which can strengthen the positive effect of satisfying experiences (i.e., high-quality feedback) and reduce the negative effect of unpleasant experiences (Kreemers et al., 2018; Qian et al., 2020).

## CONCLUSION

The present study used a sample of teleworkers to explore the underlying relationship linking feedback quality to sense of belongingness. Since most teleworkers work independently outside the organization, their need for a sense of belongingness is particularly pronounced. The hypothesized moderated-mediation model demonstrated that teleworkers who received high-quality

feedback delivered by their direct leaders would perceive support from the organization and subsequently felt a sense of belongingness. Especially, high conscientious teleworkers relative to low could perceive stronger organizational support from the delivered feedback from leaders, which in turn experienced a stronger sense of belongingness. The findings emphasize the importance of high-quality feedback and perceived organizational support in facilitating teleworkers' sense of belongingness, and those relationships are even more obvious for high conscientious individuals rather than low. Finally, these findings are valuable in helping HR practitioners and supervisors to create a job-related environment that effectively builds teleworkers' sense of belongingness.

## DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## AUTHOR CONTRIBUTIONS

YL, NX, QY, and ZL: research design. NX and QY: data collection. YL and ZL: data analysis. YL: writing of the original draft. YL, NX, QY, ZL, and ZT revising the article. All authors contributed to the article and approved the submitted version.

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# The Benefits of Being Proactive While Working Remotely: Leveraging Self-Leadership and Job Crafting to Achieve Higher Work Engagement and Task Significance

Arianna Costantini<sup>1\*</sup> and Jared Weintraub<sup>2</sup>

<sup>1</sup>Department of Psychology and Cognitive Science, University of Trento, Rovereto, Italy, <sup>2</sup>The Flow Group, LLC, New York, NY, United States

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### \*Correspondence:

Arianna Costantini  
arianna.costantini@unitn.it

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Given the growing number of remote and hybrid working arrangements, this research investigates the process and outcomes of proactivity during remote work. We approach proactivity during remote working as a resource-building process and integrate self-leadership and job crafting literature. We propose that employees' self-leadership allows them to regulate their resources optimally, enabling resource availability that can be used to arrange remote working demands and resources proactively. We collected three-wave data from remote workers ( $n = 329$  observations) and tested our hypotheses using multilevel analyses. Results differed by level of analysis. Specifically, at the between level, comparing behaviors between participants, social expansion mediated the relationship between self-goal setting and task significance. In contrast, at the within level (analyzing differences in behavior within the same person), social expansion mediated the relationship between self-goal setting and work engagement. Overall, these findings suggest that self-leadership allows higher availability of resources enabling the proactive initiation of social interactions, which, at the within level enhance work engagement, and at the between level improve task significance during remote work. We discuss these findings considering the implications for interventions to foster more positive remote-work experiences.

**Keywords:** remote work, self-leadership, job crafting, task significance, COVID-19, work engagement

## INTRODUCTION

The outbreak of the COVID-19 pandemic led millions of people across the world into remote work, with remote and hybrid working arrangements becoming the "new normal" almost overnight (Wang et al., 2020; Kniffin et al., 2021; Becker et al., 2022). This situation poses new challenges to understanding the processes and outcomes of remote work since it is no longer based on individual arrangements and specific requests but represents an entirely new context of work (Wang et al., 2020). To address these challenges and further knowledge on the new context of work, researchers started investigating how "virtual" work characteristics shape work, with remote work understood as a setting that profoundly re-shapes work

characteristics and experiences (Bailey and Kurland, 2002; Wang et al., 2020).

Literature provides initial evidence for the importance of self-discipline as a means of dealing with the challenges of remote work and mitigating the demands which undermine employee wellbeing (Wang et al., 2020). Yet, the understanding of how people manage themselves when working remotely has been largely omitted in previous studies and is particularly limited when considering the new ways of working that took shape after the outbreak of COVID-19 (Wang et al., 2020; Becker et al., 2022). This lack of knowledge on how proactivity unfolds during remote work after COVID-19 is particularly relevant. Working remotely represents a “weak” situation, where employees have high levels of autonomy, the goals (nor the means to achieve them) are not clearly specified, and the attainment of these goals is often unlinked to predefined rewards (Mischel and Shoda, 1995). Moreover, given that this new context of work seems characterized by less frequent interactions between leaders and employees (Gibbs et al., 2021) and that close monitoring during remote work is shown to have adverse effects on employees’ wellbeing (Wang et al., 2020), it is crucial to gain a better understanding of the role of self-leadership for proactivity during remote work after COVID-19.

In this study, we use a quantitative diary approach and follow remote workers weekly to investigate how their strategies to lead and manage themselves toward performance during remote working enable higher resources to craft their work and experience higher work engagement and task significance. We build on self-regulatory and proactivity research to integrate self-leadership (Manz, 1986; Houghton and Neck, 2002) and job crafting literature (Wrzesniewski and Dutton, 2001), and propose that employees’ self-leadership allows them to optimally regulate their resources. We further propose that this process enables resource availability that can be used to proactively arrange remote-work characteristics (i.e., job crafting), which leads to positive remote-work experiences.

We aim to contribute to the literature as follows: First, we integrate self-leadership and job crafting research, and place it in the context of remote working during the pandemic. We argue that when remote workers use self-leadership strategies more often, they are better equipped to proactively craft their virtual work environment, leading to higher wellbeing. In doing so, this research offers a better understanding of the role of self-leadership in improving remote workers’ ability to deal with and positively alter their work environment proactively. Unpacking such processes of self-leadership and proactivity, and their link with work-related wellbeing during remote working is timely and relevant. Remote-work arrangements are likely to be used much more in the future, with positive net effects depending on whether they are implemented well (Gibbs et al., 2021).

Second, we contribute to job crafting research by investigating the mediating role of job crafting as a factor linking self-leadership, work engagement, and task significance in the context of remote working. Although job crafting research has to date acknowledged that job crafting arises from the interplay between a person and his/her work context (Parker et al., 2010),

previous studies accounted for the role of (external) leadership (i.e., Lichtenthaler and Fischbach, 2018; Thun and Bakker, 2018), but only partially for self-influencing strategies that help people to take charge of their own motivation and performance (Neck and Houghton, 2006). Shedding light on the link between self-leadership and job crafting during remote working is important for the development of work proactivity research, for HRM practices to discover which self-regulation strategies enable individuals to better deal with their “virtual” work environment and to gain a better understanding of the underlying mechanisms that make them effective. While studies in traditional working contexts have established the link between job crafting and work engagement (*cf.* Zhang and Parker, 2019; Costantini et al., 2021), to the best of our knowledge, the effects of job crafting on task significance during remote working remain unexplored. Task significance refers to the degree to which employees perceive their job has a substantial impact on the lives or work of other people, whether in the immediate organization or in the external environment (Hackman and Oldham, 1975). Understanding the link between job crafting and task significance during remote working is relevant to shed light on whether and how job crafting has the potential to alter employees’ perceptions and (re)interpretation of the significance of their work (Wrzesniewski et al., 2013) when working from home. This is important to provide avenues for remote-work design and HRM policies and practices aimed at sustaining one’s sense of purpose, an aspect that, research shows, can be negatively impacted when remote working is suddenly introduced amid crisis (Ouwerkerk and Bartels, 2020).

Third, by using a diary method, we examine the dynamics of self-regulatory processes during remote working between individuals, as well as how an individuals’ own experience changes over time. Namely, we shed light on how job crafting leads to work engagement and task significance based on general differences between people and weekly changes in individuals’ experiences. In doing so, we complement the study of between-person differences with a within-person approach with the aim of enriching the literature on proactive work design for positive remote working experiences. Hence, this study advances knowledge on whether the proactive and self-regulatory processes during remote work are consistent—homologous—across different levels of analysis (*cf.* Gabriel et al., 2019), improving the understanding and theoretical development of job crafting and self-leadership literature. Recent cross-sectional research conducted during the pandemic suggested that self-discipline may be an important factor for remote workers to utilize the social resources from work to reduce loneliness (Wang et al., 2020). In the present research, we advance such literature by presenting three-wave longitudinal data and shed light on how weekly variations from employees’ baseline use of self-leadership strategies during remote working have implications for their involvement in job crafting—including the proactive initiation of social interactions—and its resulting outcomes. Such an analysis is relevant to inform theory and policy development by showing how self-leadership behaviors relate to job crafting variations during remote working, considering differences between people,

while also examining weekly variations in individual experiences. **Figure 1** shows the overarching model of the present study.

## THEORETICAL BACKGROUND

### Self-Leadership

Self-leadership is a process through which individuals exert self-influence over their thoughts, feelings, and behaviors at work (Harari et al., 2021). Drawing on insights from classical self-regulation and self-control theories (Bandura, 1986; Carver and Scheier, 1998), self-leadership theory proposes that self-influence strategies serve to establish intrinsic motivation, resulting in enhanced individual performance (Manz, 1986). Specifically, the self-leadership perspective emphasizes that individuals self-direct themselves not only to achieve externally defined goals and standards, but also to self-influence and establish intrinsic motivation leading to desired performance results (Manz, 1986). Through self-leadership, people achieve the self-direction and self-motivation necessary to perform (Neck and Houghton, 2006, p. 271). Hence, self-leadership strategies allow employees to engage in activities they *want to*—rather than they only feel they *should*—perform (Manz, 1986).

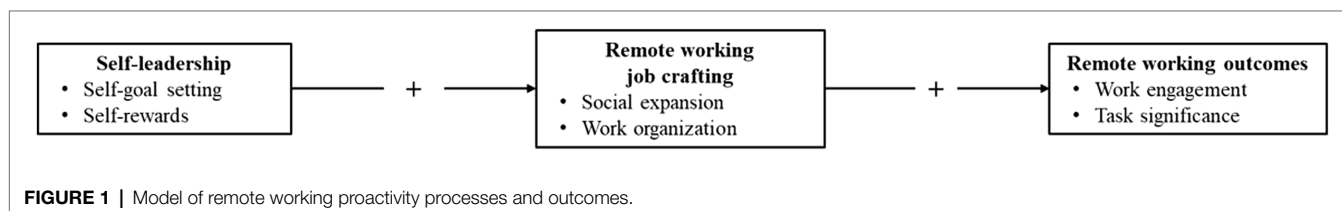
Existing literature recognizes three self-leadership strategies that can be used to achieve self-direction and motivation (Houghton and Neck, 2002; Harari et al., 2021): behavior-focused strategies, constructive thought pattern strategies, and natural reward strategies. Specifically, *behavior-focused* strategies enhance self-awareness for the management of one's behaviors, *constructive thought pattern* strategies center on forming habitual constructive thoughts emphasizing positive outcomes, and *natural reward* strategies emphasize the enjoyable aspects of a given task or activity (Houghton and Neck, 2002; Harari et al., 2021). Meta-analytic evidence shows that these various self-leadership strategies contribute differently toward particular outcome variables, with behavioral strategies contributing more toward regulating behavioral outcomes (Harari et al., 2021). Since in this study we are interested in understanding how self-leadership contributes to employees' proactive behaviors during remote working, we focus on self-leadership behavioral strategies. In the context of COVID-19, characterized by a widespread and abrupt change to remote work (Becker et al., 2022), we expect individuals who could effectively set goals for themselves and reinforce their own positive, desirable behaviors during remote working to be better equipped to initiate the proactive redesign of their remote—or virtual—work characteristics.

### Job Crafting

Self-leadership literature recognizes that individuals may re-frame certain aspects of the performance process to establish enhanced motivational potential for work performance (Manz, 1986, p. 594). This, in turn, may serve to prompt proactive job redesign to improve the fit between the individual and the job when employees transform their work motivation into desired behaviors (Zeijen et al., 2018). In other words, we propose that while self-leadership defines the self-influencing process prompting individuals to redefine certain aspects of the performance process to *build intrinsic motivation*, once those self-leadership strategies are activated, individuals may follow up by engaging in job redesign efforts that focus on *redefining the job characteristics* to make their work better fit their own needs and preferences.

We shed light on these dynamics and dig into such performance and motivational enhancing processes by investigating how self-leadership prompts proactive work redesign in terms of job crafting behaviors during remote working. Job crafting describes the proactive, self-initiated changes in job boundaries aimed at improving one's job and finding more meaning in it (Wrzesniewski and Dutton, 2001; Bruning and Campion, 2018). Research shows that job crafting can take several forms: employees may alter the number of tasks they have or the content of these tasks, they may change the amount and intensity of the relationships they have at work, or they may re-frame their thoughts about the aspects that give meaning to their job (Wrzesniewski and Dutton, 2001; Tims and Bakker, 2010). Importantly, these strategies do not refer to the redesign of the job as a whole, but to changing certain aspects or making small alterations that can impact the achievement of work goals (Tims and Bakker, 2010). Literature on job crafting shows that many of these strategies focus on active changes to one's job to achieve future-oriented goals—also referred to as approach-oriented job crafting (Bruning and Campion, 2018)—which result in optimized work environments leading to higher work engagement and performance outcomes (Bakker and Oerlemans, 2019; Zhang and Parker, 2019; Costantini et al., 2021).

In this study, we focus on two job crafting strategies that reflect active, effortful, problem-focused, and improvement-based goals. These approaches are referred to as work organization and social expansion strategies (Bruning and Campion, 2018). *Work organization* involves the active design of systems and strategies to organize the tangible elements of work and can include managing behavior or physical surroundings to increase structural job resources (Tims et al., 2012; Bruning and Campion, 2018). Examples of work organization are making sure of having





one's tools laid out and ready to be used for work, organizing procedures, adding or dropping tasks, reviewing, and preparing the upcoming bundle of tasks (Wrzesniewski et al., 2013; Bruning and Campion, 2018). Differently, *social expansion* occurs within the social domain of work and involves changing the scope, number, and nature of social relationships within one's work. Behaviors in this domain involve systematic feedback-seeking or changing how one interacts with others, also changing the boundaries around social activities. For example, in order to get the work done, employees may find ways to relate to their co-workers by getting to know them better, spending more time with the preferred ones, or seek support from people in the work environment (Wrzesniewski et al., 2013; Bruning and Campion, 2018; Breevaart and Tims, 2019). In the context of the pandemic, these relational proactive behaviors are particularly relevant because they increase feelings of social connectedness and provide additional opportunities to stay socially connected, despite spatial dispersion and isolation (Kniffin et al., 2021; Rudolph et al., 2021).

## Self-Leadership and Job Crafting

As a proactive behavior, job crafting is part of a goal-driven process involving setting a proactive goal and striving to achieve it (Parker et al., 2010). Specifically, proactive goal generation consists of envisioning and planning a goal under one's own volition meaning that proactive goal generation is self-initiated and signals psychological ownership of change (Wagner et al., 2003; Parker et al., 2010). Previous research shows that individuals with long-term goals and a focus on growth are more likely to engage in job crafting later (Kooij et al., 2017a) and that self-goal setting positively mediates the motivating power of work engagement on job crafting (Zeijen et al., 2018). Accordingly, we expect employees scoring high on self-goal setting to be stimulated to craft their work proactively (Zeijen et al., 2018).

Moreover, according to proactivity literature, when individuals identify the positive outcomes from their own behaviors and provide self-rewards for these, they are likely to experience positive affect, which will then reinforce their desired actions, energizing themselves to initiate further job crafting behaviors (Parker et al., 2010). Specifically, self-rewards represent promises people make to themselves if they persist and accomplish a particular task, spanning from quite mundane "self-gifts" such as a cup of coffee or gaming, to treating oneself to a luxury good, such as buying an expensive pair of shoes or an exclusive bottle of wine (Koch et al., 2014).

In the context of remote working, such a self-motivating process becomes particularly relevant, since goal attainment is often not clearly linked to rewards (Griffin et al., 2007; Parker et al., 2010), and individuals need to capitalize on their own self-regulation and personal resources to optimally orchestrate their job resources (Wang et al., 2020) and experience wellbeing outcomes. Hence, we expect the self-leadership strategies of self-goal setting and self-reward as mechanisms that differently empower job crafting efforts by sustaining intrinsic and extrinsic motivational processes that bolster individual proactivity. Whereas self-goal setting constitutes a behavioral strategy generating intrinsic motivational processes

that may encourage action (Locke and Latham, 1990), self-reward represents an internal regulatory strategy that is supported externally (Stewart et al., 2011). This complements intrinsic motivational processes in providing the resources needed to proactively arrange the virtual work characteristics in a way that may lead to improved positive work-related outcomes.

Against this background, we propose that during remote work, employees reporting higher levels of self-goal setting and self-rewards will be more likely to initiate social interactions and proactively organize the tangible elements of their work. As such, employees who utilize these strategies are more highly motivated, which allows them to better leverage their available resources toward reorganizing their work tasks and interactions.

*Hypothesis 1:* Self-goal setting is positively associated with (a) social expansion and (b) work organization.

*Hypothesis 2:* Self-rewards are positively associated with (a) social expansion and (b) work organization.

## Job Crafting, Work Engagement, and Task Significance

Through job crafting, employees pursue positive end-states, anticipating the gain of interesting tasks and social relationships, while fulfilling their basic psychological needs in terms of autonomy and relatedness, resulting in higher work engagement (Lichtenthaler and Fischbach, 2019). Work engagement refers to a positive, fulfilling, work-related state of mind characterized by high levels of energy, dedication, and absorption in one's work (Schaufeli et al., 2019). In the context of remote work, engaging in informal communication with colleagues has been shown to be positively related to job satisfaction (Fay and Kline, 2011), where the initiation of social interactions can reduce loneliness due to the reduction of informal social exchanges (Wang et al., 2020). Similarly, employees who are better able to organize the tangible elements of their remote work create additional resources by optimally configuring the resources they already have; hence, creating efficient work processes that positively impact their energy levels and eventually foster work engagement.

Based on these arguments and drawing on meta-analytic evidence supporting the positive link between approach-oriented job crafting and work engagement (Rudolph et al., 2017; Lichtenthaler and Fischbach, 2019; Zhang and Parker, 2019), we expect remote working job crafting to be positively linked to work engagement.

*Hypothesis 3:* (a) Social expansion and (b) work organization are positively associated with work engagement.

Overall, adopting a self-influencing perspective to the management of one's work motivation and job characteristics (Manz, 1986), we expect that job crafting will mediate the relationship between self-leadership and work engagement. In the

context of a relative absence of immediate external constraints (Thoresen and Mahoney, 1974), such as during remote working, individuals who establish targets for their work and build their own intrinsic motivational drivers will benefit from higher resource availability (Hobfoll, 2002) that can be invested to redesign one's job to make it more organized and proactively create a social psychological work context contributing to the natural enjoyment of task performance (Manz, 1986). Hence, we propose self-leadership as a strategy that provides remote workers the inner motivation and focus to alter their environment proactively through job crafting, thereby enabling higher work engagement. In support of this, previous research in non-remote-work contexts shows that when employees use self-management strategies, they create a more resource-rich work environment, which in turn initiate a motivational process whereby employees are more engaged in their work (Xanthopoulou et al., 2009; Breevaart et al., 2014):

*Hypothesis 4:* (a) Social expansion and (b) work organization mediate the relationship between self-goal setting and work engagement.

*Hypothesis 5:* (a) Social expansion and (b) work organization mediate the relationship between self-rewards and work engagement.

During the pandemic, remote workers found themselves separated physically from their colleagues, customers, and normal workplace, alone with their computers, sporadically touching base remotely with those they used to see regularly (Gino and Cable, 2020). In a context where social gatherings have been forbidden, even limited social resources can have had strong positive effects on positive work outcomes (Wang et al., 2020), helping employees re-establish the purpose and value in their work tasks. A general tenet of job crafting research is that employees who craft their work make it more significant and meaningful, crafting more interesting job tasks, and inspiring relationships (Wrzesniewski and Dutton, 2001; Lichtenthaler and Fischbach, 2019). This happens because the meaningfulness of one's work—that is, its purpose and value (*cf.* Grant, 2008)—acts as a lens through which employees understand and respond to their work. Through this lens, employees constantly evaluate whether they believe that their work contributes to making the world a better place, allows them to interact with people in ways that create significant contributions, or that the work provides an opportunity to earn a living (Wrzesniewski et al., 1997). As employees proactively change the task and relational components of their jobs, the emphasis of their activities and interactions shifts in ways that can profoundly impact their experience of the work and their understanding of the meaningfulness of it, which comes from employees' perceptions of task significance (Grant, 2008; Wrzesniewski et al., 2013). Research shows that task significance can be rooted in both characteristics of the job itself (Hackman and Oldham, 1975; Grant, 2007) and relational mechanisms, with relationships being sources of task significance perceptions by connecting one's job and actions to other people (Zalesny and Ford, 1990), while the relational aspects also enhance perceptions of social impact

and social worth (Grant, 2008). Following this reasoning, employees who crafted their remote working experiences during the pandemic may have had higher chances of getting more resource value out of their set of tasks (Bruning and Campion, 2018) and build task significance as a subjective judgment that is socially constructed in interpersonal interactions (Grant, 2008). Thus, we expect employees' job crafting activities during remote working will result in boosting task significance experienced in their work.

*Hypothesis 6:* (a) Social expansion and (b) work organization are positively associated with task significance.

Altogether, self-leadership strategies will serve to build intrinsic motivation by enhancing one's feelings of competence and self-control (Deci, 1975; Manz, 1986) which, by enabling job crafting activities that alter job processes and the social context of work, enhance feelings of task significance. That is, based on the inner driving forces built through self-leadership, individuals will be able to alter the boundaries of their jobs in ways that allow them to experience and realize their purpose in work (Wrzesniewski et al., 2013) thereby experiencing higher task significance as a sense of purpose and beliefs in their work as an impactful activity. Hence, we further propose that job crafting mediates the role of self-leadership in enhancing task significance, with self-leadership strategies serving to create an inner driving force to craft activities that are more personally meaningful and rewarding (Manz, 1986).

*Hypothesis 7:* (a) Social expansion and (b) work organization mediate the relationship between self-goal setting and task significance.

*Hypothesis 8:* (a) Social expansion and (b) work organization mediate the relationship between self-rewards and task significance.

## MATERIALS AND METHODS

### Procedure and Participants

Weekly diary data were collected over 3 weeks among employees working in a company offering services for the architecture and engineering of infrastructural networks located in Italy. At the time of the study, remote-work schedules were arranged in agreement with line managers. During the weeks of data collection, participants reported having worked remotely for, on average, 28.59 h/week ( $SD = 14.47$ ).

All employees ( $n = 208$ ) were invited to participate in the research by the HR managers, who mailed them an invitation with a link to the first online survey and information about the study. Participants were informed that their participation was voluntary and that responses would be kept confidential. Data collection started in mid-January of 2021 and lasted until mid-February of the same year. During this period, there were no significant deviations in working conditions

due to the COVID-19 pandemic. Throughout the length of the study, a situation of constant high (non-critical) national alarm severely reduced travel and imposed limitations on where people could work. Survey links were sent for 3 weeks, with 1 week off between each following survey. This time frame was established with the HR function and was aimed at allowing more remote working days per employee. Along with scales to measure the study variables, the first survey also collected demographic information. Participants were asked to identify themselves using a self-generated code to match their following surveys in every survey. In each survey, participants were asked to fill in the questionnaire referring to their latest remote working experience.

The final sample consisted of 155 Italian employees (74.52% response rate), of which 53% were female ( $n=82$ ). Participants ( $n$  observations = 329) reported a mean age of 37.92 ( $SD=7.33$ ) and had worked on average 5.34 years ( $SD=5.32$ ) in the company. The majority of respondents held a masters' degree or higher (58.1%), followed by a high school diploma (31%) or a bachelors' degree (10.3%). A 77% of the participants had a permanent full-time contract, and 30% reported having care duties at home (referred to as "non-formal domestic work carried out for non-self-sufficient people, such as children, the elderly and the disabled").

## Measures

All measures were administered in Italian. Scales not available in Italian were translated using the forward-backward translation method (Behling and Law, 2000). The time frame of the scales and the number of items were adapted to be answered on a weekly basis (Ohly et al., 2010). In all surveys, we asked participants to reflect upon their experiences during the past week and indicate how each item was representative of their most recent remote-work experience.

### Weekly Self-Leadership

Weekly self-leadership during remote working was measured with five items measuring the behavioral strategies of self-goal setting (3 items, i.e., "This week, when working remotely, I consciously had goals in mind for my work efforts") and self-rewards (2 items, i.e., "This week, when working remotely, when I did something well, I treated myself to some thing or activity I especially enjoy") developed by Houghton and Neck (2002). Items were rated on a seven-point scale (1 = *never*; 7 = *very often*).

### Weekly Job Crafting

Weekly job crafting during remote working was measured with nine items from the scale developed by Bruning and Campion (2018), measuring two dimensions of job crafting, namely, social expansion (3 items, i.e., "This week, when working remotely, I actively initiated positive interactions with others at work") and work organization (3 items, i.e., "This week, when working remotely, I created a structure in my work processes"). Items were rated on a seven-point scale (1 = *never*; 7 = *very often*).

### Weekly Work Engagement

Weekly work engagement was measured with three items from the ultra-short measure for work engagement developed by Schaufeli et al. (2019), i.e., "This week, when working remotely, I felt bursting with energy" (vigor); "This week, when working remotely, I felt enthusiastic about my job" (dedication); and "This week, during remote working, I was immersed in my work" (absorption). Participants answered on a seven-point scale (0 = *Not at all*; 6 = *To a very large degree*).

### Weekly Task Significance

Weekly task significance was measured with three items (i.e., "This week, when working remotely, I felt like the results of my work significantly affected the lives and well-being of other people" from the revised Job Diagnostic Survey; Idaszak and Drasgow, 1987). Participants indicated how accurately or inaccurately each statement described their job on a seven-point scale (1 = *Very inaccurate*; 7 = *Very accurate*).

## Statistical Approach

Our data have a multilevel structure, with week-level measures (Level 1) nested within employees (Level 2). We calculated the intra-class correlations (ICC1; Bliese, 2000) for our variables before hypothesis testing. The between-persons variance for our variables varied from 74% for work organization to 52% for self-rewards, warranting an examination of our hypotheses that accounts for the variation between clusters in our variables.

We conducted multilevel confirmatory factor analysis (MCFA) in *Mplus* version 8.4 (Muthén and Muthén, 2012) to examine the factorial validity of our measures and estimate their multilevel composite reliabilities ( $\omega$ ; Geldhof et al., 2014). A six-factor model was specified at both the within- and between levels, estimating the loadings of respective items on the latent variables (i.e., self-goal setting, self-rewards, social expansion, work organization, work engagement, and task significance). Multilevel composite reliability ( $\omega$ ) was estimated at both levels of analysis using estimated level-specific factor loadings and residual variances. Correlations among the latent factors at both levels were freely estimated.

To test our hypotheses, we used multilevel modeling in *Mplus* version 8.4 (Muthén and Muthén, 2012). Multilevel modeling is based on decomposing the data into within-person (week-level) and between-person (person-level) parts and modeling each of these parts with their own model (Muthén and Asparouhov, 2008). Following previous research, we used observed variables to avoid overly complex modeling (cf. Bakker and Oerlemans, 2019; Chong et al., 2020; Sonnentag et al., 2021).

In our analysis, we controlled for age, which has been shown to relate to job crafting (Kooij et al., 2017b). Gender was also controlled for since it is likely that the pandemic differently affected men and women (Kniffin et al., 2021). Additionally, the number of remote working hours in the previous week was controlled for, since this may have affected the extent to which employees felt the need to engage in self-leadership and job crafting during remote working. Age and gender were specified as between-level variables since

they only had between variance and were centered at the grand mean to aid interpretation (Preacher et al., 2010). Weekly self-leadership (self-goal setting and self-rewards), job crafting (social expansion and work organization), work engagement, and task significance, as well as number of remote working hours in the previous week, were not specified as either within or between variables and were modeled at both levels as their variance was partitioned into within- and between components (Preacher et al., 2010). This procedure implies that the weekly level variables are implicitly centered at the person-level (Preacher et al., 2010), removing the between-person variance from the within-person part of the model (Sonnetag et al., 2021).

## RESULTS

### Preliminary Analyses and Descriptive Statistics

Results from the MCFA showed that the six-factor model estimated simultaneously at both levels fit the data well,  $\chi^2_{(208)} = 317.70$ ,  $p < 0.001$ ; root-mean-square error of approximation (RMSEA) = 0.04, and standardized root-mean-square residual (SRMR)  $\text{SRMR}_{\text{within}} = 0.06$ ;  $\text{SRMR}_{\text{between}} = 0.07$ , where RMSEA and SRMR values of 0.08 or less indicate adequate fit (Hu and Bentler, 1999). All indicators significantly loaded on their respective factors. An alternative model in which the items from the two self-leadership strategies (self-goal setting and self-rewards), the two job crafting dimensions (social expansion and work organization), and the two outcome variables loaded into a three-factor ( $\chi^2_{(232)} = 859.79$ ,  $p < 0.001$ ; RMSEA = 0.09,  $\text{SRMR}_{\text{within}} = 0.47$ ;  $\text{SRMR}_{\text{between}} = 0.58$ ) had a poorer fit to the data, supporting six factors as distinct.

**Table 1** shows descriptive statistics, within- and between-persons reliabilities, intra-class correlations coefficients (ICCs) for weekly measures, and correlations among the variables. The within-person reliabilities were acceptable, showing the ability of the scales to detect changes for a person over weeks. Similarly, between-person reliabilities were acceptable and able to discriminate different people's weekly average measures.

### Hypotheses Testing

We tested our hypotheses in a model with similar paths at the within- and between-person levels, except for the paths involving gender and age modeled only at the between level. Control variables included gender, age, and number of remote working hours in the previous week. The multilevel model fit well to the data:  $\chi^2_{(24)} = 53.42$ ,  $p < 0.001$ ; RMSEA = 0.06,  $\text{SRMR}_{\text{within}} = 0.07$ ;  $\text{SRMR}_{\text{between}} = 0.07$ . **Figure 2** shows the unstandardized estimates and significance levels of the significant relationships found.

#### Self-Leadership → Job Crafting

Hypothesis 1 proposed that self-goal setting is positively associated with job crafting in terms of (a) social expansion and (b) work organization. As shown in **Table 2**, on weeks when employees

reported higher self-goal setting, they engaged more often in social expansion ( $\text{estimate} = 0.23$ ,  $se = 0.09$ ,  $t = 2.62$ ,  $p \leq 0.01$ ) and proactively organized their work processes more often ( $\text{estimate} = 0.31$ ,  $se = 0.06$ ,  $t = 5.19$ ,  $p < 0.001$ ) while working remotely. The same relationships were also significant when examining differences between employees, with self-goal setting being significantly positively associated with both social expansion ( $\text{estimate} = 0.79$ ,  $se = 0.12$ ,  $t = 6.72$ ,  $p < 0.001$ ) and work organization ( $\text{estimate} = 1.07$ ,  $se = 0.09$ ,  $t = 11.59$ ,  $p < 0.001$ ). Hence, Hypothesis 1 is confirmed.

Hypothesis 2 proposed that self-rewards are positively associated with job crafting in terms of (a) social expansion and (b) work organization. At the within level, results showed that on weeks when employees reported higher self-rewards, they engaged more often in social expansion ( $\text{estimate} = 0.08$ ,  $se = 0.04$ ,  $t = 1.93$ ,  $p \leq 0.05$ ) but did not proactively organize their work processes more often while working remotely. When examining differences between employees, self-rewards resulted significantly positively associated with social expansion ( $\text{estimate} = 0.24$ ,  $se = 0.09$ ,  $t = 2.81$ ,  $p = 0.005$ ) but not with work organization. Hence, Hypothesis 2a is confirmed while Hypothesis 2b is rejected.

#### Job Crafting → Work Engagement

Hypothesis 3 stated that job crafting behaviors in terms of (a) social expansion and (b) work organization are positively associated with work engagement. At the within level, results (see **Table 3**) showed that on weeks when employees reported higher social expansion behaviors during remote working, they experienced higher work engagement ( $\text{estimate} = 0.21$ ,  $se = 0.08$ ,  $t = 2.53$ ,  $p = 0.01$ ), but no significant relationships were found with work organization. At the between level, neither social expansion nor work organization were significantly associated with work engagement. Accordingly, Hypothesis 3a is confirmed only at the within level, while Hypothesis 3b is rejected.

#### Self-Leadership → Job Crafting → Work Engagement

The indirect effects of self-goal setting (Hypothesis 4) and self-rewards (Hypothesis 5) on work engagement *via* remote working job crafting (a—social expansion; b—work organization) were tested with *Mplus* following the procedure by Preacher et al. (2010) and the Monte Carlo method with 20,000 repetitions (Preacher and Selig, 2010). As reported in **Table 4**, weekly social expansion significantly mediated the effect of self-goal setting on work engagement ( $\text{estimate} = 0.05$ ,  $se = 0.02$ ,  $t = 2.07$ ,  $p = 0.04$ ; 95%CI [0.01, 0.11]), while all the other indirect effects were not significant. Hence, Hypothesis 4a is confirmed only at the within level, while Hypothesis 4b, and Hypotheses 5a and 5b are rejected.

#### Job Crafting → Task Significance

Hypothesis 6 proposed that job crafting behaviors in terms of (a) social expansion and (b) work organization are positively associated with task significance. As it can be seen in **Table 3**, at the within level no significant relationships were found. Differently, when considering differences between employees, results showed that those reporting higher social expansion



TABLE 1 | Descriptive statistics and correlations among the study variables.

Variable	<i>M</i> ( <i>SD</i> ) <sub>B</sub>	<i>ω</i> <sub>B</sub>	<i>M</i> ( <i>SD</i> ) <sub>W</sub>	<i>ω</i> <sub>W</sub>	ICC	1	2	3	4	5	6	7	8	9
Age	36.96 (11.16)	-	-	-	-	(-)	0.14*	0.09	0.19**	0.04	0.09	0.11	0.17**	0.04
Gender	1.47 (0.50)	-	-	-	-	0.14*	(-)	-0.14**	-0.21**	0.03	-0.13*	-0.22**	-0.10	0.14*
Remote working hours	28.59 (13.63)	-	28.59 (14.47)	-	-	0.09	-0.15**	(-)	0.19**	0.08	0.24**	0.29**	0.21**	0.01
Self-goal setting	5.94 (0.97)	0.98	5.94 (1.07)	0.68	0.66	0.20**	-0.23**	0.23**	(-)	0.17**	0.49**	0.72**	0.48**	0.23**
Self-rewards	3.47 (1.48)	0.97	3.47 (1.71)	0.83	0.52	0.04	0.03	0.10	0.21**	(-)	0.29**	0.19**	0.26**	0.09
Social expansion	5.28 (1.28)	0.98	5.28 (1.38)	0.74	0.74	0.10	-0.14*	0.27**	0.53**	0.32**	(-)	0.49**	0.48**	0.32**
Work organization	5.67 (1.11)	0.96	5.67 (1.19)	0.68	0.74	0.11*	-0.23**	0.32**	0.79**	0.22**	0.51**	(-)	0.45**	0.21**
Work engagement	4.90 (1.33)	0.97	4.90 (1.43)	0.78	0.72	0.19**	-0.11*	0.24**	0.54**	0.28**	0.51**	0.48**	(-)	0.14*
Task significance	5.21 (1.12)	0.91	5.21 (1.25)	0.58	0.63	0.04	0.15**	0.03	0.27**	0.14*	0.36**	0.23**	0.15**	(-)

Between-person (B) correlations below the diagonal (*n* = 155). Within-person (W) correlations above the diagonal (*n* = 329). *ω* = Reliability of change; Remote working hours = Number of remote working hours during the previous week. ICC = intra-class correlation coefficient. Gender: 1 = Female; 2 = Male. \**p* < 0.05; \*\**p* < 0.01.

while working remotely also scored higher in task significance during the weeks (*estimate* = 0.31, *se* = 0.13, *t* = 2.44, *p* = 0.02), while no significant relationships were found for work organization. Hence, Hypothesis 6a is confirmed only at the between level while Hypothesis 6b is rejected.

### Self-Leadership → Job Crafting → Task Significance

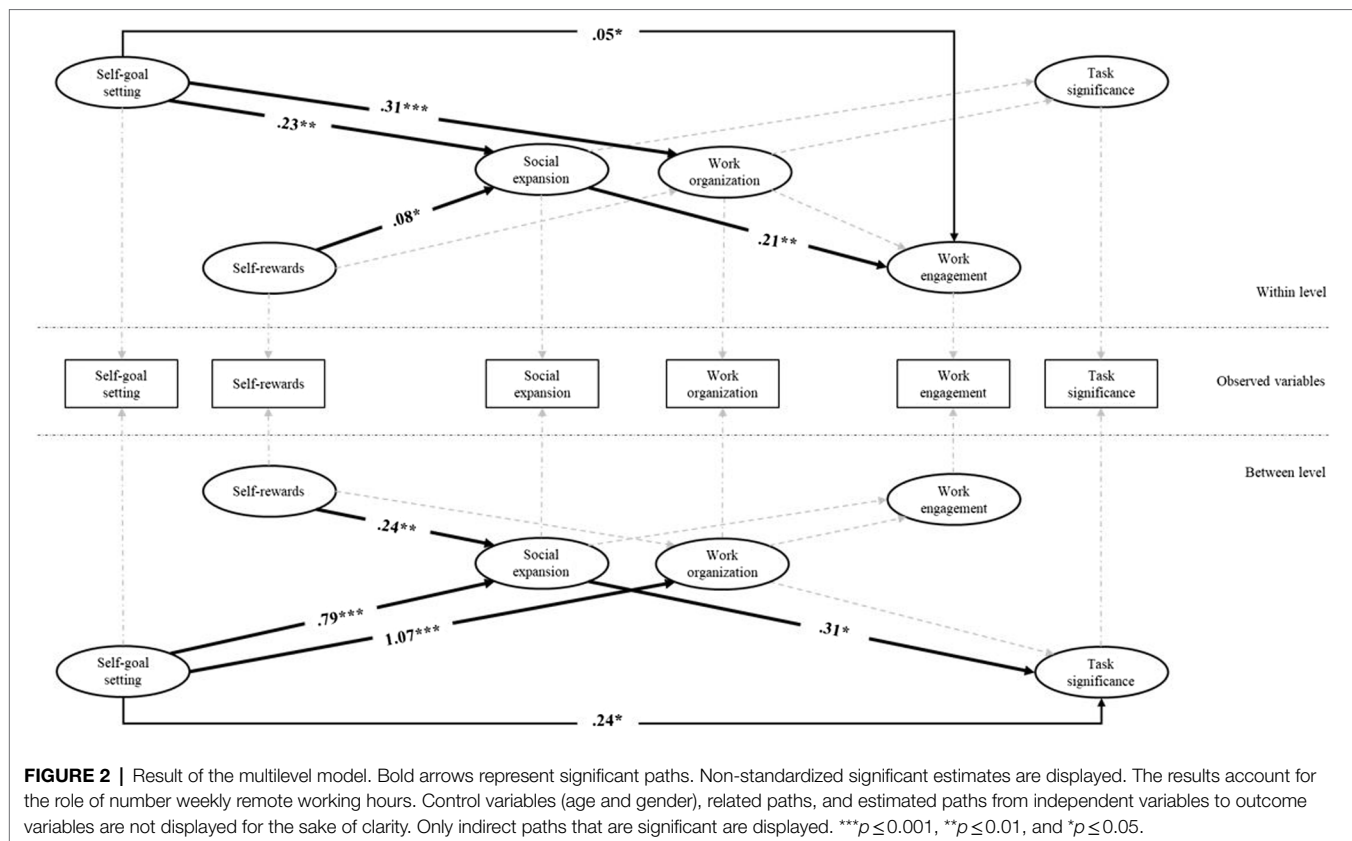
As displayed in Table 5, the test of the indirect effect of self-leadership on task significance *via* job crafting (Hypothesis 7 and 8) showed that, only at the between level, self-goal setting was significantly indirectly linked to higher task significance *via* social expansion behaviors (*estimate* = 0.24, *se* = 0.10, *t* = 2.42, *p* = 0.02; 95%CI [0.02, 0.50]). All the other indirect effects were not significant. Accordingly, Hypothesis 7a is supported at the between level, while Hypothesis 7b, 8a, and 8b are rejected.

## DISCUSSION

### Theoretical Contributions

Results of the current research advance proactivity literature by showing that self-leadership enables the proactive initiation of social interactions during remote working and that some proactive strategies are more effective in driving certain downstream outcomes than others. Results provide further support for the theoretical link between job crafting and work engagement (Zhang and Parker, 2019) and (to the best of our knowledge) provide the first support for the effect of job crafting on task significance during remote working. The study also contributes to job crafting literature by providing evidence for the role of a specific form of job crafting (i.e., social expansion) as a mediating mechanism between self-leadership and critical work outcomes. Additionally, results show that the proactive and self-regulatory processes occurring during remote work are not consistent across different level of analysis, suggesting that these processes unfold differently when considering differences in self-regulatory efforts between individuals or changes in these efforts over time within a same person.

Namely, social expansion mediated the relationship between self-goal setting and task significance at the between level, and the relationship between self-goal setting and work engagement at the within level, but no other indirect effects were supported. These results enrich self-leadership and job crafting literature by showing that self-goal setting is an effective driver of work engagement and task significance through social expansion and that self-rewards and work organization may be less effective in driving the critical work outcomes explored in this study. Additionally, given that the indirect effect of self-goal setting on work engagement through social expansion was only significant at the within level, this implies that work engagement may be more fluid within person during the time-period explored in our study, and conversely, that task significance may require longer-term exploration and be less fluid in the short-term. This notion is further supported in that no variables predicted task significance at the within level, and no variables predicted work engagement at the between level.



**TABLE 2 |** Unstandardized coefficients from multilevel path modeling predicting social expansion and work organization.

Variable	Social expansion				Work organization			
	Est.	SE	t	p	Est.	SE	t	p
<i>Between-person level</i>								
Intercept	-0.23	0.66	-0.34	0.73	-0.92	0.56	-1.65	0.10
Self-goal setting	0.79	0.12	6.72	<0.001	1.07	0.09	11.59	<0.001
Self-rewards	0.24	0.09	2.81	0.01	0.06	0.07	0.89	0.38
Residual variance	0.81	0.20	4.04	<0.001	0.21	0.07	3.05	0.002
<i>Within-person level</i>								
Self-goal setting	0.23	0.09	2.62	0.001	0.31	0.06	5.19	<0.001
Self-rewards	0.08	0.04	1.93	0.05	0.04	0.04	1.06	0.29
Residual variance	0.45	0.07	6.38	<0.001	0.33	0.05	7.14	<0.001

Estimates are unstandardized, resulting from one overall analysis including the prediction of the different self-leadership strategies on work engagement and task significance via job crafting behaviors.

While self-rewards predicted social expansion at both levels, no other significant relationships were found between this predictor and any other variable at either level. From a theoretical perspective, these findings emphasize that while self-rewards represent a self-influence strategy, such a strategy then triggers relational mechanisms through which remote workers can experience their actions as related and connected to other people (Ryan and Deci, 2000). Hence, workers rewarding themselves for their own good work have a higher focus on how their work results may fit in with overall work goals. Then, when

they feel such goals have been attained, they look for ways to consolidate and link their individual contribution to others at work. However, results also suggest that this type of self-leadership may not be an effective means of driving downstream work outcomes, perhaps because the rewards employees provide for themselves may not always be proximally related to the workplace. For example, while people may reward themselves for accomplishing a work task and reach out to a colleague to share such an achievement, the motivational driver coming from the experience of rewarding oneself may be experienced

**TABLE 3 |** Unstandardized coefficients from multilevel path modeling predicting work engagement and task significance.

Variable	Work engagement				Task significance			
	Est.	SE	t	p	Est.	SE	t	p
<i>Between-person level</i>								
Intercept	−0.55	0.88	−0.62	0.53	2.98	0.87	3.43	0.001
Self-goal setting	0.78	0.44	1.78	0.08	0.14	0.45	0.31	0.76
Self-rewards	0.13	0.10	1.39	0.16	0.05	0.10	0.50	0.62
Social expansion	0.21	0.15	1.39	0.17	0.31	0.12	2.53	0.01
Work organization	−0.12	0.34	−0.37	0.72	−0.07	0.35	−0.20	0.84
Residual variance	0.83	0.13	6.60	<0.001	0.80	0.11	6.99	<0.001
<i>Within-person level</i>								
Self-goal setting	0.16	0.11	1.45	0.15	0.07	0.10	0.66	0.51
Self-rewards	0.06	0.05	1.29	0.20	−0.07	0.05	−1.25	0.21
Social expansion	0.21	0.08	2.56	0.01	0.13	0.10	1.31	0.19
Work organization	0.13	0.09	1.53	0.13	0.08	0.10	0.77	0.44
Residual variance	0.47	0.08	5.66	<0.001	0.55	0.07	7.48	<0.001

Estimates are unstandardized, resulting from one overall analysis including the prediction of the different self-leadership strategies on work engagement and task significance via job crafting behaviors.

**TABLE 4 |** Indirect effects of self-leadership on work engagement via job crafting.

Indirect effect x → m → y	Between level				Within level			
	Est.	SE	t	p	Est.	SE	t	p
Self-goal setting → social expansion → work engagement	0.17	0.12	1.40	0.16	0.05	0.02	2.07	0.04
Self-goal setting → work organization → work engagement	−0.16	0.33	−0.49	0.62	0.04	0.03	1.45	0.15
Self-rewards → social expansion → work engagement	0.05	0.04	1.23	0.22	0.02	0.01	1.45	0.15
Self-rewards → work organization → work engagement	−0.01	0.02	−0.44	0.66	0.01	0.01	1.00	0.32

Estimates are unstandardized, resulting from one overall analysis including the prediction of the different self-leadership strategies on work engagement and task significance via job crafting behaviors.

as personal, rather than professional, and may not be leveraged as a mechanism for driving downstream significance in their work or further engagement in other work-related tasks.

Meanwhile, self-goal setting had significant relationships with both social expansion and work organization at the within- and between levels, as well as the indirect relationships already discussed. These findings provide further support for the robustness of goal-setting theory (Locke and Latham, 1990) for driving positive work outcomes such as work engagement (Weintraub et al., 2021). These results support the notion that self-goal setting can help sustain more fluid variables such as work

engagement by providing the self-motivation and self-direction needed to facilitate behaviors that may be necessary yet undesirable to accomplish work tasks (Bakker and van Woerkom, 2017). Furthermore, results suggest that self-goal setting can help drive downstream effects which are more stable and may take longer to develop such as task significance. In the context of being isolated at home during a global pandemic while working, these results suggest that self-goal setting allowed workers to stay connected to their co-workers through social expansion, which may have led to the fulfillment of the need for relatedness and a feeling that the work their community does is more meaningful.

**TABLE 5** | Indirect effects of self-leadership on task significance *via* job crafting.

Indirect effect x → m → y	Between level				Within level			
	Est.	SE	t	p	Est.	SE	t	p
Self-goal setting → social expansion → task significance	0.24	0.10	2.42	0.02	0.03	0.03	1.18	0.24
Self-goal setting → work organization → task significance	−0.14	0.36	−0.39	0.69	0.03	0.03	0.83	0.41
Self-rewards → social expansion → task significance	0.07	0.04	1.85	0.06	0.01	0.01	1.08	0.28
Self-rewards → work organization → task significance	−0.01	0.01	−0.36	0.72	0.01	0.01	0.67	0.50

Estimates are unstandardized, resulting from one overall analysis including the prediction of the different self-leadership strategies on work engagement and task significance *via* job crafting behaviors.

Finally, while work organization was predicted by self-goal setting at the within-level and at the between level, it was not a predictor of either work outcome explored in this study. From a theoretical standpoint, it may be that the way one organizes their work does not affect the way the work itself is perceived or inspires workers to engage more fervently with their work tasks. Instead, it may be more of a logistical strategy than one which drives changes in states such as engagement or attitudes about one's work such as task significance.

## Practical Implications

From a practical standpoint, the current study had clear takeaways which can be leveraged by individuals, teams, and organizations. First, if the aim is to drive improvements in task significance and work engagement in a remote-work context, organizations should encourage employees to set goals for themselves and that at least a portion of these goals should be related to social expansion. For example, employees may be encouraged to meet with colleagues to discuss work tasks and how they might collaborate on projects. This encouragement could be communicated verbally by leadership or utilize mechanisms like nudges (Thaler and Sunstein, 2008) in which goal-setting frameworks are introduced and encouraged *via* e-mail or app-delivered reminders (Weintraub et al., 2021). Such strategies can teach individuals the skills needed to set goals for themselves while also preserving autonomy and the self-leadership aspect of this strategy.

Meanwhile, our results suggest that self-rewards may be an effective strategy for driving social expansion but are not a potent enough intervention to influence the work outcomes of task significance or work engagement. Therefore, if companies have limited resources and need to choose between encouraging self-rewards or self-goal setting, self-goal setting has the potential to have more incremental value. However, if organizations are

struggling with building a sense of community, self-rewards may still be an effective means of driving social expansion within organizations. Similarly, our findings suggest that work organization may not be worth spending organizational resources on in situations where building work engagement or task significance are the goals.

## Limitations and Future Research

While this study does provide many theoretical and practical contributions, like all studies, there are limitations that should also inspire future research. First, it must be noted that this study was conducted during a global pandemic. As such, there may be a distinction between working remotely in this context compared to remote work in the future. For example, our findings regarding work organization may have limited generalizability in that workers may have less autonomy over managing behavior or physical surroundings to increase structural job resources since they are unlikely to have planned to work in the conditions which were present in the current study. For example, workers in this study could have typically worked in traditional in-person office settings but had to quickly shift to working from home due to COVID-19. As such, rather than choosing living situations which they could have more control over physical surroundings, they were likely forced into spaces where they had not planned to do work, and which may not be conducive to working (i.e., sharing small spaces where roommates are also working or where children are home from school). Future research should replicate the current study and ask individuals about their *typical* work environment, more detailed accounts of their work-from-home setup (e.g., whether they have their own private home-office or work in the same room with others), and whether they feel they have the resources to accomplish their work properly while working remotely.



It should be noted that our sample size was relatively small and that all participants came from a single company, which may limit the generalizability of our findings. Additionally, mean values for self-rewards in our sample were relatively low (i.e., mean = 3.47, range = 1–7), especially when compared with other variables (i.e., self-goal setting mean = 5.95). This implies that self-rewards were not very commonly used in this sample, which could have impacted our ability to find support for our hypotheses. Conversely, participants in our sample frequently reported generally high self-goal setting and job crafting behaviors. While the analyses we adopted focused on how deviations from individual means are associated with high/lower outcomes, these aspects should be considered when evaluating our findings. As such, future research should intentionally recruit a larger number of participants, from multiple organizations, with a wider range of self-rewarding and proactive behaviors, to better examine the relationships of interest.

This study focused on self-leadership as an antecedent of job crafting behaviors aiding positive remote working experiences. There are, however, other personal attributes and contextual factors that may influence self-regulation strategies and processes that we did not include (e.g., trait emotional stability, conscientiousness, work-related self-efficacy, level of work autonomy, presence of clearly specified goals, and fit-discrepancy between self-settled and organizational goals). Similarly, in this research, we focused on psychological work-related outcomes and did not investigate any potential effect on employees' health. Future research could examine the role of personal attributes and contextual variables in explaining proactivity and its effects during remote working. The effect of self-leadership strategies and job crafting on other work outcomes such as objective performance and wellbeing, including health indicators, should also be explored.

In the current study, we did not examine the types of rewards or goals that workers set or provided for themselves. For example, with regard to rewards, some workers may have been providing big, expensive rewards for themselves while others may have rewarded themselves with smaller things, or even with different categories of rewards (i.e., monetary rewards vs. allowing themselves to eat a treat they enjoy vs. giving themselves time to relax). Likewise, the content of goals has been shown in previous research to have differential effects on downstream variables such as work engagement (Weintraub et al., 2021). Therefore, future research should aim to utilize a mixed-methods approach in which quantitative and qualitative aspects of goals and rewards can be further examined.

Finally, all the variables in our study were self-assessed, and the design of this study was observational in nature, which may lead to the risk of common method bias (Podsakoff et al., 2003). However, it may be argued that employees themselves are best suited to self-report their self-leadership processes because they are the ones who are aware of how they proactively manage their motivational processes while working remotely. Moreover, evidence from research shows high agreement between self- and peer-ratings of approach-oriented job crafting (Tims et al., 2012). Also, multilevel confirmatory factor analyses revealed a good fit, indicating construct validity, which represents

one way to rule out substantial method effects (Conway and Lance, 2010). Still, the fact that our variables were assessed at the same time point in time, at the end of the week, makes it important for future studies to employ experimental designs in which interventions can be further assessed for causality and across a longer period of time to examine the longevity of the potency of their effects. Given the potential for the fluctuation in variables such as work engagement within day, future research could also record more frequent measurements to further examine how these strategies might affect job crafting behaviors within the same day (daily diary studies) as well as over longer periods of time, which could also differentially affect work outcomes.

## CONCLUSION

This study explored the effects of self-leadership practices on key work outcomes in a remote-work environment during a global pandemic and the mediating role of job crafting on this relationship. In particular, the study explored social expansion and work organization mediating the relationships between self-goal setting and self-rewards predicting work engagement over time. It was also the first known study to explore the effect of job crafting on task significance during remote working. Overall, our results provided support for these theoretical assertions. Although nuanced, findings suggest that self-goal setting is a particularly potential self-leadership strategy that leads to job crafting and the work outcomes of task significance and work engagement. These results also provide practical implications for self-goal setting as a self-leadership strategy that should be encouraged by organizations. Future research should employ mixed-method experimental designs which test interventions and examine how individual differences may affect these relationships over time.

## DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## ETHICS STATEMENT

Ethical review and approval were not required for the study on human participants in accordance with the local legislation and institutional requirements. The patients/participants provided their written informed consent to participate in this study.

## AUTHOR CONTRIBUTIONS

AC and JW contributed to conception and design of the study and wrote the first draft of the manuscript. AC organized the database and performed the statistical analysis. All authors contributed to the article and approved the submitted version.

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# Sensory Processing Sensitivity as a Predictor of Proactive Work Behavior and a Moderator of the Job Complexity–Proactive Work Behavior Relationship

Antje Schmitt\*

Department of Psychology, University of Groningen, Groningen, Netherlands

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University of Bergen, Norway

### \*Correspondence:

Antje Schmitt  
a.schmitt@rug.nl

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This study investigates the role of sensory processing sensitivity (SPS) as a predictor of employees' proactive work behavior. SPS is a multidimensional concept that depicts differences in people's sensory awareness, processing, and reactivity to internal and external influences. Based on research on SPS as grounded in a heightened sensitivity of the behavioral inhibition and activation systems, it was argued that the relationships with task proactivity and personal initiative as indicators of proactive work behavior differ for the three SPS dimensions. Furthermore, based on the person–environment fit perspective, SPS was assumed to moderate the relationship between employees' job complexity and proactivity. The hypotheses were tested in two two-wave studies ( $N = 215$  and  $N = 126$ ). Across both studies, ease of excitation (EOE; i.e., the tendency to be easily overwhelmed by changes) was unrelated to proactivity. Low sensory threshold (LST; i.e., unpleasant arousal from external stimuli) was negatively related to personal initiative, only in Study 2, but it did not predict task proactivity. Meanwhile, aesthetic sensitivity (i.e., AES; awareness of and openness to positive stimuli) was positively related to proactivity, but in Study 2, this relationship could only be established for personal initiative. Moreover, job complexity was positively related to proactivity for those employees high but not for those low in AES. EOE and LST did not act as moderators. This study offers evidence of positive behavioral implications among highly sensitive persons when dealing with job complexity. Overall, the study presents an interesting point of departure for the role of SPS in employee proactivity that calls for more research.

**Keywords:** job complexity, proactive work behavior, sensory processing sensitivity, employees, person–environment fit

## INTRODUCTION

Considering fast-changing work environments and the growth of knowledge-intensive work (Grant and Ashford, 2008; Sung et al., 2017), organizations benefit from employees who engage in proactive work behavior. As a broad term, proactive work behavior denotes individuals' self-initiated, agentic, and future-oriented efforts to change their work environments



or themselves in positive ways (Parker et al., 2010; Parker and Collins, 2010). It entails planning ahead and preparing for anticipated threats and dangers by taking the initiative at present (Frese et al., 1997; Grant and Ashford, 2008). People differ in the extent to which they show proactive work behavior (for an overview, see Wu and Li, 2017). For example, research on the antecedents of proactive work behavior reveals that people high in proactive personality, future orientation, and positive affectivity are more likely to engage in proactivity than those who are low in these traits (Parker et al., 2010; Tornau and Frese, 2013; Wu and Li, 2017).

The first goal of the current study is to add to the stream of research on interindividual differences in proactive work behavior by investigating the relationship between proactive work behavior and the concept of sensory processing sensitivity (SPS). SPS is a specific personality characteristic that captures interindividual differences in people's awareness and processing of sensory information and their reactivity to internal and external stimuli (Aron and Aron, 1997). It has a strong biological basis, reflected in neurological correlates, and has been examined in human and non-human animals (Greven et al., 2019). SPS has received increasing societal recognition in the last few years (Greven et al., 2019). This is evident from the growth in self-help literature, coaching, and consulting interventions, which are, however, often not based on scientific knowledge (Bröhl et al., 2022). Although research on SPS is growing steadily, studies linking and applying it to employee experiences in the workplace are lacking (exceptions include Andresen et al., 2018; Vander Elst et al., 2019). In particular, little is known about how SPS affects the employees' self-initiated, future-, and change-oriented work behavior behaviors.

Research proposes that SPS is multidimensional (Smolewska et al., 2006; Lionetti et al., 2019). *Ease of excitation* (EOE) refers to being mentally overwhelmed by internal or external stimuli (e.g., experiencing discomfort when many things occur at once). *Low sensory threshold* (LST) refers to unpleasant sensory arousal in the face of intense stimuli, such as loudness and bright lights. *Aesthetic sensitivity* (AES) relates to the awareness of and openness to positive aspects of one's surroundings. These three components of SPS are distinctly correlated with other personality traits and individual outcomes, such as well-being (for an overview, see Greven et al., 2019; Lionetti et al., 2019). A deeper cognitive processing of and a stronger reactivity to both positive and negative stimuli might have differential effects on employees' proactive work behavior. In line with theory and previous research that argues that EOE and LST are associated with heightened activity in the behavioral inhibition system (BIS; Gray, 1991; Pluess et al., 2018), I argue that these dimensions may act as vulnerability factors that inhibit approach behaviors, such as proactivity. AES is assumed to be conducive to proactive work behavior due to its relationship with the heightened sensitivity of the behavioral activation system (BAS; Gray, 1991), indicating high appetitive motivation and the urge to engage in approach behavior.

The second goal of this study is to investigate whether SPS explains interindividual differences in how employees respond

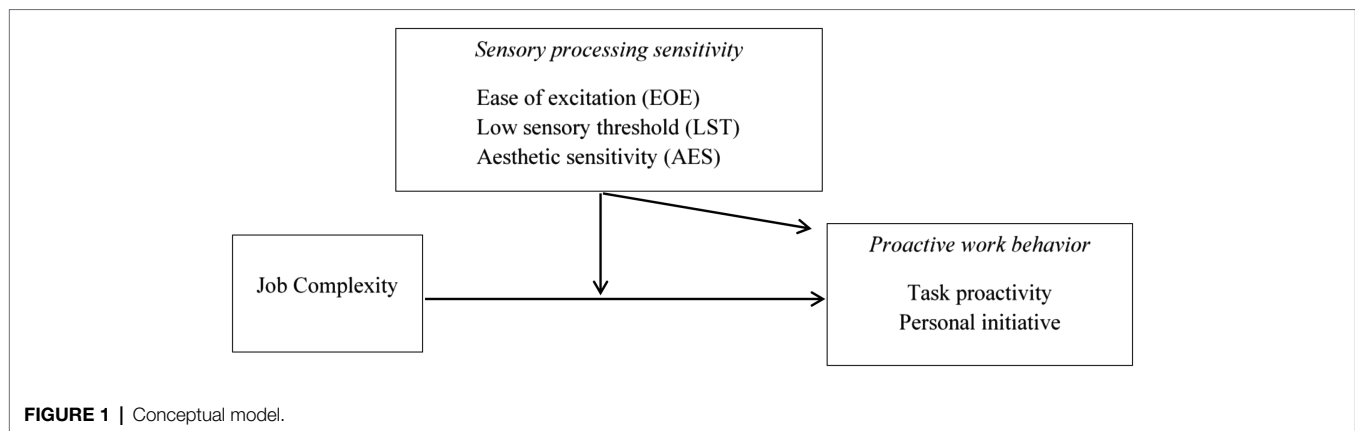
to job complexity in terms of their proactive work behavior. Job complexity refers to a job being mentally demanding, difficult, and challenging to perform (Campbell, 1988; Humphrey et al., 2007). Theory and research widely suggest positive relationships between perceived job complexity and proactive work behavior (Ohly et al., 2006; Frese et al., 2007; Ohly and Schmitt, 2017). However, job complexity might not be seen as desirable by all employees; it can also have costs for the individual because it draws on resources, such as mental energy, potentially causing strain (LePine et al., 2005; Sung et al., 2017). Based on the person–environment (P–E) fit perspective (Kristof-Brown et al., 2005) and the notion that dispositions interact with perceived situational demands to shape proactive work behavior (Wu and Li, 2017), I argue that the relationship between job complexity and proactivity differs depending on employees' SPS level. Specifically, individuals with high EOE and LST may tend to feel distressed when working under high complexity; for them, high job complexity is likely to be a poor fit, resulting in reduced proactive work behavior. In contrast, individuals with low EOE and LST, who are less sensitive to overstimulation, are more likely to meet the demands of a highly complex job. They may be better able to engage in their work cognitively and perceive complexity as motivating. As a result, the levels of their self-initiated and future-oriented behavior increase. Furthermore, I expect the relationship between job complexity and proactivity to be stronger for individuals with high (versus low) AES, that is, those individuals who show a greater awareness of positive stimuli and are open to approaching new environments. The conceptual model is depicted in **Figure 1**.

The present study aims to contribute to the research on SPS as a predictor of employees' proactivity and may specifically inform research about the roles of the different SPS dimensions in employee proactivity. Further, the study adds to our knowledge of the role of job design in proactive work behavior. Studying individual differences in employees' sensitivity to the environment and the self that can explain when or for whom complex jobs can stimulate proactive work behavior is critical for both research and practice (Sung et al., 2017). Finally, by investigating the factor structure of SPS across two studies, the present research contributes to the ongoing discussion in the SPS literature on its multidimensional conceptualization and measurement (Greven et al., 2019; Hellwig and Roth, 2021).

## THEORY AND HYPOTHESES

### SPS and Proactive Work Behavior

Employees may engage in different forms of proactivity, such as making recommendations for work-related changes, preventing the occurrence of problems, or crafting their jobs to establish a better fit with their skills and interests (Parker and Collins, 2010). Here, I focus on two facets of proactive work behavior: individuals' task proactivity (Griffin et al., 2007) and personal initiative (Frese et al., 1997). Task proactivity is defined as actively initiating changes, such as generating ideas to improve the way in which core tasks are performed (Griffin et al., 2007).



Personal initiative is a behavioral style characterized by taking a self-starting approach to work. Employees with high levels of personal initiative anticipate future opportunities, take initiative at work even when others do not, and are persistent in their behaviors (Frese et al., 1997; Frese and Fay, 2001).

Various personality traits have been found to explain interindividual differences in proactive work behaviors (for an overview, see Tornau and Frese, 2013; Wu and Li, 2017). For instance, research has consistently shown that employees high in proactive personality (i.e., general tendency to show initiative, identify opportunities, and act on them to influence one's environment across situations and times; Bateman and Crant, 1993) are more likely to engage in proactive work behavior. Moreover, individuals' general disposition of experiencing positive moods and emotions, such as enthusiasm, alertness, and joy, has been found to be positively related to employees' personal initiative (Den Hartog and Belschak, 2007). Besides, in a sample of 478 German employees, Fay and Frese (2000) found that conservatives (operationalized as individuals with a high intolerance of uncertainty), who are committed to hierarchic values and emphasize the value of traditional practices, show less initiative at work and are less likely to introduce innovations compared to those who are less conservative.

The personality characteristic of SPS—which has mainly been investigated in the neuro-cognitive and developmental psychology literature—causes some people to perceive and process sensory information more thoroughly than others and to be generally more vulnerable to and show higher reactivity to environmental influences (Belsky and Pluess, 2009; Aron et al., 2012). Grounded in the idea of differential susceptibility, SPS is based on the perspective that individuals differ in their susceptibility to stimuli regardless of whether they are exposed to negative or positive influences (Belsky and Pluess, 2009). That is, people high in SPS are more likely than those low in SPS to be adversely affected by negative experiences. At the same time, they may also benefit more from enriching environments, and they are more oriented toward positive stimuli (Vander Elst et al., 2019). Accordingly, SPS was found to be associated with stronger responses to both positive and negative stimuli, such as sad and happy emotional states of others (Acevedo et al., 2014). Thus, being sensitive is not only

associated with negative consequences, such as increased risk of stress-related outcomes (e.g., fatigue) or job-related turnover intentions (Evers et al., 2008; Andresen et al., 2018); it may also have positive effects, such as a greater susceptibility to positive social environments and higher learning and creativity (Acevedo et al., 2014; Harms et al., 2019).

The differential positive and negative effects can be attributed to the different subdimensions of SPS (Smolewska et al., 2006) and their distinct underlying motivational processes. Specifically, the dimensions of EOE and LST reflect sensitivity to negative experiences and stimuli. EOE and LST mainly operate through the BIS (Smolewska et al., 2006; Gerstenberg, 2012; Pluess et al., 2018; Lionetti et al., 2019). When the BIS is activated, individuals become more alert, focus their attention on the potentially threatening stimulus or situation, and tend to pause current behavior (Carver and White, 1994). BIS activation is also related to the experience of negative emotions, including anxiety and nervousness (Gray, 1990; Carver and White, 1994; Merchán-Clavellino et al., 2019).

In line with this perspective, I propose that employees high in EOE and LST, who tend to be easily overwhelmed by changes and various stimuli in their environment and thus tend to avoid demanding and potentially threatening situations and risks, are, on average, less likely to show self-initiative behavior that is change-oriented.

Indirect evidence of this can be found in research on neuroticism and proactivity. People high in neuroticism tend to frequently experience aversive cognitive-emotional states, such as anger and threat, and ambiguous and uncertain situations are likely to elicit such negative emotional responses (Watson and Casillas, 2003; Bajcar and Babiak, 2020; Schmitt et al., 2022). Consequently, such individuals might feel uncomfortable initiating potentially risky and change-oriented proactive behavior themselves (Wu and Li, 2017). Accordingly, meta-analytic evidence suggests that neuroticism is negatively correlated with different proactivity concepts, although the relationships are small (Tornau and Frese, 2013; Wu and Li, 2017). Neuroticism is positively associated with SPS (Bröhl et al., 2022), particularly with the dimensions of EOE and LST (Lionetti et al., 2019; Hellwig and Roth, 2021), and it is consistently found to relate to BIS activity (Carver and White, 1994).

*Hypothesis 1a:* EOE and LST are negatively related to employees' proactive work behavior.

AES was found to have different patterns of relationships with individual outcomes than EOE and LST. AES is related positively to self-efficacy and attention to detail (Evers et al., 2008; Greven et al., 2019), and it is positively related to the sensitivity of the BAS (Gray, 1991; McNaughton and Gray, 2000; Lionetti et al., 2019). BAS activation was found to predict activating behaviors, such as entrepreneurial action (Lerner et al., 2018), and students' study engagement and academic performance (van Beek et al., 2013). AES further shares some aspects with and is moderately to strongly related to the Big Five trait openness to experiences (Listou Grimen and Diseth, 2016; Lionetti et al., 2019; Hellwig and Roth, 2021; Bröhl et al., 2022). Both AES and openness to experiences are characterized by people's tendency to seek out positive and stimulating environments. In their meta-analysis, Tornau and Frese (2013) found positive but small relationships between openness to experiences and proactivity concepts. Based on these perspectives, I propose that employees high in AES, who are curious, imaginative, broad-minded, more sensitive to positive aspects in their environment, and appreciate new experiences and changes, are more likely to show proactive work behaviors than those low in AES.

*Hypothesis 1b:* AES is positively related to proactive work behavior.

## SPS as a Moderator of the Relationship Between Job Complexity and Proactive Work Behavior

Apart from investigating the relationships between personality traits and proactivity, scholars have, based on job design and job enrichment frameworks (Humphrey et al., 2007; Parker, 2017), considered various job characteristics as antecedents of proactive work behavior (for an overview, see Ohly and Schmitt, 2017). Complexity has been identified as an important knowledge characteristic of jobs (Morgeson and Humphrey, 2006; Humphrey et al., 2007). It refers to the level to which work tasks are multifaceted and difficult to perform for the individual. Jobs high in complexity are likely to include tasks characterized by ambiguity and conflicting elements that require the use of diverse and complex skills and are mentally challenging (Campbell, 1988; Humphrey et al., 2007). The literature distinguishes between job demands that primarily hinder individuals and those that challenge them (LePine et al., 2005). It is argued that job complexity is typically appraised as a challenge demand, a positive-motivational aspect of one's work that may promote psychological empowerment, learning, job satisfaction, and the stimulation of creative ideas (Shalley et al., 2004; Morgeson and Humphrey, 2006; Frese et al., 2007). Working on complex tasks steers attention, activates effort, and provides opportunities for proactivity. Accordingly, job complexity was found to be positively related to different forms of employees' proactivity, such as their personal initiative and suggestion-making at work (e.g., Frese et al., 2007; for an

overview, see Ohly et al., 2006; Ohly and Schmitt, 2017). Thus, following previous literature, I propose the following hypothesis.

*Hypothesis 2:* Job complexity is positively related to proactive work behavior.

Despite the generally positive relationships between job complexity and outcomes, such as proactivity, evidence shows that these positive effects do not hold under all conditions. Rather, the relationships between job characteristics, such as job complexity and employee proactivity, may be more complex. Working on complex tasks requires a high level of cognitive information processing from the individual, including high attentional control and cognitive flexibility (Chen et al., 2001), which can be burdensome and may result in cognitive overload for some people (Humphrey et al., 2007; Sung et al., 2017). Accordingly, some evidence suggests that job complexity is positively related to emotional exhaustion and job-related anxiety in employees (Xie and Johns, 1995; De Jonge and Schaufeli, 1998).

The current study builds on the idea that research should focus on the interplay of perceived job or situational demands and dispositional factors to predict employees' proactive behavior at work (Wu and Li, 2017). I assume that individuals with high (versus low) SPS perceive and manage job complexity differently. Based on the P-E fit approach (Kristof-Brown et al., 2005), I argue that SPS acts as a boundary condition of the relationship between job complexity and employees' proactivity. P-E fit is defined as the "compatibility between an individual and a work environment that occurs when their characteristics are well matched" (Kristof-Brown et al., 2005, p. 281). The correspondence between individuals' attributes and characteristics of their environment may affect their motivation, behavior, and well-being (Kristof-Brown et al., 2005; Schmitt et al., 2015). Accordingly, the relationship between job complexity and individuals' proactive work behavior depends on the level of fit with their personality characteristics. The three SPS dimensions represent different proxies of fit and may thus have varying effects on how employees manage job complexity regarding their proactivity.

## EOE and LST as Moderators

Based on the P-E fit perspective, for individuals high in EOE and LST, who are sensitive to potentially threatening stimuli and are easily overwhelmed, high job complexity might represent a misfit between person and environment that can lead to behavioral inhibition and self-regulation to prevent over-arousal (Andresen et al., 2018). By focusing on complex work tasks, individuals high in EOE and LST may have fewer cognitive resources (e.g., vigilance and attention) available to engage in self-initiated, future-, and change-oriented behavior. Furthermore, as BIS activity inhibits action toward goals, individuals' engagement in self-initiated and change-oriented goals may suffer (Sobocko and Zelenski, 2015). In contrast, employees with low EOE and LST, who are not easily overwhelmed by a complex and ambiguous environment, have more available resources to exceed the minimum requirements (Schmitt et al., 2016; Sung et al., 2017). For them, complexity is more likely to be experienced as motivating. Altogether, I argue that when

faced with increasing job complexity, employees with high EOE and LST may respond less favorably than those with low EOE and LST regarding their proactive work behavior.

*Hypothesis 3a:* EOE and LST moderate the relationship between job complexity and proactive work behavior. Specifically, the positive relationship is stronger for individuals with low EOE and LST and is less strong or negative for individuals with high EOE and LST.

## AES as Moderator

Individuals with high AES, who are aware of nuances and appreciate positive aspects in their surroundings, are attentive to details and have a high level of imagination and openness to positive experiences. When faced with job complexity, they may be more likely to see beyond the current circumstances and envision proactive changes. Furthermore, working on complex tasks activates attention, and compared with individuals low in AES, those with high AES may be more likely to use this attention to explore new possibilities and alternative courses of action and create new ideas for performing tasks more effectively and efficiently (Shalley et al., 2004). Similarly, Espedido and Searle (2020) argued that individuals high in BAS, who approach situations that have the potential for personal growth or mastery, tend to appraise those situations as being more challenging and motivating.

For employees who perceive their jobs as complex, those with high AES may be likely to engage in proactivity and accept opportunities to change things for improvement. Accordingly, AES may strengthen the relationship between job complexity and employee proactivity.

*Hypothesis 3b:* AES moderates the relationship between job complexity and proactive work behavior. Specifically, the positive relationship is stronger for individuals with high AES, and it is less strong for individuals with low AES.

## OVERVIEW OF THE PRESENT STUDIES

The hypotheses were tested in two two-wave studies. Specifically, Hypotheses 1a and 1b were tested in Study 1, while Study 2 aimed to also test Hypotheses 2, 3a, and 3b. Both studies had a time lag of one month between the measurements of the predictors and moderators and the outcomes to prevent common method bias (Podsakoff et al., 2003). Study 1 examines the main effects of the SPS dimensions on task proactivity and personal initiative as two relevant indicators of proactive employee work behavior. In Study 2, the job complexity–proactive work behavior relationship and the moderating role of the SPS dimensions is tested using the same two proactivity indicators as in Study 1. Across both studies, a shortened measurement for SPS is used (Listou Grimen and Diseth, 2016), which has been developed in the wake of criticism of the original scale by Aron and

Aron (1997). Using this shortened scale, the study investigates whether the three-dimensional structure of SPS holds across both studies.

The data for both studies were gathered as part of larger projects. Therefore, the questionnaires included several measures that are irrelevant to and not described in the present paper. No other studies based on these two datasets have been published. Both studies were approved by the ethics committee of the Department of Psychology at the University of Groningen, the Netherlands.

## STUDY 1

### Method

#### Procedure and Sample

The study was conducted in January and February 2020. The research-focused crowd-working platform Prolific was used to recruit the study participants (Peer et al., 2017; Palan and Schitter, 2018). Two hundred eighty-three out of 300 individuals completed the time 1 (T1) survey (response rate 94.3%). Among them, 27 failed at least one out of three attention check items and were excluded from the sample. The others ( $N=256$ ) were approached 1 month later and asked to complete the time 2 (T2) survey. Two hundred thirty-four individuals participated. Some participants provided missing data on the core study variables and were excluded ( $N=19$ ). The final sample of individuals who participated in both waves was 215. Attrition analyses revealed that individuals who participated in both waves were older than the incomplete responders who dropped at T2 [ $t(74.275) = -2.80, p = 0.007$ ].

Of the participants, 103 (47.9%) were female. Participants' mean age was 33.63 years (range between 19 and 64 years). Fifty-five (25.6%) were from the United Kingdom, and the remainder was from various countries, such as the United States, Canada, Ireland, Poland, Italy, Spain, and Greece. Regarding their highest level of education, 64 (29.8%) attained a high school degree, and 151 (70.2%) had a university degree. The participants had different professional backgrounds, such as business analyst, dentist, carpenter, IT manager, journalist, nurse, sales assistant, secretary. Their average organizational tenure was 5.58 years ( $SD=5.79$ ).

### Measures

At T1, the participants provided information about their demographics and their SPS. At T2, they were asked to rate their proactive work behavior as shown across the past weeks. The survey items were presented in English.

#### Sensory Processing Sensitivity

The 13 item scale by Listou Grimen and Diseth (2016), a shortened and validated version of the original 27 item scale (Aron and Aron, 1997), was used to measure the three SPS dimensions. The participants were asked to indicate their level of agreement with items describing various aspects of sensitivity relating to their feeling and reactions to internal



and external stimuli on a five-point scale ranging from 1 (*does not apply at all*) to 5 (*fully applies*). EOE was measured by five items (Cronbach's  $\alpha=0.73$ ). An example item is "I am annoyed when people try to get me to do too many things at once." LST consisted of three items ( $\alpha=0.74$ ), e.g., "I am easily overwhelmed by things like bright light, strong smells, coarse fabric, or sirens close by." AES was assessed by five items ( $\alpha=0.67$ ) with the example item: "I enjoy delicate or fine scents, tastes, sounds, works of arts." Confirmatory factor analysis (CFA) in Mplus 8.1 (Muthén and Muthén, 1998–2017) was conducted to test the factorial validity of the scale. The fit indices of the three-dimensional model were  $\chi^2(62)=124.917$ , CFI=0.893; RMSEA=0.069, SRMR=0.064. These indices were slightly below the accepted criteria for cut-off values (Hu and Bentler, 1998), but they were superior to the other possible (Aron and Aron, 1997; Evans and Rothbart, 2008) and more parsimonious models with one factor [ $\chi^2(65)=321.013$ , CFI=0.566; RMSEA=0.135, SRMR=0.114] and two factors [ $\chi^2(64)=179.081$ , CFI=0.805; RMSEA=0.091, SRMR=0.073; EOS and LST as one factor].

### Proactive Work Behavior

Participants were asked to refer to their work behaviors during the past few weeks. Three items from a scale by Griffin et al. (2007) were used to measure task proactivity. An example item is "I initiated better ways of doing my core tasks." Responses ranged from 1 (*does not apply at all*) to 5 (*fully applies*). Cronbach's  $\alpha$  of the scale was 0.90. Personal initiative was assessed with five items by Spychala and Sonnentag (2011, based on Frese et al., 1997). An example item is "I took matters into my own hands at work." The participants provided their responses on five-point scales ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach's  $\alpha$  was 0.77.

### Control Variables

In line with previous research (e.g., Bolino and Turnley, 2005; Hong et al., 2016; Mensmann and Frese, 2019), the effects of participants' age and gender were statistically controlled. Research reveals that proactive work behavior might change with age (Frese and Fay, 2001; Thomas et al., 2010). Gender has been shown to correlate with proactive work behavior with males engaging in higher levels (e.g., Bolino and Turnley, 2005; Griffin et al., 2007), albeit correlations are small (Tornau and Frese, 2013).

## Data Analysis and Results

Descriptive statistics and correlations among the study variables are presented in **Table 1**. EOE and LST at T1 were positively and significantly related ( $r=0.47$ ,  $p<0.01$ ), but AES T1 was unrelated to both EOE T1 ( $r=-0.01$ , *ns*) and LST T1 ( $r=0.10$ , *ns*). While AES T1 was positively related to task proactivity at T2 ( $r=0.26$ ,  $p<0.01$ ), and personal initiative at T2 ( $r=0.28$ ,  $p<0.01$ ), LST and EOE at T1 were unrelated to both indicators of proactivity, as reported 1 month later. Hierarchical multiple

regression analyses were used to test Hypotheses 1a and 1b. The control variables age and gender were entered in the first step and EOE, LST, and AES T1 were entered in the second step to predict task proactivity and personal initiative at T2, respectively. The variance inflation factors (VIF) were inspected to estimate the degree of collinearity among the variables in the regression analysis. All VIF scores were below 2. Specifically, they ranged between 1.09 for the effect of age on task proactivity at T2 and 1.76 for the effect of LST T1 on task proactivity at T2. This indicates that multicollinearity was not a serious threat (Chatterjee and Price, 1991).

Hypothesis 1a states that EOE and LST are negatively related to employee proactive work behavior. Both EOE T1 ( $\beta=0.07$ ,  $p=0.380$ ) and LST T1 ( $\beta=-0.06$ ,  $p=0.411$ ) were unrelated to task proactivity at T2 (see **Table 2**) and to personal initiative at T2 (EOE:  $\beta=-0.01$ ,  $p=0.916$ ; LST:  $\beta=-0.06$ ,  $p=0.410$ , see **Table 3**) with the control variables included. These results do not support Hypothesis 1a.

Hypothesis 1b states that AES positively predicts employees' proactive work behavior. The results showed that AES T1 was significantly and positively associated with task proactivity at T2 ( $\beta=0.27$ ,  $p<0.001$ ) and with personal initiative at T2 ( $\beta=0.28$ ,  $p<0.001$ ), supporting Hypothesis 1b. By adding the three SPS dimensions, 7.1% additional variance in task proactivity and 7.8% in personal initiative was explained above and beyond the control variables. All results were equivalent when the control variables were excluded from the analyses, which indicates that the control variables do not affect or provide alternative explanations for the relationships between the independent and dependent variables.

## STUDY 2

### Method

#### Procedure and Sample

Study 2 aimed to replicate the results from Study 1 and to further test if EOE, LST, and AES moderate the positive relationship between job complexity and proactive work behaviors. The study was conducted in August and September 2020 and Prolific was used to recruit the study participants. At T1, 200 individuals (all English native speakers) were invited to take part in the study and 191 of those completed the survey (95.5% response rate). All participants from the first wave were contacted again 1 month later asking them to complete the T2 survey. One hundred twenty-six participants responded. The final sample consisted of these 126 individuals who participated in both waves. Differences in the study variables and core demographic variables were calculated between participants who provided data only at T1 and the complete responders. Participants who provided incomplete data had higher LST scores than those who participated in both waves [ $t(114.974)=2.171$ ,  $p=0.032$ ] indicating that LST is associated with a higher likelihood of dropping out.

Participants' mean age at T1 was 34.61 years ( $SD=9.52$ ) and women made up 65.9% of the sample. Most participants (92.1%) were living in the United Kingdom and 7.9% came

**TABLE 1** | Means (M), SD, and correlations of the study variables in Study 1.

		<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1	Age T1	33.63	9.61	—					
2	Gender T1	0.52	0.50	−0.03	—				
3	EOE T1	3.46	0.77	−0.11	0.11	—			
4	LST T1	2.97	1.00	−0.10	0.08	0.47**	—		
5	AES T1	3.58	0.66	0.05	−0.13	−0.01	0.10	—	
6	Task proactivity T2	3.40	0.93	−0.05	−0.05	0.04	−0.00	0.26**	—
7	Personal initiative T2	3.65	0.67	0.05	−0.09	−0.05	0.04	0.28**	0.52**

*N* = 215. T1 = time 1; T2 = time 2. EOE, ease of excitation; LST, low sensory threshold; and AES, aesthetic sensitivity. Gender was coded 0 = female, 1 = male. \*\* $p \leq 0.01$ .

**TABLE 2** | Results of the hierarchical multiple regression analysis with task proactivity at T2 as dependent variable (Study 1).

Variable	Task proactivity T2					
	<i>B</i>	<i>SE</i>	$\beta$	<i>B</i>	<i>SE</i>	$\beta$
<b>Control variables</b>						
Age T1	−0.01	0.01	−0.05	−0.01	0.01	−0.06
Gender T1	−0.09	0.13	−0.05	−0.03	0.13	−0.02
<b>Main effects</b>						
EOE T1				0.08	0.09	0.07
LST T1				−0.06	0.07	−0.06
AES T1				0.38	0.10	0.27**
$R^2$		0.005			0.076	

*N* = 215. T1 = time 1; T2 = time 2. EOE, ease of excitation; LST, low sensory threshold; and AES, aesthetic sensitivity.  $R^2$  = proportion of variance explained in the criterion. \*\* $p \leq 0.01$ .

from other English-speaking countries such as Ireland, Canada, and the United States. In terms of their educational level, 48 (38.1% of the sample) had received a high school degree and 78 (61.9%) held a university degree. The participants represented a variety of occupations (e.g., accountant, financial manager, social worker, teacher, web designer, receptionist). Their average organizational tenure was 6.13 years ( $SD = 5.08$ ).

## Measures

At T1, the participants provided information about their demographics, their general SPS, and their perceived level of job complexity referring to the past few weeks. At T2, they were asked to rate their proactive work behavior during the last few weeks. The survey items were presented in English.

### Sensory Processing Sensitivity

The same 13 items as in Study 1 were used to measure SPS (Listou Grimen and Diseth, 2016). Cronbach's alphas were 0.70 for the five-item EOE scale, 0.90 for LST, and 0.77 for AES. I examined the measurement model of the SPS construct using CFA. Results showed that a three-factor-model yielded a good fit to data [ $\chi^2(62) = 85.170$ , CFI = 0.959, RMSEA = 0.054, SRMR = 0.064] and fit the data significantly better than a one-factor [ $\chi^2(65) = 332.527$ , CFI = 0.530, RMSEA = 0.181, and SRMR = 0.166] and a two-factor model with EOE and LST forming one factor [ $\chi^2(64) = 170.140$ , CFI = 0.813, RMSEA = 0.115, and SRMR = 0.108].

### Job Complexity

The four-item scale developed by Maynard and Hakel (1997) was used to measure job complexity at T1. An example item is: "My work tasks were mentally demanding." The response format ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach's alpha was 0.86.

### Proactive Work Behavior

Task proactivity was measured with the same three items as in Study 1 (Griffin et al., 2007). Cronbach's alpha was 0.91. The seven-item scale by Frese et al. (1997) was used to measure personal initiative. Participants were asked to indicate to what extent they showed initiative at work in the past few weeks. An example item is: "I used opportunities quickly in order to attain my goals." Participants provided their responses on a five-point scale (1 = *does not apply at all* to 5 = *fully applies*). Cronbach's alpha was 0.85.

### Control Variables

As in Study 1, participants' age and gender were included as control variables (Hong et al., 2016; Mensmann and Frese, 2019).

## Data Analysis and Results

Descriptive statistics and correlations among all variables are shown in Table 4. LST and EOE at T1 were significantly related ( $r = 0.39$ ,  $p < 0.01$ ), but AES T1 was unrelated to EOE T1 ( $r = -0.15$ , ns) and LST T1 ( $r = 0.06$ , ns). Job complexity T1 was significantly related to personal initiative at T2 ( $r = 0.23$ ,  $p < 0.01$ ), but the

**TABLE 3** | Results of the hierarchical multiple regression analysis with personal initiative at T2 as dependent variable (Study 1).

Variable	Personal initiative T2					
	<i>B</i>	<i>SE</i>	$\beta$	<i>B</i>	<i>SE</i>	$\beta$
<b>Control variables</b>						
Age T1	0.00	0.01	0.04	0.00	0.01	0.02
Gender T1	−0.11	0.09	−0.08	−0.06	0.09	−0.04
<b>Main effects</b>						
EOE T1				−0.01	0.07	−0.01
LST T1				−0.04	0.05	−0.06
AES T1				0.29	0.07	0.28**
<i>R</i> <sup>2</sup>		0.009			0.087	

*N* = 215. *T*1 = time 1, *T*2 = time 2. EOE, ease of excitation; LST, low sensory threshold; and AES, aesthetic sensitivity. *R*<sup>2</sup> = proportion of variance explained in the criterion. \*\**p* < 0.01.

**TABLE 4** | Means (*M*), *SD*, and correlations of the study variables in Study 2.

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1 Age T1	34.61	9.52	—						
2 Gender T1	0.34	0.48	0.01	—					
3 EOE T1	3.31	0.78	−0.25**	−0.18*	—				
4 LST T1	1.93	1.03	−0.02	−0.07	0.39**	—			
5 AES T1	3.15	0.80	−0.02	−0.04	−0.15	0.06	—		
6 Job complexity T1	3.71	1.00	0.03	−0.04	−0.01	0.00	0.06	—	
7 Task proactivity T2	3.17	1.00	−0.17	−0.05	0.01	−0.04	0.14	0.13	—
8 Personal initiative T2	3.68	0.65	0.03	−0.14	−0.15	−0.22*	0.21*	0.23**	0.59**

*N* = 126. *T*1 = time 1, *T*2 = time 2. EOE, ease of excitation; LST, low sensory threshold; and AES, aesthetic sensitivity. Gender was coded 0 = female, 1 = male. \**p* ≤ 0.05; \*\**p* ≤ 0.01.

relationship with task proactivity T2 was not significant ( $r = 0.13$ , ns). Hierarchical multiple regression analysis was carried out to test the hypotheses. I mean-centered the variables before calculating the interaction terms for job complexity T1 and each of the three SPS dimensions (Cohen et al., 2003). Variables were then entered in three steps: The control variables gender and age were entered in the first step and the linear main effects of job complexity and the three SPS variables were entered in the second step. Finally, in the third step, the linear interaction terms were entered for each of the three SPS dimensions separately (see **Tables 5** and **6**). The VIF values across all analyses were below 2 with the highest score of 1.38 for the effect of EOE T1 on personal initiative T2.

Both EOE T1 and LST T1 were unrelated to employee task proactivity at T2 ( $\beta = 0.00$ ,  $p = 0.973$  for EOE and  $\beta = -0.06$ ,  $p = 0.552$  for LST). EOE T1 also did not predict personal initiative at T2 ( $\beta = -0.05$ ,  $p = 0.623$ ) whereas LST predicted personal initiative at T2 negatively ( $\beta = -0.22$ ,  $p = 0.018$ ). Hypothesis 1a is only partially supported for LST T1 predicting personal initiative at T2. AES T1 did not predict task proactivity at T2 ( $\beta = 0.13$ ,  $p = 0.131$ ), but it predicted personal initiative T2 ( $\beta = 0.20$ ,  $p = 0.017$ ). Hypothesis 1b is thus partially supported. Job complexity T1 did not predict task proactivity significantly ( $\beta = 0.12$ ,  $p = 0.167$ ), but it was positively and significantly related to personal initiative at T2 ( $\beta = 0.21$ ,  $p = 0.012$ ). This partially supports Hypothesis 2.

Hypothesis 3a states that the relationship between job complexity and proactive work behavior is stronger for individuals

low in EOE and LST and less strong or negative for individuals high in EOE and LST. The results are shown in **Tables 5** and **6**. The interaction terms were non-significant for task proactivity at T2 ( $\beta = -0.16$ ,  $p = 0.089$  for EOE and  $\beta = 0.16$ ,  $p = 0.077$  for LST) and for personal initiative at T2 ( $\beta = -0.11$ ,  $p = 0.216$  for EOE and  $\beta = 0.08$ ,  $p = 0.387$  for LST). Thus, Hypothesis 3a was not supported by the data.

AES T1 was found to moderate the relationship between job complexity T1 and task proactivity T2 ( $\beta = 0.22$ ,  $p = 0.015$ ) as well as personal initiative T2 ( $\beta = 0.18$ ,  $p = 0.036$ ). A simple slopes test revealed that job complexity T1 was positively related to task proactivity at T2 if AES T1 was high (1 *SD* above the mean;  $B = 0.34$ ,  $SE = 0.125$ ,  $t = 2.759$ ,  $p = 0.007$ ), but unrelated when AES T1 was low (1 *SD* below the mean;  $B = -0.08$ ,  $SE = 0.12$ ,  $t = -0.648$ ,  $p = 0.518$ ). Similarly, for those employees who scored high on AES T1, job complexity T1 was positively related to personal initiative at T2 ( $B = 0.25$ ,  $SE = 0.08$ ,  $t = 3.324$ ,  $p = 0.001$ ). For employees who rated their AES T1 to be lower (1 *SD* below the mean), job complexity T1 showed no significant association with personal initiative measured one month later ( $B = 0.03$ ,  $SE = 0.00$ ,  $t = 0.450$ ,  $p = 0.653$ ). The significant interaction effects are depicted in **Figures 2** and **3**. These results support Hypothesis 3b that the relationship between job complexity and proactive work behavior is stronger for employees high in AES than for employees low in AES. All hypotheses were tested with and without controlling for gender and age as covariates. Both types of analyses led to the same conclusions.

**TABLE 5** | Results of hierarchical multiple regression analysis with task proactivity at T2 as Dependent Variable (Study 2).

	Dependent variable: task proactivity T2								
	EOE as moderator			LST as moderator			AES as moderator		
	<i>B</i>	<i>SE</i>	$\beta$	<i>B</i>	<i>SE</i>	$\beta$	<i>B</i>	<i>SE</i>	$\beta$
<b>Step 1: controls</b>									
Age	−0.02	0.01	−0.17	−0.02	0.01	−0.17	−0.02	0.01	−0.17
Gender	−0.10	0.19	−0.05	−0.10	0.19	−0.05	−0.10	0.19	−0.05
<i>R</i> <sup>2</sup>		0.031		0.031			0.031		
<b>Step 2: main effects</b>									
Job complexity T1	0.12	0.09	0.12	0.12	0.09	0.12	0.12	0.09	0.12
EOE T1	0.00	0.13	0.00	0.00	0.13	0.00	0.00	0.13	0.00
LST T1	−0.06	0.10	−0.06	−0.06	0.10	−0.06	−0.06	0.10	−0.06
AES T1	0.17	0.12	0.13	0.17	0.12	0.13	0.17	0.12	0.13
<i>R</i> <sup>2</sup>		0.068		0.068			0.068		
<b>Step 3: interaction</b>									
Job complexity T1 * EOE T1	−0.21	0.12	−0.16						
Job complexity T1 * LST T1				0.16	0.09	0.16			
Job complexity T1 * AES T1							0.26	0.11	0.22*
<i>R</i> <sup>2</sup>		0.090		0.092			0.114		

*N* = 126. T1 = time 1, T2 = time 2. Gender was coded 0 = male, 1 = female. The predictors were mean-centered. *B*, unstandardized regression coefficient and *SE*, standard error. *R*<sup>2</sup> = proportion of variance explained in the criterion. \**p* ≤ 0.05.

**TABLE 6** | Results of hierarchical multiple regression analysis with personal initiative at T2 as dependent variable (Study 2).

	Dependent variable: personal initiative T2								
	EOE as moderator			LST as moderator			AES as moderator		
	<i>B</i>	<i>SE</i>	$\beta$	<i>B</i>	<i>SE</i>	$\beta$	<i>B</i>	<i>SE</i>	$\beta$
<b>Step 1: controls</b>									
Age	0.00	0.01	0.03	0.00	0.01	0.03	0.00	0.01	0.03
Gender	−0.19	0.12	−0.14	−0.19	0.12	−0.14	−0.19	0.12	−0.14
<i>R</i> <sup>2</sup>		0.022		0.022			0.022		
<b>Step 2: main effects</b>									
Job complexity T1	0.14	0.05	0.21*	0.14	0.05	0.21*	0.14	0.05	0.21*
EOE T1	−0.04	0.08	−0.05	−0.04	0.08	−0.05	−0.04	0.08	−0.05
LST T1	−0.14	0.06	−0.22*	−0.14	0.06	−0.22*	−0.14	0.06	−0.22*
AES T1	0.16	0.07	0.20*	0.16	0.07	0.20*	0.16	0.07	0.20*
<i>R</i> <sup>2</sup>		0.170		0.170			0.170		
<b>Step 3: interaction</b>									
Job complexity T1 * EOE T1	−0.09	0.07	−0.11						
Job complexity T1 * LST T1				0.05	0.06	0.08			
Job complexity T1 * AES T1							0.14	0.07	0.18*
<i>R</i> <sup>2</sup>		0.181		0.175			0.201		

*N* = 126. T1 = time 1, T2 = time 2. Gender was coded 0 = male, 1 = female. The predictors were mean-centered. *B*, unstandardized regression coefficient and *SE*, standard error. *R*<sup>2</sup> = proportion of variance explained in the criterion associated by the variables. \**p* ≤ 0.05.

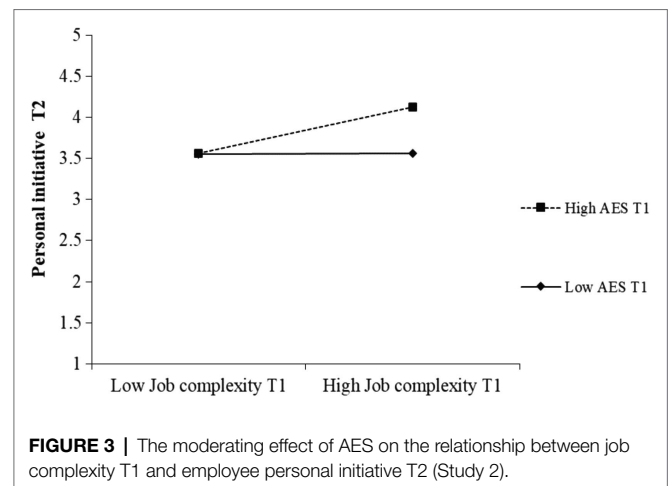
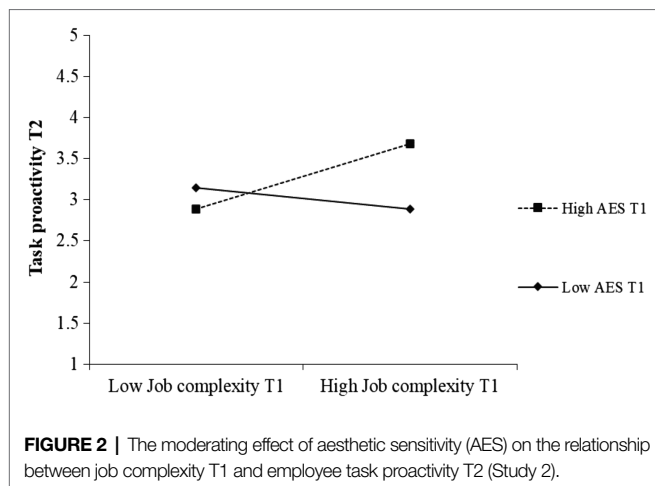
## GENERAL DISCUSSION

SPS has gained considerable societal attention in recent years, and research is steadily growing (Greven et al., 2019). However, its potential influences in the work setting lack scientific evidence, and research on individual work behavior is specifically absent (for some exceptions, see Andresen et al., 2018; Vander Elst et al., 2019). The objectives of this research were to investigate the two roles of SPS: (a) as a multidimensional personal

characteristic and predictor of employee proactivity and (b) as a boundary condition in the way employees respond to job complexity with regards to their proactivity. Employee proactivity is an important form of behavior in today's increasingly dynamic work context (Grant and Ashford, 2008).

The present study contributes to the literature by showing that the three SPS dimensions relate to employees' proactive work behavior in different ways and that SPS can partly explain for whom complex jobs may stimulate proactivity. The study





could not provide evidence for the assumption of EOE and LST—the two SPS dimensions associated with heightened activity in the BIS (Sobocko and Zelenski, 2015; Pluess et al., 2018; Lionetti et al., 2019)—inhibiting approach behavior, such as work proactivity. Although LST was negatively related to personal initiative in Study 2, this relationship could not be found for task proactivity as the second indicator of proactive work behavior, could not be replicated in Study 1, and did not exist for EOE.

Based on the P-E fit approach and previous research on EOE and LST as vulnerability factors of individual outcomes, it was further argued that the relationship between job complexity and employees' proactive work behavior is less strong or negative for individuals reporting high levels of EOE and LST compared with those low in EOE and LSF. This assumption could not be supported. For individuals high in EOE and LST, job complexity does not seem to indicate a misfit, resulting in lower proactive work behavior one month later. Overall, the data do not support the role of EOE and LST as vulnerability factors of proactive work behavior. Hence, research showing that EOE and LST are related to adverse well-being outcomes (e.g., Evers et al., 2008; Vander Elst et al., 2019) does not necessarily apply to behavioral outcomes or proactive forms of work behavior, specifically (Harms et al., 2019).

AES was proposed to act as a supporting factor for proactive work behavior due to its relationship with heightened sensitivity of the BAS (Gray, 1991; Lionetti et al., 2019), indicating high appetitive motivation and the urge to engage in approach behavior, which should stimulate proactivity. Positive relationships were found between AES and employees' proactive behavior across both studies. Yet, in Study 2, this relationship appeared for personal initiative but not for employees' task proactivity. It can only be speculated why this finding emerged. One possible reason could be that Study 2, but not Study 1, was conducted during the COVID-19 pandemic and thus, different conditions and circumstances prevailed for the two studies. People's awareness of and openness to positive environmental stimuli did not shape individual differences in their initiative to change their core work tasks, but it

predicted their self-starting and future-oriented behavior in a broader sense (e.g., their searching for solutions and realizing ideas in the work context beyond their core works tasks; Frese et al., 1997; Frese and Fay, 2001). This assumption warrants further investigation. Overall, heterogeneity across circumstances, time points (Yarkoni, 2022) as well as differences in the effects for diverse indicators of proactive work behavior (Parker and Collins, 2010) should be considered in future research.

In addition, the present study found significant interaction effects between job complexity and AES on both indicators of employee proactive work behavior. The main effect of job complexity on proactivity was positive and significant for personal initiative only, whereas job complexity was positively related to both indicators of proactivity in employees with high AES but unrelated if AES was low. This finding supports the view that relationships between job complexity and proactive work behaviors are more complex and, in line with the P-E fit approach (Kristof-Brown et al., 2005), personality factors should be considered as key moderators. This finding also supports the view that for certain sensitive people (i.e., those with high awareness of and openness to positive stimuli in their surroundings), sensitivity does not necessarily have to be debilitating. Rather, following the perspective of vantage sensitivity (Pluess, 2017), when exposed to an enriching (e.g., complex) environment, people with high AES benefit in terms of their behavioral outcomes. Notably, however, the SPS dimensions could only explain a small percentage of variance in employee proactivity. This is not surprising given that SPS as a personality trait acts as a *distal* antecedent of proactive work behavior (Parker et al., 2010). Distal antecedents trigger behavior through more proximal proactive motivational states (i.e., being energized to, having a reason to, and having the confidence to show initiative and implement changes at work). These proximal states were not examined in the current study.

Across both studies, support was found for the three-dimensional nature of SPS as the most widely supported psychometrical solution (Smolewska et al., 2006; Vander Elst

et al., 2019). EOE and LST were moderately and significantly related, whereas AES was unrelated to both EOE and LST. The three dimensions showed differential relationships with the other variables in the model, thus supporting the conceptual differences and the treatment of SPS on the dimension level (Greven et al., 2019). However, the psychometric characteristics, at least in Study 1, were not ideal. The reliability of the five-item measure of AES was low ( $\alpha < 0.70$ ), an issue that was also reported in previous research (e.g., Liss et al., 2008; Sobocko and Zelenski, 2015; Yano and Oishi, 2018). Although better than alternative models, the fit of the three-dimensional model was barely acceptable in Study 1; however, the fit was better in Study 2. The problematic factor structure of SPS measures is widely discussed (e.g., Greven et al., 2019; Vander Elst et al., 2019; Hellwig and Roth, 2021). Efforts should be made to revise and improve SPS measures further so that psychometrically sound measures are available to test hypotheses derived from theory.

Finally, the mean scores of the three SPS dimensions differed slightly between the studies, particularly for LST with means lower in Study 2. Differences in the characteristics of the samples may (partly) explain these divergent findings in the means. While Study 2 is based on a sample of employees with most of them residing in the United Kingdom, Study 1 includes an international sample of employees coming from various English-speaking and non-English-speaking countries. Cultural differences in the understanding of and sensitivity to certain SPS items have not yet been studied extensively (Listou Grimen and Diseth, 2016; Pluess et al., 2018; Greven et al., 2019). Nevertheless, existing evidence shows that individuals from different countries and backgrounds tend to differ in these aspects (see Greven et al., 2019, who refer to data showing that British participants score lower than Belgian individuals on certain SPS items). However, the participants might not only have varied in their cultural backgrounds but also in their language proficiency. Study 2 participants included native English speakers, whereas Study 1 participants were required to be fluent in English and able to complete the English surveys. Linguistic problems in terms of misunderstandings and misinterpretations might have occurred in Study 1. Potentially lower language proficiency might have also influenced the psychometric issues of the SPS scale in Study 1. Research suggests that non-native speakers are more likely to provide data of lower quality in survey studies (Lenzner et al., 2010; Wenz et al., 2021).

## Limitations and Implications for Future Research

Several limitations of the present study should be noted. The results are based on studies with a two-wave design, which is an improvement to existing, mostly cross-sectional research on SPS in the work context. However, although the temporal separation of predictor and outcome variables reduces the likelihood of common method bias (Podsakoff et al., 2003), the data are correlational in nature, so unambiguous conclusions about the direction of causality cannot be drawn. Reverse

causation may also be possible such that engaging in proactive work behavior may increase employees' job complexity (Frese et al., 2007). Moreover, the statistical power to detect interaction effects in Study 2 was low, increasing the likelihood of false-negative findings (Cohen, 1992).

The present study presents an interesting point of departure for the role of SPS in employee proactivity that calls for more research. First, the current perspective is limited in the sense that it is insufficient to focus on distal personality variables and perceptions of job complexity as job demands as the sole motivators of proactive work behavior. Future research is needed to better understand individuals' motivational states that are more proximal to goals and action (Parker et al., 2010). In a related vein, extending Study 2, future research could study the underlying mechanisms of the interaction between job complexity and the different SPS dimensions with regard to proactive work behavior in a larger sample. Cognitive appraisal may play an important role in determining how employees perceive and react to job complexity depending on their level of SPS (Lazarus and Folkman, 1984). For instance, individuals with high AES, who are more open to positive experiences and new ideas, appraise complex tasks as being more challenging and motivating, and because of their approach orientation they are more likely to engage in proactive behavior to improve situations (Espedido and Searle, 2020).

Second, this study investigated the interplay between job complexity as a work-related demand and SPS as a personality characteristic. According to the demand-control-person model (Rubino et al., 2012), this perspective could be extended by examining the role of job resources (e.g., support, job autonomy, task routinization) as another boundary condition that may improve predictions about individual behavioral reactions to job demands, such as job complexity (Vander Elst et al., 2019). For instance, individuals high in EOE and LST might be less vulnerable to the negative effects of complexity when they experience a supporting organizational climate (Hong et al., 2016) or when routinized work tasks are implemented (Ohly et al., 2006), an assumption that might help to explain the non-significant two-way interaction effects found in the current study.

Moreover, other personality characteristics might play a role in explaining the missing moderating effects of EOE and LST. If employees have strong aspirations of controlling their environment or a generally strong proactive personality (Frese et al., 2007) along with their tendency of being easily overwhelmed and feeling aroused by internal or external stimuli, their proactive work behavior might not suffer. Testing these three-way interactions of demands, personality traits, and other contextual and personal factors might provide a more comprehensive perspective on this issue. Finally, because SPS is highly correlated with well-established personality characteristics, such as neuroticism, introversion, and openness to experience (Greven et al., 2019; Lionetti et al., 2019; Hellwig and Roth, 2021), future research on relationships between SPS and employee work behavior should explore its incremental validity by investigating whether the SPS dimensions predict employee outcomes above and beyond the Big Five traits.

## Practical Implications and Conclusion

Although SPS is generally understood as a vulnerability factor that may increase the risk for the development of mental problems (Aron et al., 2012), the current findings propose that SPS cannot be seen as a “weak” personality characteristic when it comes to predicting employees’ proactive behaviors (Harms et al., 2019). Individuals high in EOE and LST do not seem to show lower proactive behaviors and do not differ from those low in these dimensions when dealing with complexity at work. Employees high in AES tend to engage in proactive work behavior to a greater extent and benefit more from job complexity than those low in AES. Further research is needed before profound practical implications can be inferred, but the current findings suggest that employers can stimulate proactivity in some of their more sensitive employees (i.e., those high in AES) by providing them with more complex work tasks. Generally, more awareness of the positive aspects of SPS in the organizational context can be gained based on these findings.

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## DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## ETHICS STATEMENT

The two studies were reviewed and approved by the Research Ethics Committee of the Department of Psychology, University of Groningen, the Netherlands. The participants provided their written informed consent to participate in this study.

## AUTHOR CONTRIBUTIONS

The author confirms being the sole contributor of this work and has approved it for publication.

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## EDITED BY

Arianna Costantini,  
University of Trento,  
Italy

## REVIEWED BY

Delia Virga,  
West University of Timișoara, Romania  
Luuk Van Iperen,  
Eindhoven University of Technology,  
Netherlands

## \*CORRESPONDENCE

Philipp Kerksieck  
philipp.kerksieck@uzh.ch

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# Crafting work-nonwork balance involving life domain boundaries: Development and validation of a novel scale across five countries

Philipp Kerksieck<sup>1\*</sup>, Rebecca Brauchli<sup>1</sup>, Jessica de Bloom<sup>2,3</sup>,  
Akihito Shimazu<sup>4</sup>, Miika Kujanpää<sup>5</sup>, Madeleine Lanz<sup>6</sup> and  
Georg F. Bauer<sup>1</sup>

<sup>1</sup>Public and Organizational Health, Center of Salutogenesis, Epidemiology, Biostatistics and Prevention Institute, University of Zurich, Zurich, Switzerland, <sup>2</sup>Faculty of Social Sciences (Psychology), Tampere University, Tampere, Finland, <sup>3</sup>Faculty of Economics and Business, University of Groningen, Groningen, Netherlands, <sup>4</sup>Department of Policy Management, Keio University, Tokyo, Japan, <sup>5</sup>School of Business, University of South-Eastern Norway, Hønefoss, Viken, Norway, <sup>6</sup>Consumer Behavior Group, Institute for Environmental Decisions, ETH Zurich, Zurich, Switzerland

Ongoing developments, such as digitalization, increased the interference of the work and nonwork life domains, urging many to continuously manage engagement in respective domains. The COVID-19 pandemic and subsequent home-office regulations further boosted the need for employees to find a good work-nonwork balance, thereby optimizing their health and well-being. Consequently, proactive individual-level crafting strategies for balancing work with other relevant life domains were becoming increasingly important. However, these strategies received insufficient attention in previous research despite their potential relevance for satisfying psychological needs, such as psychological detachment. We addressed this research gap by introducing a new scale measuring crafting for a work-nonwork balance and examining its relevance in job- and life satisfaction, work engagement, subjective vitality, family role and job performance, boundary management and self-rated work-nonwork balance. The Work-Nonwork Balance Crafting Scale was validated in five countries (Austria, Finland, Germany, Japan, and Switzerland), encompassing data from a heterogeneous sample of more than 4,200 employees. In study 1, exploratory factor analysis revealed a two-factorial scale structure. Confirmatory factor analysis, test for measurement invariance, and convergent validity were provided in study 2. Replication of confirmatory factor analysis, incremental and criterion validity of the Work-Nonwork Balance Crafting Scale for job and life satisfaction were assessed in study 3. Study 4 displayed criterion validity, test-retest reliability, testing measurement invariance, and applicability of the scale across work cultures. Finally, study 5 delivered evidence for the Work-Nonwork Balance Crafting Scale in predicting work-nonwork balance. The novel Work-Nonwork Balance Crafting Scale captured crafting for the challenging balance between work and nonwork and performed well across several different working cultures in increasingly digitalized societies. Both researchers and practitioners may use this tool to assess crafting efforts to balance both life

domains and to study relationships with outcomes relevant to employee health and well-being.

#### KEYWORDS

life crafting, scale validation, work-nonwork balance, work-life balance, life domain interference, cross-cultural study

## Introduction

### Background and aim

Digitalization has led to the development of the world of work described as the “fourth industrial revolution” (Neufeind et al., 2018; Ropponen et al., 2020). An important aspect of this development is the increasing degree of freedom in individual work design and beyond. This freedom can be used by employees to shape their work individually and proactively through crafting (De Bloom et al., 2020; Tims et al., 2022). At the same time, more flexible work has led to collapsing work-to-nonwork interfaces (Vaziri et al., 2020) and a vulnerable work-nonwork balance<sup>1</sup> (WNB). Proactively crafting these interfaces and one’s work-nonwork balance constitute the core of this research.

The need for crafting WNB has mainly been fuelled by the trend to integrate work into other life domains due to: (a) the extended use of information and communication technologies (Piszcsek, 2017), resulting in blurred boundaries between work and nonwork life domains (Ollier-Malaterre et al., 2019); (b) the demand for highly flexible work arrangements in a 24/7 economy (Bauer and Brauchli, 2017); and (c) organizational practices that encourage employees to expand work into nonwork life domains (Dumas and Sanchez-Burks, 2015). This trend is accompanied by increasing work density, which is the ratio of one’s workload over the resources available to perform that work (Derks and Bakker, 2014) and few opportunities for necessary recovery from work stress during and after work (De Bloom et al., 2015). In addition to the densification of work, demands in nonwork life domains are remaining or also increase (Rofcanin and Anand, 2020), leading to precarious situations for family life (Beckman and Mazmanian, 2020). Finally, the COVID-19 crisis, with mandatory home office regulations and lockdowns, has intensified this development (Cho, 2020; Vaziri et al., 2020; Rudolph et al., 2021). Proactive work designs including crafting are suggested as helpful strategies during this pandemic (Wang et al., 2020; Brauchli et al., 2022; Pijpker et al., 2022). Empirical evidence also highlights the

importance of WNB for the well-being and health of employees (for reviews see Casper et al., 2018; Sirgy and Lee, 2018).

In summary, proactively balancing work and nonwork *via* crafting may comprise a beneficial behavioral strategy to improve WNB. To enable research and, later on, the dissemination of such proactive strategies, the present paper aimed to develop and validate the Work-Nonwork Balance Crafting (WNBC) scale.

### Defining the balance of work and nonwork

The first critical step in developing a new scale is defining the guiding concepts. This is demanding for WNB because currently, there is no consensus regarding guiding theoretical models and conceptual definitions available (Shockley et al., 2017; for an overview and review, see Casper et al., 2018; Wayne et al., 2021). Thus, we relied on Casper et al.’s (2018) thorough definition of WNB derived from a deductive, comprehensive literature review and dictionary classifications, as well as an inductive, qualitative analysis of employees’ definitions of such a balance:

“Employees’ evaluation of the favorability of their combination of work and nonwork roles, arising from the degree to which their affective experiences and their perceived involvement and effectiveness in work and nonwork roles are commensurate with the value they attach to these roles” (p. 197).

This definition incorporates the fit perspective to be satisfied with valued roles in their respective life domains (Greenhaus and Allen, 2011; Wayne et al., 2021). In addition, Casper et al. (2018) considered a current development in the WNB literature by exceeding the perspective of WNB as a balance between the domains of work and family only (Haar et al., 2019). Ideal balance is defined as a good commensuration between affective experiences and involvement and effectiveness in work and nonwork roles with value attached to these roles. To attain this fit, we proposed that individuals can engage in needs-oriented proactivity, the so-called crafting (De Bloom et al., 2020). The given WNB situation must not be passively accepted to satisfy these needs. Instead, we assumed that it can be beneficial if employees proactively adjust the WNB situation according to their own standards and respective role expectations [see Casper et al.’s (2018) WNB definition above]. For example, a father may adapt

<sup>1</sup> In the following sections of this paper we use the term work-nonwork balance to indicate that work and life are not necessarily distinct entities but can be better structured in work and nonwork life domains [see also Wayne et al. (2021)].

and therefore craft the balance of work and family life and, accordingly, his ideal WNB. Specifically, he might proactively craft his communication behavior at work by telling colleagues when he is unable to communicate with them during leisure time. Consequently, the development of our scale links the above WNB definition to the crafting concept considering an individual to be the effective agent of their WNB.

## The crafting approach as a point of origin for work-nonwork balance crafting: A brief review

Thus far, we described the relevance and development of WNB conceptually and outlined its relevance in the current world of work. In this section, we linked the origin of crafting with WNB to devise a new crafting construct beyond job crafting. Before we apply the crafting concept to the new domain of WNB crafting, we first review the well-established job crafting concept. Job crafting has been referred to as the self-initiated behaviors that employees take to shape, mold, and change their jobs (Wrzesniewski and Dutton, 2001; Tims and Bakker, 2010; Tims et al., 2012; Zhang and Parker, 2019). Crafting can help satisfying psychological needs and exhibits favorable outcomes, such as employee performance and well-being (for a review see Rudolph et al., 2017; Zhang and Parker, 2019; Mäkikangas and Schaufeli, 2021). Wrzesniewski and Dutton (2001) initially described this concept as a social constructivist approach that refers to “the physical and cognitive changes individuals make in the task or relational boundaries of their work” (p. 179). Wrzesniewski and Dutton distinguished three types of job crafting: (1) the changes employees make to adjust their work tasks (task crafting); (2) the quality and frequency of the relationships they have at work (relational crafting); and (3) the subjective meaning they assign to their work (cognitive crafting). These changes may be intentional and affect “the meaning of the work and one’s work identity” (Wrzesniewski and Dutton, 2001). This perspective on job crafting has inspired a large field of research because it helps, at least partially, overcome formal job constraints and invites new opportunities for individual work redesign.

Subsequently, Tims et al. (2012) integrated the crafting concept into the job demands resource (JD-R) model (Demerouti et al., 2001; Bakker and Demerouti, 2017) as a way to balance demands and resources and establish a person-job fit (Zhang and Parker, 2019). The JD-R model is a person-centred theoretical framework (Fan et al., 2019) and characterises crafting as a “self-initiated” and “self-targeted” individual-level strategy to increase person-job fit (Tims et al., 2012). Job demands (e.g., challenging and hindering demands) refer to aspects of a job that require sustained physical, emotional, or mental effort, whereas job resources (e.g., structural and social resources) refer to job aspects that stimulate personal growth and development while being functional in achieving work goals and simultaneously reducing job demands (Demerouti et al., 2001; Bakker and Demerouti,

2007; Lesener et al., 2019). Crafting, then, is defined as “the changes that employees may make to balance their job demands and job resources with their personal abilities and needs” (Tims et al., 2012). Extending the perspective on crafting in the light of resources and demands, Costantini et al. (2021) showed that employees can also restore the fit between their demands and preferences by optimising their demands instead of only decreasing them, see also Demerouti and Peeters (2018). This insight offers a new perspective to crafting research. Importantly, such demands optimizing crafting expands the work characteristics and tailors the work process to be more efficient by eliminating obstacles and simplifying procedures (Costantini et al., 2021). In summary, crafting includes the perspective that individuals can adapt their job to improve its fit to their abilities, needs, and preferences (Wrzesniewski and Dutton, 2001; Lichtenthaler and Fischbach, 2019).

The field has recently proceeded to transfer the concept of job crafting to life domains other than work, such as home crafting (Demerouti et al., 2019), off-job crafting (De Bloom et al., 2020), life crafting (Schipper and Ziegler, 2019), and leisure crafting (Berg et al., 2010; Petrou and Bakker, 2016). Crafting may also help achieve the requirements of modern work to nonwork arrangements. Accordingly, we assumed that crafting allows an individual to create an idiosyncratic balance of work and nonwork.

## Work-nonwork balance crafting concept underlying our scale

Our scale builds on a pioneering qualitative study by Sturges (2012) who defined crafting for WNB “as the unofficial techniques and activities that individuals use to shape their own work-life balance” (p. 1540). There, such crafting is characterized as self-initiated (Kossek and Ozeki, 1999), and goal-oriented behavior (Parker et al., 2010) proactively taking control over one’s WNB (Clark, 2000). Overall, it is driven by preferred role configurations in the respective life domains.

Sturges (2012) identified the three following crafting strategies for WNB, on which the development of our scale is established:

1. *Physical crafting* includes behaviors, such as time management, selection, and alternation of work location (e.g., leaving work early to do some necessary personal chores). The qualitative interviews indicated two subcategories: (a) *Temporal crafting* is about managing the time spent at work to achieve a WNB. An example here is finishing work on time, that is, adhering to contracted working hours. This factor might not entirely be the employee’s decision and necessarily be proactively negotiated with a supervisor, e.g., to avoid conflicts and synchronise work schedules. Therefore, temporal crafting may also involve relational crafting, which is outlined below. However, temporal crafting also refers to after-work time, that is, committing time to an event in the evening, such as sports or theatre. (b) *Locational crafting* is reported as occasionally choosing to work from home instead or in addition to working at the office. Thereby, locational crafting



can help in accomplishing family chores or in reducing the strains of commuting. Note that these categories did not include *choosing a job* and *reducing travel time* by moving to live near work, since these factors are substantial life changes that go beyond typical crafting strategies that can vary day by day.

2. *Relational crafting* involves managing and using relationships at work and at home to secure and reinforce the kind of WNB that an individual wants to achieve (Sturges, 2012). Furthermore, relational crafting is structured in two sub-types: (a) *Managing out-of-work relationships* refers to socializing with people working on the same working times, which helps maintain their belief that one's concept of WNB is typical. (b) *Managing work relationships* occurs by reducing unnecessary interactions at work and workloads; for example, when work is extended because the individual wants to reach a goal in the work domain, the quality of relations can be ensured by communicating this proactively to relevant persons in the work context, also management.

Finally, (3) *cognitive/emotional crafting* involves defining and framing the perceptions of what WNB means and entails (Sturges, 2012): *Conceptualization and the definition* of an idiosyncratic orientation and balance toward work and nonwork (e.g., meeting social engagements during the week despite regular long working hours), *prioritizing* work instead of the nonwork life domain (e.g., prioritizing work and highlighting the relevance of work-related achievements), and finally, *compromising* the ideal WNB to reach long- and short-term goals as a compromise in balancing both life domains, (e.g., investing long working hours for a sprint to reach a work-related achievement). We renamed Sturges' (2012) dimension of cognitive crafting into cognitive/emotional crafting to integrate affective aspects as these aspects are particularly relevant for work to nonwork conflicts or enrichment (French et al., 2018; Wayne et al., 2022). Moreover, this component seems important as (role) balance has cognitive and affective elements (Casper et al., 2018). Besides the prioritization of work as orienting principle of one's WNB we consequently add prioritizing non-work aspects for balancing both life domains. Further below, we outlined how the items of the WNBC scale align with these crafting techniques, see also Table 1.

## Adding crafting of the life domain boundary to work-nonwork balance crafting

Considering the eroding work-nonwork boundary (Allen et al., 2020; Vaziri et al., 2020), the balance, as well as the boundary, between the work-nonwork domains must be crafted.

The concept of boundary management (Sturges, 2008; Kossek et al., 2012) refers to the active shaping of boundaries. It is defined as a "construct that reflects our mental models about the permeability of the relationship between multiple life roles, our preferences about how to manage those relationships, and our choices and constraints regarding how we enact those preferences" (Rothbard and Ollier-Malaterre, 2015).

Boundary management practices are related to both interference and enhancement processes across life domains (Bulger et al., 2007). These boundary management practices are particularly linked to the successful integration of multiple important life roles (Rothbard et al., 2005; Kossek et al., 2021). Such life roles are crucial in the WNB definition used in our study (Casper et al., 2018; Vaziri et al., 2020) and are consequently important for WNBC. Research referring to the qualities of the boundaries between life domains typically defines core characteristics of the boundaries between work and other spheres of life that are relevant for WNBC. As such, *permeability* refers to the extent to which psychological and behavioral aspects can diffuse through the boundaries one has set (Ashforth et al., 2000; Clark, 2000). Second, *flexibility* means the contraction or expansion of a domain regarding its temporal and spatial constraints and is oriented toward requirements in either life domain (Hall and Richter, 1988). For example, if family chores are plenty, this allows extending the time spent within this life domain (e.g., leaving work early or reducing daily working time for care duties [flexibility] or answering calls from family members during working time [permeability]).

Moreover, the active configuration of work-nonwork boundaries is conceptualized on a continuum from segmentation to integration (Ashforth et al., 2000; Kossek and Lautsch, 2012; Wepfer et al., 2018). *Segmentation* refers to strict boundary-setting and inflexible and impermeable role boundaries. *Integration* is characterized by flexible and permeable role boundaries. Therefore, segmentation/integration characterizes the extent to which work and nonwork roles are separated.

Specifically, the nomological net for the item development of our WNBC is built on the work-home boundary theory (Ashforth et al., 2000). Ashforth et al. (2000) refer to roles that hold expectations, rules, and norms in respective life domains and converge with the conceptualizing of roles in the WNB definition by Casper et al. (2018), which underlies our WNBC scale. These roles and role transitions between life domains are characterized as psychological, physical, and temporal constructs. Thus, this theory aligns well with the physical and cognitive-emotional dimensions of Sturges' (2012) WNBC techniques.

In the item development of the WNBC scale, we involved the proactive boundary management behaviors outlined in detail in the item description further below.

But here, we can summarize our conceptual basis of our scale development by providing the following complete definition underlying our scale: WNBC entails the unofficial techniques and activities individuals use to shape their own work nonwork balance under consideration of their boundary preferences and their favored combination of work and nonwork roles.

## Advantages over an earlier approach to measuring crafting a work-nonwork balance

Recently, Gravador and Teng-Calleja (2018) developed a work-life balance crafting behaviors survey. Like our scale, this

TABLE 1 EFA factor structure.

Item		Factor loadings		
		WNBC-work	WNBC-nonwork	Crafting dimension
1	If I must get personal chores done during working time, I make sure that my work will not be negatively affected.	<b>0.46</b>	0.05	Cogn./Emot.
2	When I must get some work chores done, I come home later or go to work earlier, if necessary.	<b>0.79</b>	−0.22	Phys.
3	In some situations, I temporarily emphasize my work (e.g., work more before vacations to get things done).	<b>0.90</b>	−0.41	Cogn./Emot.
4	In certain phases of my life, I temporarily prioritize my work life to achieve a work goal.	<b>0.98</b>	−0.51	Cogn./Emot.
5	I try hard to meet my professional obligations, even if I'm demanded strongly by my private life.	<b>0.72</b>	−0.11	Cogn./Emot.
6	When I'm in a bad mood because of personal matters, I try not to let this affect my work environment.	<b>0.39</b>	0.14	Rela.
7	I make sure that I can enjoy the pleasant aspects of my work, even though I'm strongly demanded by my private life.	<b>0.54</b>	0.10	Rela./Cogn./Emot.
8	I tell people of my private environment when I'm unable to communicate with them during working time or to take care of private matters.	<b>0.48</b>	0.03	Rela.
9	If I must get work chores done during leisure time, I make sure that my personal life will not be negatively affected.	−0.20	<b>0.68</b>	Cogn./Emot.
10	When I must get some personal chores done, I come to work later or go home earlier, if necessary.	0.08	<b>0.41</b>	Phys.
11	In some situations, I temporarily emphasize my private life (e.g., when a friend needs my support).	−0.27	<b>0.75</b>	Cogn./Emot.
12	In certain phases of my life, I temporarily prioritize my private life to achieve a nonwork goal.	−0.38	<b>0.87</b>	Cogn./Emot.
13	I try hard to meet my private obligations, even if I'm demanded strongly by my work.	−0.06	<b>0.67</b>	Cogn./Emot.
14	When I'm in a bad mood because of work matters, I try not to let this affect my personal environment.	0.03	<b>0.45</b>	Rela.
15	I make sure that I can enjoy the time with my partner, my family or my friends even though I'm strongly demanded by my work.	−0.13	<b>0.79</b>	Rela./Cogn./Emot.
16	I tell people of my professional environment when I'm unable to communicate with them during leisure time or to take care of professional matters.	0.17	<b>0.34</b>	Rela.

Austrian, German, and Swiss sample in study 1,  $N = 320$ , factor loadings  $> 0.32$  appear in bold. Cogn., cognitive; Emot., emotional; Rela., relational; Phys., physical.

instrument refers to [Sturges \(2012\)](#), but invokes a different theoretical framework. This instrument measures behaviors revolving around taking time off from work, fostering relationships with family and others, and working efficiently. The 25 items of the instrument are cumulated in eight clusters of proactive work-life balance crafting behavior themes ([Gravador and Teng-Calleja, 2018](#)).

Several shortcomings of this former approach are: First, [Gravador and Teng-Calleja's \(2018\)](#) instrument contains the physical and relational crafting dimensions from [Sturges' \(2012\)](#) concept, whereas the essential cognitive dimension is omitted. Cognitive crafting refers to framing and redefining WNB and shapes how employees view their WNB without engaging in specific behaviors. Therefore, we added this dimension to our

scale. Second, [Gravador and Teng-Calleja \(2018\)](#) reported that only one of the eight scale dimensions, that is “working efficiently,” is associated with subjective well-being (satisfaction with life scale; [Diener et al., 1985](#)). In a second model, only two of the eight scale dimensions turned out to be related to work-life balance (work-life balance scale; [Brough et al., 2014](#)): “working effectively” and “saving private time.” These findings provide insights into the relative importance of crafting efforts but also shows that only few crafting dimensions of an extensive crafting scale matter. Accordingly, measuring crafting with fewer dimensions and items seems a more efficient way when examining links to well-being and WNB. Third, the instrument presented by [Gravador and Teng-Calleja \(2018\)](#) contains 25 items and eight clusters, and we determined the need for

parsimonious instruments for, e.g., measurements in digital applications and online surveys. Besides the number of items, the complex structure and the high number of factors call for new scale development, building on the valuable results reported by [Gravador and Teng-Calleja \(2018\)](#). To the best of our knowledge, a WNBC scale that covers all three sub-dimensions proposed by [Sturges \(2012\)](#), that is, physical, relational, and cognitive/emotional crafting, has never been established. We aim to address this by developing the proposed new WNBC scale.

Moreover, three additional reasons are in favor of developing a new scale. First, the WNBC scale can potentially produce new opportunities for research by integrating two very productive and timely research streams, namely, WNB ([Greenhaus and Callalan, 2020](#)) and crafting ([Hu et al., 2020](#)). Second, our new scale can inform occupational health interventions, for which corresponding research and the development of an intervention are in progress. Third, we proposed a parsimonious two-factor structure of this scale, covering crafting in work and the nonwork life domains. Based on the presented considerations, our approach has advantages compared to previous approaches.

## Overview of the five studies for the development and validation of the work-nonwork balance crafting scale

To develop and validate the WNBC scale, we conducted a series of five studies. Studies 1, 2, 3, and 5 were conducted in German-speaking European countries, and study 4 relied on data from Finland and Japan. Study 1 involved generating and adapting items using expert reviews and exploratory factor analysis of the scale. Study 2 encompassed confirmatory factor analysis and assessed convergent validity, and measurement invariance across samples of study 1 and 2. In study 3, the incremental validity of the WNBC scale was studied and compared to the work-life indicator—a measure capturing work-nonwork function and the interplay of both life domains which is outlined further in detail below. The predictivity of the WNBC scale for work and life satisfaction was also assessed. Study 4 tested the scale's criterion validity and test–retest reliability and provided initial evidence for the intercultural applicability of the WNBC scale. This study assessed the associations of the WNBC scale with work engagement, job performance, subjective vitality, and family role performance. Finally, study 5 involved measuring the relevance of WNBC for a global factor of WNB and the affective, effectiveness, and involvement dimensions of WNB.

In the following sections, we first presented the methods and results of each study separately. We then outlined and discussed the findings of these studies. Finally, the limitations and practical implications are presented.

## Study 1: Item development and factor identification

The development of an instrument that measures WLBC behaviors followed a stepwise approach. In the first step, we conducted comprehensive research of the relevant literature on crafting and another on the work-nonwork interface/balance. In particular, six instruments guided us in the development of new items: the *boundary enactment scale* ([Wepfer et al., 2018](#)), the *work-life crafting scale* ([Peeters and Demerouti, 2014](#)), the *job crafting scale* ([Tims et al., 2012](#)), the *work-life indicator* ([Kossek and Lautsch, 2012](#)), the *work-nonwork boundary strength scale* ([Hecht and Allen, 2009](#)), and the *SWING scale* ([Geurts et al., 2005](#)).

The existing scales inspired us regarding the proactive, self-initiated, and goal-oriented wording of the items. Based on this feature, we formulated new items in the second step. This procedure resulted in 37 items, which we grouped along with the theoretically assumed and from [Sturges \(2012\)](#) derived dimensions of “physical,” “cognitive/emotional,” and “relational” WNBC enacted both in the work and nonwork life domains. In the third step, we sent these items to seven experts in occupational health psychology and requested their comments.<sup>2</sup> In addition, we asked laypersons to assess the comprehensibility and simplicity of the items. Given the feedback, the items were reworded and removed, and we confirmed that matching pairs of items for each life domain were constructed. In detail, one item captured crafting behaviors in the “physical,” “cognitive/emotional,” and “relational” dimensions in the work, and another matching item captured these respective WNBC in the nonwork life domain (see item outline below). Afterwards, we propose a parsimonious two-factor structure for this scale, representing the three WNBC efforts in the two life domains to be balanced. Setting up the scale with two factors representing each life domain will help in studying such crafting efforts with domain-specific antecedents and outcomes ([Haar et al., 2019](#)). Moreover, this scale structure will allow for measuring spillover effects across life domains ([Wayne et al., 2022](#)). For example, crafting for WNBC-nonwork may enhance processes that allow for and sustain recovery from work and, in turn, result in a better resource situation (e.g., better job performance, less work-related strain).

This procedure led to a preliminary pool of 32 items using a five-point Likert-type scale (1 = strongly agree, 5 = strongly disagree). Selecting a neutral scale mid-point is helpful because this answering format can be rescaled ([Dawes, 2008](#)), and it offers comparability with other scales in crafting research also used in this format (e.g., [Tims et al., 2012](#)).

Scree plots and other EFA procedures yielded no initial factor structure. We then applied the theory-driven model selection approach to the exploratory factor analysis ([Preacher et al., 2013](#);

<sup>2</sup> We would like to thank Sylvia Broetje, Luisa Grimm, Laurenz Meier, Dana Unger and Wilmar Schaufeli for their comments on earlier version of this scale.

Goretzko et al., 2019) for selecting the number of factors ( $m$ ) that are maintained: “The role of theory in this process should be to determine, *a priori*, a set of plausible candidate models (i.e., values of  $m$ ) that will be compared using observed data.” (Preacher et al., 2013). Based on our theoretical assumptions concerning the structure of this new scale, the following competitive factor solutions were tested: (a) a one-factor solution testing for a general WNBC factor; (b) a two-factor solution representing WNBC as a two-dimensional construct of work and nonwork; and (c) a three-factor solution representing the physical, cognitive/emotional, and relational WNBC as distinct factors. We tested these concurrent factor solutions since single- and three-factor solutions are prominent in relating crafting concepts beyond job crafting in the literature (see Demerouti et al., 2019 for a three-factor solution or Petrou and Bakker, 2016 for a single-factor solution).

*Research Question 1: Does the Work-Nonwork Balance Crafting Scale have (a) a one-factor structure representing physical, relational, and cognitive/emotional crafting in one general factor, (b) a two-factor structure representing crafting in the life domains of work and nonwork, or (c) a three-factor structure representing physical, relational, and cognitive/emotional crafting as distinct factors?*

*Hypothesis 1: The Work-Nonwork Balance Crafting Scale displays satisfactory reliability in the derived factors.*

## Methods

### Procedure and participants

The participants were recruited through an online panel data service in Austria, Germany, and Switzerland. All items were presented in German. Participation was voluntary and anonymous, and the confidentiality of their data was guaranteed. Persons who declared that they were under 18 years of age, unemployed, self-employed, or worked less than 9 h a week were not included. We excluded self-employed individuals because they represented a small and divergent group and because the social context at work is a relevant factor for crafting, even if crafting is a bottom-up strategy (Kerksieck et al., 2019; Tims and Parker, 2019). A total of 330 participants completed the questionnaire in April/May 2018. We used a *post hoc* multivariate outlier statistic to assess data quality controlled for Mahalanobis (1936) distance, which is also recommended for online studies (Niessen et al., 2016). The participants who answered the questionnaire in less than 5 min were classified as speeders ( $N=7$ ) and were excluded with multivariate outliers ( $N=3$ ), resulting in a sample size of 320 participants. The data were analyzed with SPSS 28.

Exactly half of the resulting sample was female. The average age of the participants was 43.96 years ( $SD=12.11$ ). Participants from Germany (63.3%), Austria (19.1%), and Switzerland (17.6%). A percentage of 46.3 worked 40–44 h per week. The average organizational tenure was 12.08 years ( $SD=10.66$ ). Most participants had completed vocational education (40.1%) or had

a university degree (20.1%). The largest groups were employed in healthcare/social services (15%), public administration (12.2%), and commerce (10.3%).

## Results

### Preparatory analysis

To assess potential common method bias (Podsakoff et al., 2012) in our self-reported data, we conducted a *post hoc* Harman single-factor test. An unrotated factor analysis revealed that the obtained factor accounted for 22.6% of the variance, suggesting that common method bias showed no pervasive effect on our data.

### Exploratory factor analysis

To apply the model selection approach to exploratory factor analysis (Preacher et al., 2013; Goretzko et al., 2019), we used a criterion value of 0.32 to retain items (Costello and Osborne, 2005; Tabachnick and Fidell, 2014). Using oblimin rotation and Kaiser normalization ( $KMO=0.774$ ,  $\chi^2=1207.680$ ,  $df=120$ , Bartlett-test  $p<0.001$ ), we obtained a significant solution with 16 items in total and eight items in each of the two factors work and nonwork, explaining 37.63% of the variance. The alternative solution involving one factor provided lower amounts of explained variance (22.55%), whereas the three-factor solution (47.42%) did not yield a meaningful distribution of items aligning with these factors. Consequently, we derived a two-factorial structure of the WNBC scale, solving Research Question 1. The two factors were labelled “WNBC-work” and “WNBC-nonwork.” WNBC-work (-nonwork) refers to crafting one’s WNB, orienting efforts towards the life domain work (nonwork) according to one’s consideration of boundary preferences and favored combination of work and nonwork roles in a respective life domain.

Each factor contained eight items: one item covering physical crafting, four items covering cognitive/emotional crafting, and three items covering relational crafting, following the logic of Sturges’ (2012) qualitative analysis (Table 1).

The two dimensions demonstrated reliability above the recommended 0.70 level (Nunnally and Bernstein, 1994) with McDonald’s  $\omega$  for WNBC-work = 0.75 and WNBC-nonwork = 0.71, confirming hypothesis 1.

### Representation of crafting techniques in the WNBC scale

After determining 16 items to retain, we offer an item-by-item breakdown of how these items of the WNBC scale represent the crafting techniques identified in the qualitative study by Sturges (2012). We empirically derived two dimensions (work/nonwork). Both dimensions contain the crafting techniques referring to (a) *cognitive/emotional*, (b) *physical*, and (c) *relational crafting*. These three crafting techniques are equally represented in both scale dimensions, referring to work or nonwork. The following outline extends the item overview presented in Table 1, referring to crafting techniques and scale factors. Items 1 + 9 involve *cognitive/emotional*



*crafting*, particularly the techniques of *prioritizing* one life domain “If I must get personal chores done during working time, I make sure that my work will not be negatively affected.” Items 3 + 11 likewise involve *cognitive/emotional crafting*; in detail, the technique of *prioritizing*: “In some situations, I temporarily emphasize my work (e.g., work more before vacations to get things done).” This *cognitive/emotional* crafting technique is also included in the following items that refer to the definition of an idiosyncratic WNB and *comprising* an ideal WNB. This may help for reaching goals in one of these life domains: Items 4 + 12 state “In certain phases of my life, I prioritize my work life in the meantime to achieve a work goal” and in items 5 + 13 read “I try hard to meet my professional obligations, even if I’m demanded strongly by my private life.” Focusing on emotional aspects of *cognitive/emotional crafting* and also involving *relational crafting* is reflected by items 7 + 15 “I make sure that I can enjoy the time with my partner, my family, or my friends even though I’m strongly demanded by my work.”

Items 2 + 10 relate to *Sturges’ (2012) physical crafting*, integrating both aspects of this dimension which are *temporal* and *locational crafting*: “When I must get some personal chores done, I come to work later or go home earlier, if necessary.”

In contrast, items 6 + 14 and items 8 + 16 refer to *relational crafting* aspects in the terminology of *Sturges’* crafting techniques, since affect control helps to sustain positive relationships: “When I’m in a bad mood because of personal matters, I try not to let this affect my work environment” or “I tell people of my professional environment when I’m unable to communicate with them during leisure time or to take care of professional matters.”

We aimed to cover crafting efforts oriented toward the work-nonwork boundary in the following items. The contraction or expansion of a life domains (boundary flexibility) for tailoring boundaries toward requirements in either life domain is included in Items 2 + 10 “When I must get some work chores done, I come home later or go to work earlier, if necessary.” Items 6 + 14 involve proactively managing the boundary to prevent negative emotional life-domain spillovers: “When I’m in a bad mood because of work matters, I try not to let this affect my personal environment.” Items 8 + 16 state, “I tell people of my private environment when I’m unable to communicate with them during working time or to take care of private matters.” Here, the proactive boundary management strategy of segmentation and the prevention of permeability is applied to cover life domains from intruding and potentially disturbing communication across life domains.

## Study 2: Confirming factorial structure, measurement invariance, and convergent validity of the work-nonwork balance crafting scale

We investigated whether the factorial structure proposed in study 1 can be confirmed in this second study. We selected a single- and a three-factor solution as a concurrent factorial

structure because these solutions can be derived from conceptual reasoning as outlined above. We used confirmatory factor analysis to test the following hypothesis:

*Hypothesis 2:* The two-factor solution of the Work-Nonwork Balance Crafting scale fits the data better than the alternative one- or three-factor solutions.

Moreover, invariance tests were performed for the psychometric properties of the assessed scale factors and their independence across samples 1 and 2.

*Hypothesis 3:* The Work-Nonwork Balance Crafting scale is invariant across the distinct samples in studies 1 and 2.

WNBC is defined as a proactive, self-initiated and goal-oriented individual-level, bottom-up approach. Consequently, WNBC is rooted in (a) personal initiative, which means that individuals take an active, self-starting approach to work and go beyond formal job requirements (*Frese et al., 1997*), and in (b) proactive personality, which is the relatively stable tendency to affect environmental change and is relatively unconstrained by situational factors (*Bateman and Crant, 1993*). Moreover, a proactive personality means taking initiative and action until a substantial change occurs (*Raemdonck et al., 2017*). Such traits are considered the underlying traits of job crafting (e.g., *Bakker et al., 2012*) and are assumed as such for WNBC. Therefore, proactive personality and personal initiative may drive the stability of WNBC over time and indicate convergent validity.

*Hypothesis 4a:* Both Work-Nonwork Balance Crafting scale dimensions correlate positively with personal initiative.

*Hypothesis 4b:* Both Work-Nonwork Balance Crafting scale dimensions correlate positively with proactive personality.

## Methods

### Procedure and participants

Data were collected in April/May 2018 using the same procedure and inclusion criteria as that in study 1. Study 2 involved 324 new participants from Austria, Germany, and Switzerland. As previously mentioned, those who answered the questionnaire in less than 5 min ( $N = 8$ ) and multivariate outliers were not included ( $N = 5$ ), resulting in a sample size of 311 participants.

Sample 2 consisted of 57.6% male participants. The participants’ average age was 41.42 years ( $SD = 10.92$ ). They lived in Germany (69.5%), Austria (18%), and Switzerland (12.5%). Half of the participants (47.9%) worked 40–44 h per week. On average, they had worked for 9.94 years ( $SD = 9.3$ ) for their current employers. Most participants had completed vocational education (42.1%) or had a university degree (24.4%). The

largest employment groups were employed in public administration (13.2%), commerce (11.9%), and the production of goods (8.4%).

## Measures

WNBC was measured according to its subscales [see Table 1, scale parameters, including McDonald's  $\omega$  (Hayes and Coutts, 2020), are reported in Table 3], with items 1–8 representing WNBC-work and items 9–16 representing WNBC-nonwork. The participants rated the items using a five-point Likert-type scale with response options from 1 (totally disagree) to 5 (totally agree).

Personal initiative refers to active and self-induced behaviour beyond formal obligations in the workplace (Frese et al., 1997). Personal initiative was measured with a seven-item scale, with five-point Likert-type response options ranging from 1 (totally disagree) to 5 (totally agree). A sample item from the scale is “I use opportunities quickly to attain my goals.”

Proactive personality was measured with the six-item German translation of the proactive personality scale (Bateman and Crant, 1993). A sample item is “If I believe in an idea, no obstacle will prevent me from making it happen,” and it was answered on a five-point Likert-type scale with response options from 1 (totally disagree) to 5 (totally agree).

The items of the scales were translated into German and controlled by back-translation into the original English language.

## Results

### Preparatory analysis

A Harman single factor test was computed to detect common method bias, and the results disclosed that the obtained single factor accounted for 21.1% of the variance, suggesting that common method bias was not present.

### Confirmatory factor analysis

To conduct the confirmatory factor analysis, we tested three different factor models in unison with hypotheses 1a–1c in the EFA section. Confirmatory factor analysis was performed using SPSS AMOS 28. Table 2 shows the following indices for model fit assessment: comparative fit index (CFI), incremental fit index (IFI), root mean square error of approximation (RMSEA), and standardized root mean squared residual (SRMR). CFI and IFI must reach the cut-off value of 0.90 (Byrne, 2001), RMSEA < 0.06, SRMR < 0.08 (Hu and Bentler, 1999), and  $\chi^2/df$  ratio < 2 (Tabachnick and Fidell, 2014). Measurement residuals were correlated within and across latent constructs in an iterative process when significantly indicated and conceptually reasoned (e.g., for items 4 and 5, see Table 1).

The one-factor model did not display a good fit ( $\chi^2 = 267.883$ ,  $df = 86$ ,  $\chi^2/df = 3.12$ , CFI = 0.815, IFI = 0.822, RMSEA = 0.083, SRMR = 0.084). The three-factor model did display an equally poor fit ( $\chi^2 = 266.194$ ,  $df = 85$ ,  $\chi^2/df = 3.13$ , CFI = 0.816, IFI = 0.822, RMSEA = 0.083, SRMR = 0.083). The goodness-of-fit indices of the

two-factor model were good and superior ( $\chi^2 = 162.248$ ,  $df = 85$ ,  $\chi^2/df = 1.91$ , CFI = 0.922, IFI = 0.924, RMSEA = 0.054, SRMR = 0.068). In the two-factor model, all items loaded significantly on the matching latent variables ( $p < 0.01$ ). In addition, the difference in the RMSEA approach with a 0.015 cut-off value as a method for determining the number of factors to retain was applied (Finch, 2020). Compared with the two-factor solution, both the one-factor and the three-factor models ( $\Delta RMSEA = 0.029$ ), exceeded the recommended threshold. As the two-factor model best represented the data and outperforms the other models, hypothesis 2 was supported.

### Invariance test

To test for the invariance of the WNBC scale, we performed a stepwise multigroup analysis (Byrne, 2004; Brown, 2015) with samples 1 and 2. These samples provide two distinct groups of participants. To some extent, this type of invariance testing resembles longitudinal invariance testing within the same sample, where time is the only distinct parameter (e.g., Spurk et al., 2011). So, we tested whether the scale functioned similarly in two different samples. We followed Cheung and Rensvold's (2002) recommendation using the modelling approach and fit indices to verify the measurement invariance models. CFI differences ( $\Delta CFI$ ) lower than 0.01 were employed as the cut-off criteria. We further add fit indices to this test. In the first step, we tested the baseline model (model 1 in Table 2), in which all parameters were unconstrained. In the next step, model 2 with fixed factor loadings was compared and was invariant ( $\Delta CFI = 0.002$ ,  $\Delta IFI = 0.001$ ,  $\Delta SRMR = 0.000$ ,  $\Delta RMSEA = 0.002$ ). Model 3, with additional constrained factor variances did not differ from the baseline model ( $\Delta CFI = 0.001$ ,  $\Delta IFI = 0.000$ ,  $\Delta SRMR = 0.002$ ,  $\Delta RMSEA = 0.002$ ). In model 4, factor covariances were constrained additionally. The model was not different from the baseline model ( $\Delta CFI = 0.001$ ,  $\Delta IFI = 0.003$ ,  $\Delta SRMR = 0.003$ ,  $\Delta RMSEA = 0.004$ ). The multigroup tests supported hypothesis 3, indicating measurement invariance across samples for the WNBC scale.

### Convergent validity

To assess the convergent validity of the WNBC scale, we conducted analyses with personal initiative and proactive personality in samples 1 and 2. Table 3 shows partial correlations controlling for age, gender, education, and vocational position.

As hypothesized, positive correlations for personal initiative were found in sample 1 for WNBC-work ( $r = 0.49$ ,  $p < 0.001$ ) and WNBC-nonwork ( $r = 0.29$ ,  $p < 0.001$ ) as well as for sample 2 for WNBC-work ( $r = 0.46$ ,  $p < 0.001$ ) and WNBC-nonwork ( $r = 0.29$ ,  $p < 0.001$ ). Proactive personality correlated in sample 1 with WNBC-work ( $r = 0.43$ ,  $p < 0.001$ ) and WNBC-nonwork ( $r = 0.29$ ,  $p < 0.001$ ) as well as in sample 2 for WNBC-work ( $r = 0.43$ ,  $p < 0.001$ ) and WNBC-nonwork ( $r = 0.27$ ,  $p < 0.001$ ). Thus, hypotheses 4a and 4b were confirmed in both samples. These results indicate the convergent validity of the WNBC scale with constructs that are fundamentally associated with crafting.

TABLE 2 Fit statistics for confirmatory factor analyses and invariance tests.

Model	$\chi^2$	df	CFI	IFI	SRMR	RMSEA
<i>CFA</i>						
Two-factor model	162.248	85	0.922	0.924	0.068	0.054
Three-factor model	266.194	85	0.816	0.822	0.083	0.083
One-factor model	267.883	86	0.815	0.822	0.084	0.083
<i>Invariance test</i>						
Model 1 (default model)	365.314	171	0.907	0.910	0.068	0.043
Model 2 (factor loadings constrained)	376.668	185	0.909	0.911	0.068	0.041
Model 3 (factor loadings and factor variances constrained)	380.905	187	0.908	0.910	0.070	0.041
Model 4 (factor loadings, factor variances, and covariances constrained)	402.800	205	0.906	0.907	0.071	0.039

CFI, comparative fit index; IFI, incremental fit index; SRMR, standardized root mean squared residual; RMSEA, root mean square error of approximation.

TABLE 3 Partial correlations and McDonald's  $\omega$  (between brackets on the diagonal) among the WNBC dimensions and personal initiative and proactive personality (controlled for gender, age, education level, and vocational position).

	<i>M</i>	<i>SD</i>	<b>1</b>	<b>2</b>	<b>3</b>
<i>1. WNBC-work</i>					
Study 1	3.75	0.62	(0.75)		
Study 2	3.74	0.60	(0.72)		
<i>2. WNBC-nonwork</i>					
Study 1	3.48	0.61	0.25***	(0.71)	
Study 2	3.66	0.55	0.25***	(0.64)	
<i>3. Personal initiative</i>					
Study 1	3.80	0.60	0.49***	0.29***	(0.85)
Study 2	3.80	0.64	0.46***	0.29***	(0.87)
<i>4. Proactive personality</i>					
Study 1	3.65	0.61	0.43***	0.29***	0.75*** (0.84)
Study 2	3.65	0.62	0.43***	0.27***	0.80*** (0.83)

Austrian, German, and Swiss samples. Study 1: N = 320; study 2: N = 311.

M, mean; SD, standard deviation.

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

## Study 3: Incremental validity of the work-nonwork balance crafting scale

We assessed the WNBC scale's incremental validity compared to the work-life indicator (Kossek et al., 2012). The work-life indicator measures: (a) if work interrupts nonwork; (b) if nonwork interrupts work; (c) the perceived psychological control regarding the work-nonwork boundary and the degree of identification with, (d) a family role or (e) a work role. The WNBC scale and the work-life indicator share some similarities because both refer to work-nonwork function, and both scales focus on the interplay of both life domains. However, the work-life indicator determines *if* "(1) cross-role interruption behaviors (work into nonwork and nonwork into work); (2) identity centrality of work and family roles; and (3) perceived control of boundaries" (Kossek et al., 2012) are at stake. WNBC refers to *how* these interruptions are proactively arranged

and integrated, considering the assumption of eroding work/nonwork boundaries that pressure WNB. Both concepts and scales are suitable for incremental validity testing by contrasting them on a WNB-related outcome, the satisfaction with job and life (Broeck et al., 2010; Haar et al., 2014). Therefore, we hypothesized:

*Hypothesis 5: Work-Nonwork Balance Crafting at T1 predicts (a) job satisfaction and (b) life satisfaction at T2 above the work-life indicator.*

## Methods

### Procedure and participants

The procedure was the same as in studies 1 and 2. Participants were invited *via* an online panel data service. The sample consisted of employees from Austria, Germany and Switzerland, and the survey was conducted longitudinally with two measurement points at three-month intervals. Short time intervals were suggested by Dormann and Griffin (2015) for pilot panel studies. Gainfully employed individuals working more than 20 h per week and aged 18–65 years were included in the sample. Wave 1 represented 2,104 individuals; in wave 2, 1,502 (71.39%) individuals took part 3 months later. Data collections took place in December 2018 and March 2019. The surveys were conducted in the German language, and each scale was administered at each survey wave. Participants had a mean age of 43.68 years ( $SD = 11.13$ ), and 50% were male. A percentage of 46 of the respondents reported working hours of 40–49 h per week. The sample represented a broad range of economic sectors and occupations, including health care and social work (13.5%), public administration (10.6%), and education (6.3%), and offered generalizability of the results.

### Measures

The WNBC scale was assessed with 16 items as developed in study 1 (Table 1). The reliability was McDonald's  $\omega = 0.67$  for the

WNBC-nonwork dimension and  $\omega = 0.70$  for the WNBC-work dimension. The WNBC scale was available in German, and other measures were translated from the published version in English to German and back-translated for accuracy.

The work-life indicator (Kossek et al., 2012) was assessed. Sample items read for the work interrupting nonwork subscale “I work during my vacations”, and for the nonwork interrupting work subscale “I do not think about my family, friends, or personal interests while working so I can focus”. Items were answered on a five-point scale ranging from *strongly disagree* to *strongly agree*. In our study, the subdimension’s reliability was  $\omega = 0.80$  for the work interrupting nonwork subscale and  $\omega = 0.78$  for the nonwork interrupting work subscale.

Life satisfaction and job satisfaction were measured using single-item measures adapted from Broeck et al. (2010): “How satisfied are you when you look at your private life as a whole?” and “How satisfied are you when you look at your professional life as a whole?” Both items were answered on a scale ranging from 1 (*extremely dissatisfied*) to 7 (*extremely satisfied*). Single-item measures are frequently used to assess general satisfaction (Lucas and Donnellan, 2012).

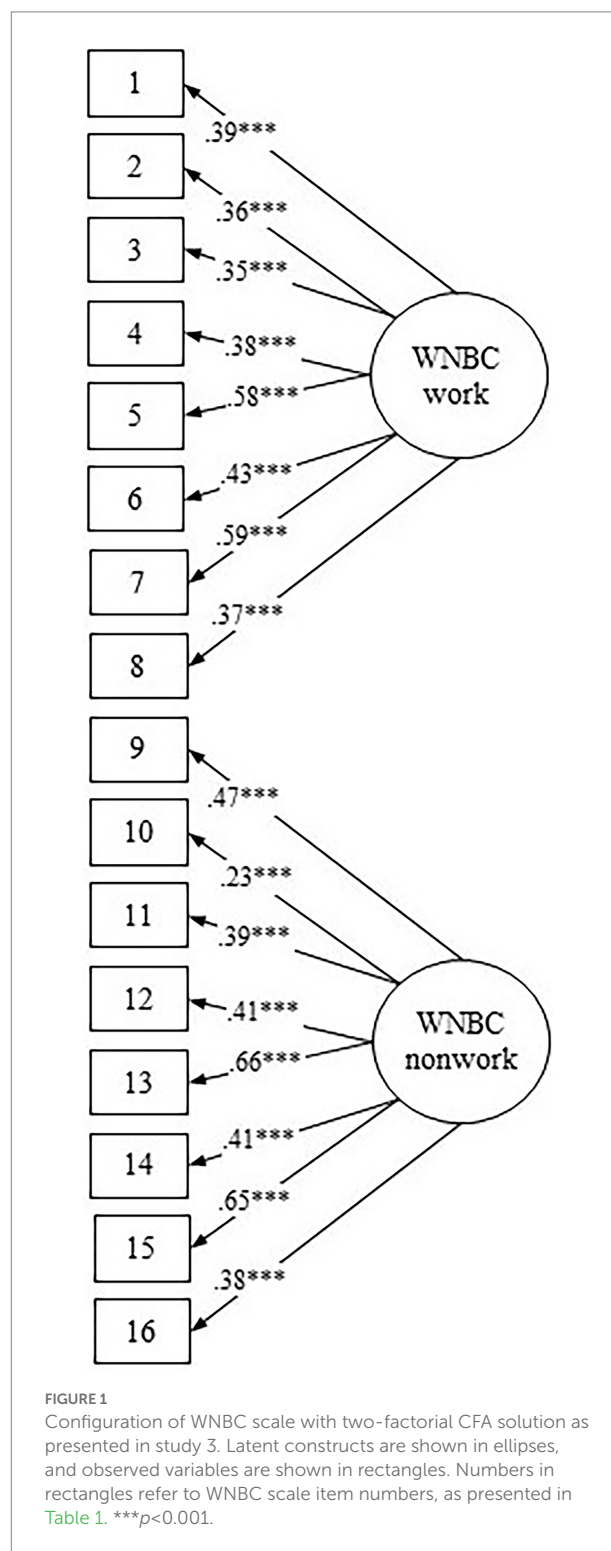
## Results

For the test of non-random sampling, we used multiple logistic regression (Goodman and Blum, 1996) while the dependent variable was coded dichotomously containing participants that either dropped out or participated in both study waves. The models included variables presented in the hypotheses (job/life satisfaction, work-life indicator). Nagelkerke (NK)  $R^2$  indicated that the explained variance in all estimated models was not substantial; therefore, none of the assessed variables indicated presence of non-random sampling: job satisfaction T1 ( $B = 0.04$ ;  $SE = 0.03$ ;  $p = 0.21$ ; NK  $R^2 = 0.00$ ), life satisfaction T1 ( $B = 0.03$ ;  $SE = 0.03$ ;  $p = 0.43$ ; NK  $R^2 = 0.000$ ), and work-life indicator T1 ( $B = -0.25$ ;  $SE = 0.08$ ;  $p < 0.001$ ; NK  $R^2 = 0.007$ ).

Before hypothesis testing, we replicated the CFA of the two-factorial structure of the WNBC scale with the largest sample in this longitudinal study at wave 1 ( $N = 2,014$ ):  $\chi^2 = 674.996$ ,  $df = 85$ , CFI = 0.908, IFI = 0.909, RMSEA = 0.057, and SRMR = 0.062, see Figure 1.

When testing for incremental validity, the outcomes of life/job satisfaction at T2 were simultaneously regressed on the WNBC scale, the work-life indicator, and the respective outcomes (life/job satisfaction) at baseline T1. The results yielded by hierarchical linear regression analysis are shown in Table 4.

Baseline-adjusted hierarchical linear regressions revealed that the WNBC scale explained the variance in two comprising and stable constructs above the work-life indicator (Table 4). In the first step, we included the respective variable at baseline (T1, accounting for a substantial amount of variance in the respective construct (job/life satisfaction) at T2). In the second



step, the included work-life indicator did not add explained variance to the regression model. In step 3, the WNBC scale increased the amount of explained variance and improved the model significantly. In addition, such crafting showed a pattern of domain-specific predictors, confirming hypothesis 5.



TABLE 4 Hierarchical regression analyses with predictors of job/life satisfaction.

	Life satisfaction T2					
	<i>B</i>	<i>SE B</i>	$\beta$	<i>p</i>	Adj. <i>R</i> <sup>2</sup>	$\Delta F$
<i>Step 1</i>						
Life satisfaction T1	0.512	0.021	0.532	< 0.001	0.283	
<i>Step 2</i>						
Life satisfaction T1	0.512	0.021	0.531	< 0.001	0.282	0.846 ns
Work-life indicator <i>Nwiw</i> T1	0.017	0.037	0.010	0.643		
Work-life indicator <i>Winw</i> T1	−0.048	0.038	−0.028	0.201		
<i>Step 3</i>						
Life satisfaction T1	0.499	0.021	0.517	< 0.001	0.296	15.973***
Work-life indicator <i>Nwiw</i> T1	−0.048	0.040	−0.029	0.227		
Work-life indicator <i>Winw</i> T1	−0.003	0.042	−0.002	0.949		
WNBC-nonwork T1	0.298	0.060	0.125	< 0.001		
WNBC-work T1	0.046	0.055	0.020	0.405		
<b>Job satisfaction T2</b>						
<i>Step 1</i>						
Job satisfaction T1	0.513	0.021	0.525	< 0.001	0.275	
<i>Step 2</i>						
Job satisfaction T1	0.512	0.021	0.524	< 0.001	0.274	0.290 ns
Work-life indicator <i>Nwiw</i> T1	−0.015	0.038	−0.009	0.693		
Work-life indicator <i>Winw</i> T1	0.027	0.038	0.016	0.476		
<i>Step 3</i>						
Job satisfaction T1	0.504	0.022	0.515	< 0.001	0.280	6.657**
Work-life indicator <i>Nwiw</i> T1	−0.017	0.041	−0.010	0.680		
Work-life indicator <i>Winw</i> T1	0.001	0.042	0.001	0.981		
WNBC-nonwork T1	0.050	0.060	0.021	0.407		
WNBC-work T1	0.174	0.057	0.075	0.002		

Austrian, German, and Swiss samples in study 3 at T1: *N* = 2,104 and T2: *N* = 1,502.

*Nwiw*, nonwork interrupting work; *winw*, work interrupting nonwork.

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

## Study 4: Testing for criterion validity, measurement invariance and scale applicability across working cultures

In the fourth study, we investigated the criterion validity of the WNBC scale by the evaluating of associations with established constructs. At the same time, we tested the applicability of the WNBC scale in different countries and work cultures.

Leslie et al. (2019) indicated that variation in the relative importance of work and nonwork results from cultural values, such as in example, masculine societies, where individuals “live to work” (e.g., Japan) or “work to live” (e.g., Finland; Hofstede, 2011). Such cultural differences are relevant for WNB (Lewis and Beauregard, 2018). Given that WNBC is an individual-level proactive behavior, it may gain increased acceptance in individualistic cultures (Yang, 2005). In collectivistic cultures crafting for collective goods (e.g., family

resources) can be accepted. By contrast, such individual strategies may be accepted if they are oriented toward positive outcomes for the community. Regarding work-related institutions and work-nonwork interference, Finland and Japan differ substantially in their cultural and institutional frameworks (Ollier-Malaterre et al., 2013) and regarding the resolution of work-to-nonwork conflicts, as shown by meta-analytical evidence where reports of work–family conflict were higher in collectivistic versus individualistic cultures (Allen et al., 2015). For an overview of the role of cultural values in crafting, see Kujanpää et al. (2021).

## Criterion validity and test–retest reliability

To test for criterion validity, we correlated the WNBC scale with external variables (Campbell, 1960) and used established constructs to test whether such crafting yields WNB-related

outcomes. The validation criteria for the work dimension of the WNBC scale are work engagement and job performance. Subjective vitality and family role performance were evaluated as validation criteria for the nonwork dimension of the WNBC scale. We selected this set of variables to evaluate concepts related to crafting efforts for work-life balance that are directly linked to employee wellbeing and performance in both domains of life. Work engagement and job performance are frequently used to assess employee's conditions in the work domain, also in combination with work-life balance (Johari et al., 2018; Wood et al., 2020). To mirror these concepts in the nonwork life domain, we assessed family role performance, since this concept relates well to both, performance in a typical nonwork domain is associated with WLB due to, for example caring duties but respective role expectations are also relevant in the WLB definition we are working with. Subjective vitality can be an important consequence of WLB promotion, such as sustainable careers (Kossek et al., 2014) and is transferred into both life domains as a relevant and dynamic reflection of well-being (Ryan and Frederick, 1997).

Moreover, we tested whether the WNBC scale is invariant and if these validation criteria hold across different countries and work cultures. Since the scale is developed first in German we use the largest German speaking sample as a reference. Finally, the test-retest reliability and the stability of associations with respective criteria over time were tested.

*Hypothesis 6:* The Work-Nonwork Balance Crafting Scale is invariant across samples from Austria, Germany, Switzerland, and Japan or Finland.

*Hypothesis 7a:* Work-nonwork Balance Crafting-work is positively associated with work engagement and job performance in Japan and Finland.

*Hypothesis 7b:* Work-nonwork Balance Crafting-nonwork is positively associated with family role performance and subjective vitality in Japan and Finland.

To test the assumption that WNBC has substantial and time-stable effects on respective outcomes, we hypothesized the following:

*Hypothesis 8:* The Work-Nonwork Balance Crafting Scale displays test-retest reliability after 3 months in Japan and Finland.

*Hypothesis 9a:* Work-Nonwork Balance Crafting-work at T1 is positively associated with work engagement and job performance at T1 and T2 in Japan and Finland.

*Hypothesis 9b:* Work-Nonwork Balance Crafting-nonwork at T1 is positively associated with family role performance and subjective vitality at T1 and T2 in Japan and Finland.

## Methods

### Procedure and participants

Items in the WNBC scale were translated by professional translation agencies and back-translated by bilingual individuals of the research team for the Finnish and Japanese surveys. The back translations were then compared with the German source versions for consistency. All other scales were translated from the published English versions. We involved the largest German-speaking sample (as described in study 3) for invariance testing.

Data were collected in longitudinal studies in Finland (starting September 2018) and Japan (starting December 2018), each with two measurement waves (3 months apart). Again, each scale was administered at each survey wave. Participation was voluntary and anonymous, and the confidentiality of participants' data was guaranteed. The participants were at least 18 years old and worked a minimum of 24h per week. The Finnish sample included data from 357 individuals in the first wave and 221 individuals in the second wave after a three-month interval; most of whom were female (85.2%). Participants were workers mostly recruited through HR staff mainly from the public sectors. A total of 38 participants from an earlier study agreed to participate, and 70 were recruited through social media. The average age of the participants was 49.7 years ( $SD=10.2$ ). On average, they worked 38.9 ( $SD=4.4$ ) hours per week and had worked for 14.7 years ( $SD=11.9$ ) for their current employers. Furthermore, 26.9% had completed a bachelor's degree, and 19.9% had a master's degree. The largest employment groups worked in social and healthcare (37.1%) and public administration (19.6%).

The Japanese sample contained data from 204 individuals in the first wave and 128 individuals in the second wave, among which 63.2% were male. Participants were recruited through a consultancy agency working with various Japanese companies. The mean age was 31.9 years ( $SD=6.4$ ). The participants worked for 48.4h ( $SD=9.6$ ) per week and had worked for 4.9 years ( $SD=4.6$ ) for their current employers. In addition, 78% held a bachelor's degree, and 59.3% worked in the IT sector.

### Measures

WNBC was measured according to its subscales, as described above. The scale parameters are reported in Table 6.

Job performance was measured with the following World Health Organization work performance questionnaire item (Kessler et al., 2003): "How would you rate your work performance within the past month on a scale from 1 to 10, where 1 is the worst job performance anyone could have at your job, and 10 is the performance of a top worker?" The time reference was adapted to 1 month.

Work engagement referring to a positive work-related state of fulfillment was measured with the nine-item version of the Utrecht work engagement scale (Schaufeli et al., 2006), containing the dimensions of vigor (e.g., "At my work, I feel bursting with energy") and dedication (e.g., "I find the work that I do full of meaning and purpose"), adapted to a retrospection of 1 month.

TABLE 5 Fit statistics for invariance tests across countries.

	$\chi^2$	<i>df</i>	<i>p</i>	CFI	IFI	RMSEA (90% CI)	SRMR	$\Delta$ CFI	$\Delta$ IFI	$\Delta$ RMSEA	$\Delta$ SRMR
<i>Austria, Germany, Switzerland, vs. Japan</i>											
Configural invariance	160.148	91	<0.001	0.990	0.991	0.018 [0.013; 0.023]	0.020	–	–	–	–
Metric invariance	193.676	105	<0.001	0.988	0.988	0.019 [0.015; 0.023]	0.021	0.002	0.003	0.001	0.001
Scalar invariance	634.795	121	<0.001	0.929	0.930	0.043 [0.040; 0.046]	0.020	0.059	0.058	0.024	0.001
<i>Austria, Germany, Switzerland, vs. Finland</i>											
Configural invariance	207.395	105	<0.001	0.986	0.987	0.020 [0.016; 0.024]	0.022	–	–	–	–
Metric invariance	264.343	119	<0.001	0.981	0.981	0.023 [0.019; 0.026]	0.023	0.005	0.006	0.003	0.001
Scalar invariance	722.400	135	<0.001	0.922	0.923	0.043 [0.040; 0.046]	0.024	0.059	0.058	0.20	0.001

The response scale comprised 1 = never, 2 = once per month, 3 = a few times per month, 4 = once a week, 5 = a few times a week and 6 = daily.

Family role performance assesses the performance within the family domain and depended on the balance of work-nonwork roles; it was assessed by the family role performance scale (Chen et al., 2014). This scale consists of eight items referring to the fulfilment of several role expectations in family life. The Likert-type scale for this item ranged from 1 = did not fulfil expectations at all to 5 = fulfilled expectations completely. Furthermore, the time reference was changed to 1 month: “To what extent do you think you fulfilled what was expected of you in relation to the following aspects of your current family life over the past month?”

Subjective vitality is “the experience of having positive energy available to or within the regulatory control of one’s self” (Ryan and Frederick, 1997), in contrast to being driven or compelled. A four-item instrument measured this concept (Bostic et al., 2000), and a five-point Likert-type scale with response options ranging from 1 (not at all) to 5 (very true) was used. The retrospective reference frame was adapted to 1 month.

## Results

### Preparatory analysis

The Harman single-factor test was executed, indicating that the attained factor in the Japanese sample accounted for 22.8% of the variance, and the single factor in the Finnish sample accounted for 25.8% of the variance. This result showed that no common method bias was present in our data. Data were analysed using SPSS 28 and SPSS AMOS 28.

### Measurement invariance

For testing hypotheses 6, multigroup CFAs test four increasingly strict levels of invariance, as Vandenberg and Lance (2000) outlined. The first model is an unconstrained model (configural invariance). The second model tests the invariance of factor loadings (metric invariance), residuals (residual variance), and intercepts (scalar invariance). Results for both series of invariance testing between the largest sample from German-speaking countries and samples from Japan or Finland indicated

acceptable to good fit indices (Table 5). We followed Cheung and Rensvold’s (2002) approach using fit indices to verify the measurement invariance and used a stepwise approach as suggested by Putnick and Bornstein (2016). Differences in fit indices lower than 0.01 were used as the cut-off criteria. First, invariance testing across the German-speaking and Japanese samples indicated configural, and metric invariance due to differences fit indices ( $\Delta < 0.01$ ). Scalar invariance was not indicated, partially confirming hypothesis 6 across the German-speaking and Japanese samples. Second, invariance testing across the German-speaking sample and the sample from Finland showed likewise configural and metric invariance. Also, scalar invariance was not indicated here, partially confirming hypothesis 6 across the German-speaking sample and the sample from Finland. Summing up, we found results showing configural, metric measurement invariance but not scalar measurement invariance in both series of invariance testing for the WNBC scale across respective countries and work cultures.

### Criterion validity

The results of the criterion validity test for the dimensions of the WNBC scale are reported in Table 6. The WNBC-work dimension was positively correlated with job performance in the Finnish sample ( $r = 0.24$ ,  $p < 0.001$ ) and the Japanese sample ( $r = 0.24$ ,  $p < 0.01$ ). They were also significantly correlated with work engagement in the Finnish sample ( $r = 0.35$ ,  $p < 0.001$ ) and the Japanese sample ( $r = 0.49$ ,  $p < 0.001$ ). These significant correlations of WNBC-work with job performance and work engagement supported hypothesis 7a.

The WNBC-nonwork subscale was positively correlated with family role performance in the Finnish sample ( $r = 0.31$ ,  $p < 0.001$ ) and the Japanese sample ( $r = 0.28$ ,  $p < 0.001$ ). It was additionally positively correlated with subjective vitality in the Finnish sample ( $r = 0.32$ ,  $p < 0.001$ ) and the Japanese sample ( $r = 0.15$ ,  $p < 0.05$ ). These significant correlations of WNBC-nonwork with family role performance and subjective vitality confirmed hypothesis 7b.

### Test–retest reliability

Hypothesis 8 was confirmed as the WNBC-nonwork dimension at T1 was positively correlated ( $p < 0.001$ ) at T2 within

**TABLE 6** Partial correlations and McDonald's  $\omega$  between brackets on the diagonal (T1/T2) among the WNBC dimensions, job performance, work engagement, family performance and subjective vitality (controlled for gender, age, education level and vocational position) in the sample from Finland and Japan.

	<i>MT1</i>	<i>SD T1</i>	<i>MT2</i>	<i>SD T2</i>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
1. WNBC-work/Finland	4.07	0.57	4.12	0.50	(0.59/0.58)					
WNBC-work/Japan	3.86	0.57	4.00	0.49	(0.67/0.67)					
2. WNBC-nonwork/Finland	3.77	0.65	3.77	0.65	0.40***	(0.69/0.65)				
WNBC-nonwork/Japan	3.76	0.57	3.77	0.57	0.32***	(0.68/0.75)				
3. Job performance/Finland	7.99	1.30	8.12	1.16	0.24***	0.24***	(single item)			
Job performance/Japan	5.89	2.06	6.02	2.16	0.24**	0.17*				
4. Work engagement/Finland	4.59	1.22	4.54	1.21	0.35***	0.25***	0.53***	(0.95/0.94)		
Work engagement/Japan	4.07	1.30	4.14	1.36	0.49***	0.03	0.29***	(0.95/0.95)		
5. Family role performance/Finland	3.80	0.75	3.84	0.69	0.12*	0.31***	0.31***	0.26***	(0.85/0.84)	
Family role performance/Japan	3.12	0.91	3.09	1.01	−0.02	0.28***	0.25**	0.06	(0.88/0.91)	
6. Subjective vitality/Finland	3.56	0.90	3.46	0.85	0.21***	0.32***	0.41***	0.06***	0.42***	(0.93/0.94)
Subjective vitality/Japan	3.33	1.07	3.43	1.10	0.23**	0.15*	0.36***	0.69***	0.14	(0.95/0.96)
<i>Study variables at T2 Finland</i>										
7. WNBC-work T1/Finland							0.16**	0.25***	0.13*	0.23***
8. WNBC-nonwork T1/Finland							0.22***	0.21***	0.30***	0.28***
<i>Study variables at T2 Japan</i>										
9. WNBC-work T1/Japan							0.12	0.38***	0.04	0.26**
10. WNBC-nonwork T1/Japan							0.25**	0.14	0.35***	0.28**

Finish sample at T1:  $N = 357$  and T2:  $N = 221$ ; Japanese sample at T1:  $N = 204$  and T2:  $N = 128$ , as in study 4.

M, mean; SD, standard deviation

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .



the same sample (Japan,  $r=0.59$  or Finland,  $r=0.67$ ). This result was also consistent for the WNBC-*work* dimension, which was positively correlated ( $p<0.001$ ) from T1 to T2 within the Japanese sample ( $r=0.63$ ) and within the Finnish sample ( $r=0.62$ ). All partial correlations were controlled for gender, age, education level, and vocational position.

To test the stability and long-term effect of WNBC, we correlated both scale dimensions for work and nonwork with outcome variables with an interval of three-months. Partial correlations were controlled for gender, age, education level, and vocational position. In Finland, WNBC-*work* at T1 was significantly correlated with job performance at T2 ( $r=0.16$ ,  $p<0.01$ ) and work engagement at T2 ( $r=0.25$ ,  $p<0.001$ ), confirming hypothesis 9a. WNBC-*nonwork* at T1 was significantly correlated with family role performance at T2 ( $r=0.30$ ,  $p<0.001$ ) and subjective vitality at T2 ( $r=0.28$ ,  $p<0.001$ ), confirming hypothesis 9b.

In Japan, WNBC-*work* at T1 was not significantly correlated with job performance at T2 ( $r=0.12$ , *ns*), but it was significantly correlated with work engagement at T2 ( $r=0.38$ ,  $p<0.001$ ), partially confirming hypothesis 9a. WNBC-*nonwork* at T1 was positively correlated with family role performance at T2 ( $r=0.35$ ,  $p<0.001$ ) and with subjective vitality at T2 ( $r=0.28$ ,  $p<0.01$ ), confirming hypothesis 9b.

## Study 5: Testing WNBC on an essential outcome

In the fifth study, we elaborated on WNB as an essential outcome of the WNBC scale. To measure WNB, we used the recently published WNB scale (Wayne et al., 2021).

Wayne et al. (2021) provided a four-dimensional scale involving a distinct (1) *global balance dimension* referring to “employees’ appraisals of how they combine work with nonwork roles,” where the attitude object is the “combination of work and nonwork roles.”

Further three dimensions are (2) *affective balance*, which is defined as “the perception that one experiences sufficiently pleasant emotions in work and nonwork roles commensurate with the value attached to those roles,” (3) *effectiveness balance*, which is “the perception that one’s effectiveness in work and nonwork roles is commensurate with the value attached to the roles,” (4) and *involvement balance* is “the perception that one’s involvement in work and nonwork roles is commensurate with the value attached to the roles.”

To assess the associations of the WNBC scale with the dimensions of the WNB scale, we formulated the following hypotheses:

*Hypothesis 10:* Work-nonwork Balance Crafting is positively associated with the global level of work-nonwork balance.

Specifically, work-nonwork balance crafting is positively associated with the (a) effectiveness balance, (b) affective

balance, and (c) involvement balance dimensions of work-nonwork balance.

## Methods

### Procedure and participants

The data were collected *via* an online panel data service in a cross-sectional study in Austria, Germany, and Switzerland in November 2021. Participation was voluntary and anonymous, and the confidentiality of participants’ data was guaranteed. The participants were at least 18 years old and worked a minimum of 20 h per week. A percentage of 46.1 reported working 46–49 h per week. The sample included  $N=924$  individuals; 43.9% were female and had an average age of 48.87 years ( $SD=10.1$ ). 34.9% had completed a university/applied university degree, and 43.9% had vocational education. Moreover, 4.3% completed primary education, and 16.9% completed high school as the highest educational degree. Data analysis was conducted using the lavaan package of R Project for Statistical Computing 09.02 build 382.

### Measures

WNBC was measured in German according to its subscales, which are described above. The reliability was McDonald’s  $\omega=0.71$  for the WNBC-*nonwork* dimension and  $\omega=0.74$  for the WNBC-*work* dimension. Measurement residuals were correlated within and across latent constructs.

To measure WNB, we used Wayne et al.’s scale (2021). This scale was translated from English to German (the survey language) and was back-translated into English. This scale includes four subdimensions, as outlined and defined above. A sample item for *global balance* reads: “Overall, my work and nonwork roles fit together” ( $\omega=0.91$ ). Further scale dimensions and sample items are for *involvement balance* “I am able to be adequately involved in the work and nonwork roles that matter most to me” ( $\omega=0.88$ ); for the *effectiveness balance*: “I am able to effectively handle important work and nonwork responsibilities” ( $\omega=0.88$ ), and for the *affective balance*: “I experience a lot of positive emotions in my most highly valued work and nonwork roles” ( $\omega=0.92$ ). Items were rated on a five-point Likert scale 1 = *strongly disagree* to 5 = *strongly agree*.

## Results

Before testing the full structural equation model (SEM), we provide a CFA of the WNB scale (Wayne et al., 2021). To our knowledge, this study is the first to apply this WNB scale in the German language ( $\chi^2=557.360$ ,  $df=164$ , CFI=0.972, TLI=0.968, SRMR=0.030, and RMSEA=0.051). A SEM for the association of the new WNBC scale dimensions and a WNB applying the scale for measuring such balance by Wayne et al. (2021) indicated the relevance of crafting for WNB (Table 7). For each of the WNB subdimensions, the WNBC scale delivered significant results and accounted for substantial variance in the outcome: WNBC-*work*

TABLE 7 Structural equation model assessing WNBC on work-nonwork balance (Wayne et al., 2021) dimensions.

	$\beta$	SE $B$	$p$	$R^2$
<i>WNB global balance</i>				
WNBC-work	0.48	0.14	<0.001	0.22
WNBC-nonwork	0.31	0.11	0.006	
<i>WNB involvement</i>				
WNBC-work	0.37	0.11	<0.001	0.35
WNBC-nonwork	0.43	0.10	<0.001	
<i>WNB effectiveness</i>				
WNBC-work	0.56	0.11	<0.001	0.41
WNBC-nonwork	0.37	0.10	<0.001	
<i>WNB affective</i>				
WNBC-work	0.38	0.11	0.001	0.27
WNBC-nonwork	0.38	0.10	<0.001	
<i>Model parameters</i>				
$\chi^2 = 1621.431$ , $df = 566$ , CFI = 0.943, TLI = 0.937, SRMR = 0.050, RMSEA = 0.045				

CFI, comparative fit index; TLI, Tucker Lewis index; SRMR, standardized root mean squared residual; RMSEA, root mean square error of approximation.

was positively associated with WNB global balance ( $\beta = 0.48$ ,  $p < 0.001$ ), WNB involvement ( $\beta = 0.37$ ,  $p < 0.001$ ), WNB effectiveness ( $\beta = 0.56$ ,  $p < 0.001$ ) and WNB affective ( $\beta = 0.38$ ,  $p = 0.001$ ). Accordingly, the dimension of WNBC-nonwork was positively associated with the WNB global balance ( $\beta = 0.31$ ,  $p = 0.006$ ), with WNB involvement ( $\beta = 0.43$ ,  $p < 0.001$ ), WNB effectiveness ( $\beta = 0.37$ ,  $p < 0.001$ ) and WNB affective ( $\beta = 0.38$ ,  $p < 0.001$ ). The parameters for the model fit of the SEM indicated good fit ( $\chi^2 = 1621.431$ ,  $df = 566$ , CFI = 0.943, TLI = 0.937, RMSEA = 0.045, and SRMR = 0.050). Thus, hypotheses 10 and 10a–c were confirmed.

## Overall discussion of findings across studies

We conducted this series of studies to develop a new tool that measures crafting efforts employees exert to achieve a WNB that is in line with an individual's needs and standards. The WNBC scale captures a new concept and a new, cross-cutting domain of crafting, expanding the fruitful research streams of job crafting as well as crafting in the nonwork life domain, such as home crafting (Demerouti et al., 2019), life crafting (Schipper and Ziegler, 2019), and off-job crafting (De Bloom et al., 2020). Conceptually, our scale development was established on the crafting behaviors identified in a pioneering qualitative study conducted by Sturges (2012). Instead of studying crafting in the work and nonwork domains separately, the WNBC scale aims to grasp how employees can craft an idiosyncratic *balance* of work and nonwork life under consideration of their favored boundaries and combination of their work and nonwork roles. We expect that such crafting supports attaining a WNB and related outcomes, including employee wellbeing.

## Development of items and implementation of subdimensions

In study 1, we developed the scale's items by building on earlier conceptual development and expert feedback. The following exploratory factor analysis yielded a two-factorial structure with eight items in each scale dimension—one capturing crafting on aspects of the *work*-life domain, and the other on aspects of the *nonwork*-life domain. Both scale dimensions cover physical, relational, and cognitive/emotional WNBC. We consider this parsimonious two-factor structure of the WNBC scale to be an advantage compared with earlier approaches for measuring work-life balance crafting, containing eight clusters (Gravador and Teng-Calleja, 2018). In addition, our new scale contained the previously omitted cognitive dimension identified by Sturges' (2012) study and extended this dimension, including important emotional aspects.

## Test of competing factorial solutions of the work-nonwork balance crafting scale

Furthermore, in study 2, the confirmatory factor analysis revealed that a two-factor model reached good fit indices, outperforming the one-, three- and six-factor models. Additionally, a test for measurement invariance between the samples of studies 1 and 2 indicated that the WNBC scale was robust across several measurement occasions. Further, the WNBC scale dimensions correlated positively with proactive personality and personal initiative, displaying convergent validity to proactivity—a core crafting element (Bakker et al., 2012).

Interestingly, WNBC-work showed a higher correlation with proactive personality and personal initiative than WNBC-nonwork. Seemingly, proactivity and initiative-taking on a trait level were expressed considerably concerning the life domain of work. This concept may be explained by the fact that WNBC at work occurs in a highly formalized and hierarchical context with the informal, proactive private environment, thus requiring more proactivity to overcome the formal constraints of crafting this domain. This finding offers a new avenue for future research to extend the existing knowledge of personality traits for WNB crafting. This call was additionally fuelled by recent research on personality traits and crafting (Oprea et al., 2019) and should involve research on gender roles that may manifest in WNB decisions (Adamson et al., 2022).

## Incremental validity evidence

The results of study 3 indicated the incremental validity of the WNBC. While WNBC was predicting job/life satisfaction above the work-life indicator, the latter was not significantly predicting these outcomes in any conducted analyses. Crafting for WNB was significantly associated with increased satisfaction in both life

domains. This finding was compelling since many other contributing factors drive life/job satisfaction (Heller et al., 2004), explaining why added explained variance is not large *per se*. This is mainly due to the variety of stable factors (Ilies et al., 2019) relevant to life and job satisfaction.

We assumed that we could explain job and life satisfaction variance beyond the work-life indicator because we combined both crafting the WNB and boundaries in a meaningful way. This strategy was done because WNBC goes beyond merely allowing or preventing life domain transfers as suggested in the strategies of segmentation or integration (e.g., Bulger et al., 2007). The WNBC scale added crafting techniques for qualitatively shaping these transfers and respective role transitions. Because of increasingly blurred boundaries and working from home regulations before and during the COVID-19 pandemic, resulting in increased work-nonwork interference, it was important taking these boundaries more into account. Both developments resulted in less physical and time-bound boundaries (Allen et al., 2020; Vaziri et al., 2020), making WNBC an essential behavioral strategy.

## Applicability across several different working cultures

Study 4 involved data from German-speaking countries, Finland, and Japan, which tested for invariance, criterion validity, test-retest reliability, and intercultural applicability of the WNBC scale. Analyses for invariance across these countries indicated that the WNBC provides metric measurement invariance. The absence of scalar invariance can be subject to different contextual factors across cultures, specifically concerning invariance testing across Japan, Austria, Germany, and Switzerland. However, strict invariance is challenging to achieve in heterogeneous groups (Clench-Aas et al., 2011) and may therefore be difficult to reach in cross-cultural research. Such measurement variance may occur due to differences in (work) cultures (Zhou et al., 2019), as has also been shown in research on proactivity and WNB (Smale et al., 2019). For example, in comparing a Chinese sample with a British or Spanish sample, Nielsen et al. (2017) showed a lack of factor loading invariance in the job crafting questionnaire potentially caused by cultural differences. Nevertheless, crafting scales may provide meaningful results in various countries, but cultural comparisons should be conducted cautiously (Schachler et al., 2019). Cultural differences may also be related to work-life balance, as discussed below and may thus affect cross-cultural invariance testing.

Analysing data from the Japanese and Finnish samples showed correlations with external criteria of job performance (Kessler et al., 2003), work engagement (Schaufeli et al., 2006), family role performance (Chen et al., 2014), and subjective vitality (Ryan and Frederick, 1997) were positive at the cross-sectional level. Moreover, positive associations between WNBC and these concepts can be found in longitudinal data from Finland and Japan, indicating the relevance and stability of WNBC outcomes. Beyond this

generalizability of the scale to different cultural contexts, the WNBC scale can unravel differences related to work culture. The WNBC scale indicated measurement variance for scalar measurement invariance across work cultures, which can be interpreted in a way that this scale seems sensitive to cultural differences in WNBC. Thus, the WNBC scale offers a measure for capturing such differences, but for comparing such crafting across countries, respective cultural differences need to be considered (Zhou et al., 2019). This is indicated in systematic variation of findings across countries: Individuals exerting WNBC-nonwork reported increased family role performance and subjective vitality in Finland. A result supported by the theoretical underpinning of Leslie et al. (2019) and Hofstede (2011), referring to Finland as a highly feminist work culture. In Finland, cultural norms concerning work and nonwork roles may support crafting for a WNB focusing on the nonwork domain. This finding also supported the compensation hypothesis (Beigi et al., 2019), according to which undesired states in one domain were compensated for in another life domain, as shown, for example, for leisure crafting (Petrou and Bakker, 2016). Besides, WNBC-nonwork correlated with work engagement in the sample from Finland but not in Japan. WNBC in the nonwork life domain may restore resources in Finnish participants that they were able to transfer to engagement in the work domain. This concept is an effect that has been studied in the context of sustainable careers (Kelly et al., 2020) and to which the WNBC scale can add further knowledge in future research.

## Association with core outcome work-nonwork balance

Finally, in study 5, on another set of more than 900 employees, we inquired how WNBC efforts cross-sectionally contributed to the outcome of balancing work and nonwork. Both the work and nonwork dimensions of the WNBC scale were associated with the balance of both life domains on a global unidimensional and multidimensional formative construct (Wayne et al., 2021). Interestingly, employees' appraisal of how well they combine work with nonwork roles on the global construct was positive in individuals who crafted their WNB regarding the work domain. The WNB of our European sample may be more affected by the work domain since they assign more relative importance to this life domain (see Leslie et al., 2019 for work priority beliefs). Therefore, (a) crafting work in comparison to nonwork may be more important to arrive at a positive evaluation of the "combination of work and nonwork roles" and (b) crafting the work domain can lead to satisfaction with individual standards that focus more on work-related achievements (Kelliher et al., 2019). However, crafting the nonwork life domain also substantially contributed to a positive global evaluation of WNB. In detail, crafting both life domains led to favorable judgments of items such as "Overall, my work and nonwork roles are integrated" and "My work and nonwork roles are combined in ways that are harmonious."

This reasoning may also explain why WNBC-work contributed more to a positive evaluation of *effectiveness balance*. Crafting for WNB, focusing on work-related aspects, helped employees arrive at a highly proactive role balance. Performance and successfulness as key terms in these items may have spurred the link to crafting in the work domain because this domain is perceived as more performance-based (Kim, 2014). In addition, Wayne et al. (2021) suggested that work or family design factors (e.g., the significance of these life domains) can determine how performance in either life domain is judged. This factor may have contributed to the relative importance of work-related crafting aspects. However, crafting in both life domains was relevant for a positive appraisal of WNB effectiveness.

*Involvement balance* was strongly associated by WNBC-nonwork. Since salient work-related demands that call particularly for role involvement in the work domain for many employees may exist, WNBC-nonwork helped conclude a positive appraisal regarding the desired balance of role involvement in *both* life domains. This perspective on WNB would fit in with the “expandable-pie” perspective, stating that involvement in one role expands (i.e., enriches) resources for another role (Leslie et al., 2019; Rothbard et al., 2021). Further research is necessary to understand the role of WNBC in enrichments or even gain cycles, as has already been found for *job crafting* (Vogt et al., 2016). Nevertheless, crafting in both life domains was again relevant for balanced involvement in both life domains.

Our analysis indicated that crafting for WNB in both life domains was similarly associated with *affective balance*. Showing WNBC efforts led to a more positive affective balance and, therefore, more positive and fewer negative emotions in highly valued roles across life domains. This finding was important since Marks and MacDermid (1996) outlined that role balance involves affective and cognitive elements. The results indicated that the WNBC scale can capture proactive efforts that improve both the cognitive (involvement/effectiveness) and affective dimensions of balance.

The results of study 5 were in favor of the WNBC scale, as it captured crafting efforts for attaining a WNB. Here, we demonstrated that crafting for WNB, as measured with this new crafting scale, explains significant variance in employee WNB. A broad set of antecedents (e.g., work/family demands and resources) relevant for the combined study on crafting and WNB offers a variety of new research questions and outcomes (e.g., work-family interference) to be studied with the WNBC scale.

In summary, the validity and potential of the WNBC scale were displayed by extensive testing in several samples across different work cultures. Our scale is the first rigorously developed scale for measuring the construct of WNBC. As such, it has great potential to advance the scientific study of crafting the vital concept of WNB, which has elicited much attention and scholarship (Rothbard et al., 2021). The need for the study of WNBC is amplified by the increasing tendencies of blurred boundaries between life domains. This trend is exacerbated by COVID-19 measures and telework (Kniffin et al., 2020), making the balance of various life roles throughout the day an essential

topic for many. The WNBC scale takes blurred boundaries into account while orienting crafting towards either life domain, as reflected in the two-factor structure of this measure. We hoped that WNBC could help employees establish a sustainable, resourceful WNB.

## Practical implications

Given the current economic developments and work regulations imposed during the COVID-19 pandemic, employees' WNB is increasingly under pressure (Kniffin et al., 2020). Organizations can encourage WNBC to improve their employees' quality of life in both life domains. Our results indicated that WNB crafting is relevant for the sake of employee vitality, family role/job performance, job/life satisfaction, work engagement and self-reported WNB. This feature is important because crafting as measured with the WNBC scale illustrates behaviors that may support employee health and well-being. Crafting allows employees to purposefully balance their resources and demands of work and nonwork by proactively balancing both life domains.

For implementation in organizations, the training and education of supervisors and employees involved these crafting behaviors are relevant for employee WNB. Especially with increasing job demands, a decrease in WNB has been observed, which has been counterbalanced by supervisor support and job autonomy (Haar et al., 2019), both of which are relevant for crafting. Since WNBC can be performed at the individual level, this approach is also available to individuals without organizational support. Nevertheless, given that crafting can be trained (Gordon et al., 2018), organizations must foster opportunities for WNBC and train employees to craft their WNB. A web-based intervention (application) is currently being developed for such training purposes. Results derived from studies involving the WNBC scale will inform this application.

## Limitations and future research

Besides the strength of this study, several important limitations must be acknowledged.

First, the internal consistency of WNBC subscales is relatively low in several of our validation studies. However, we cover a fairly broad spectrum of crafting efforts oriented towards WNB (physical, cognitive/emotional, relational crafting) in a compact scale with relatively few items. This implies that both sub-dimensions of the WNBC scale (work/nonwork) represent three crafting behaviours. Thus, the modest reliability coefficients seem to reflect that items were chosen to represent this conceptual breadth within the WNBC construct rather than to maximize internal consistency, likewise prominently implemented elsewhere (Ryff and Keyes, 1995). Therefore, internal consistency can be expected to be low. In fact, we would argue that internal consistency is a questionable criterion for scale quality. Adding



highly similar items will lead to high internal consistency. But the additional items will add little information regarding the underlying construct (Boyle, 1991) while increasing participant burden. Our scale captures a broad spectrum of crafting efforts with a compact scale with relatively few items. To provide a more robust measure of internal consistency, we reported McDonalds  $\omega$  (Zinbarg et al., 2005). Given the relatively low reliability and that items map different aspects of WNBC, future research may investigate whether items of the WNBC are formative or reflective of the construct (Coltman et al., 2008).

Second, the applied cut-off values for several CFAs model-fit assessment referring to WNBC are above standard cut-off values (Byrne, 2001) but below the .95-threshold. In this regard, we refer to an ongoing debate on the so-called “golden rules” for cut-off criteria (Niemand and Mai, 2018), while future research may apply more strict factor analytical criteria. Nevertheless, we would like to recommend our scale in the presented factor structure for use in research and practice. We base this recommendation on the convincing results of our studies, particularly study 5, which shows a substantial association between our new scale captured crafting efforts for WNB and the actual WNB measured (Wayne et al., 2021).

Third, the median age differed between the Finnish and Japanese samples, which could have biased our results. Persons identifying as female were overrepresented in the Finnish sample, and persons identifying as male were overrepresented in the Japanese sample. This imbalance in gender distribution may have aggravated the differences between countries since Finland is known to have a highly feminist work culture. Therefore, age and gender were added as control variables in the analyses. These sample characteristics may have been one reason for the lack of measurement invariance across countries for the WNBC scale. We took a first step in comparing the WNBC scale across cultures, providing evidence for metric invariance [for a comparable outline in job crafting research, see Nielsen et al. (2017)].

Fourth, we studied data from five countries with diverse cultural backgrounds that may have influenced the results (Ollier-Malaterre and Foucreault, 2017). At this point, the systematic variations and differences between the studied countries were not further analyzed. Examine the cultural variation in WNBC in further detail is beyond the scope of this validation paper. Future studies may include the interplay of cultural norms with WNBC.

In general, current perspectives on crafting need to be extended by broadening the research focus to areas of life beyond work, as done in this paper.

## Conclusion

Approaching a balance of work and nonwork according to individual needs and standards has gained relevance under increasingly demanding work-nonwork conditions (Greenhaus

and Callalan, 2020). With the WNBC scale, we contributed a new and useful tool for crafting research. In doing so, we stimulate future research on two constructs that gained high practical and research interest: Work-nonwork balance and crafting.

Presented findings indicate that the WNBC scale is relevant for outcomes in both life domains, such as job-and life satisfaction, work engagement, subjective vitality, family role and job performance, work-life boundary management, and self-rated WNB. The applicability of this new scale and the importance of its findings in a variety of occupational settings and work cultures are displayed.

We outlined the many opportunities to link this scale with productive research streams such as research on personality, work culture, work/family interference, work-nonwork balance, and work arrangements due to COVID-19 regulations that call for new ways of balancing life domains. Thus, we hope this scale spawns new research and informs interventions for aiding individuals using this proactive crafting approach to establish their WNB.

## Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. The patients/participants provided their written informed consent to participate in this study.

## Author contributions

PK: conceptualization, methodology, formal analysis, investigation, data curation, and writing—original draft. RB: conceptualization, methodology, formal analysis, investigation, data curation, and writing—review and editing. JB: conceptualization, investigation, and writing—review and editing. AS, MK and ML: investigation and writing—review and editing. GB: conceptualization, methodology, investigation, writing—review and editing, and funding acquisition. All authors contributed to the article and approved the submitted version.

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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