



Do it yourself, but I can help you at any time: the dynamic effects of job autonomy and supervisor competence on performance

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Abstract

Complementing the literature on job autonomy, this study explored the joint effects of job autonomy needed and supplied on employees' work engagement and subsequent job performance. To test our hypotheses, this study methodologically employed a polynomial regression analysis with response surface analysis, using multi-wave and multi-source data from a sample of 417 employee-leader dyads in China. Our results indicate that work engagement is high when the fit between job autonomy needed and supplied is high, particularly when the autonomy needed and supplied are both high rather than low. Moreover, work engagement mediates the effects of fit between job autonomy needed and supplied on task performance and organizational citizenship behavior (OCB). Perceived leader competence strengthens the indirect effects of the fit between job autonomy needed and supplied on task performance and OCB via work engagement. This study not only extends our theoretical understanding of the effectiveness of job autonomy by considering the important role played by employees' personal needs for job autonomy and leader characteristics in the working environments but also offers useful practical implications for organizations to maximize the function of job autonomy and promote employee performance.

Keywords Job autonomy needed · Job autonomy supplied · Work engagement · Task performance · Organizational citizenship behavior

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Introduction

In today's fast-paced and dynamic business environments, employees are facing a rapidly changing labor market, including technology and equipment innovation, demands for new skills, and flexibility in work hours and workspaces (Kubicek & Korunka, 2017). Employees need to work autonomously, develop skills, master new tasks, and adjust their work roles to flexibly adapt to a dynamic environment (Stiglbauer & Kovacs, 2018). Job autonomy, which describes the extent that employees can decide how to perform their job tasks by themselves (Ng et al., 2008), may be a critical work characteristic as we move further into the twenty-first century (Parker & Knight, 2023; Sørлие et al., 2022). Job autonomy is a crucial job resource that shapes employees' job attitudes, behaviors, and performance (Jiang et al., 2020; Timming et al., 2023). Empirical evidence has indicated that job autonomy fosters employee motivation, job performance, and well-being, while decreasing job stress and withdrawal (e.g., Martela et al., 2021; Sørлие et al., 2022).

The importance of job autonomy in contemporary organizations has been established (Fürstenberg et al., 2021). However, empirical works on the effects of job autonomy on employees have shown mixed findings: some studies showed that job autonomy positively relates to employee performance outcomes (e.g., Park, 2018; Sørлие et al., 2022), while others showed non-linear or non-significant relationships between them (e.g., Chung-Yan, 2010; Joo et al., 2010; Kubicek et al., 2017). These inconsistent findings suggest that the relationships between job autonomy and employee outcomes may be complicated and some potential moderators (e.g., personal and contextual factors) are not yet considered when exploring the effectiveness of job autonomy. To date, our understanding of the function of job autonomy is limited in several ways, including the impacts of individual differences in job autonomy needed and leader characteristics on the effectiveness of job autonomy.

First, previous studies on job autonomy have focused predominantly on the influence of the amount of job autonomy supplied by the organization on employees' attitudes and behaviors (e.g., Jiang et al., 2020; Martela et al., 2021). However, employees' actual need for job resources such as autonomy can influence the effectiveness of job resources in the workplace (Vogel et al., 2020), and the exclusive consideration of job autonomy supplied while neglecting the role of job autonomy needed may generate an incomplete understanding of job autonomy. Second, prior studies (e.g., Park, 2018; Zhang et al., 2017) on the function of job autonomy have largely neglected the role of leader characteristics. Considering leader characteristics is important, not only because leaders control and decide employees' work tasks and career outcomes but also because they have more authority and resources and thus exert a great influence on their employees' behaviors and performance (Hai & Park, 2021; Kong et al., 2023). Especially in the Chinese cultural context with higher power distance, employees tend to accept unequally distributed power in the organization and are therefore more heavily impacted by their leaders compared with the employees in Western contexts (Hu



& Luo, 2020; Liu et al., 2011). Despite the importance of leader characteristics such as competence for influencing the processes of employees' task accomplishment and goal striving (Byun et al., 2017; Kong et al., 2023), it remains unclear whether leader characteristics strengthen or reduce the effect of job autonomy on employee outcomes.

Drawing on the person-job (P-J) fit theory (Cable & Edwards, 2004; Kristof-Brown et al., 2005), to achieve a more nuanced understanding of the effects of job autonomy, we propose that the interplay between job autonomy needed and supplied has substantial implications for employees' behaviors and performance. Employees are likely to respond to high levels of job autonomy supplied with better functioning such as higher work engagement when they also desire high job autonomy. This is because when employees experience high autonomy "fit"—where high levels of job autonomy supplied meet their similarly high desire for it, they can experience greater self-determination over job responsibilities and take actions based on personal goals (De Clercq et al., 2021), thus displaying enhanced work engagement. We then incorporate the job demands-resources (JD-R) theory (Bakker et al., 2023) to propose that work engagement resulting from the fit between job autonomy needed and supplied may allow employees to perform better at work and achieve better job performance, such as task performance and organizational citizenship behavior (OCB). Going beyond earlier research that has mainly investigated work engagement as a mediator in the relationship between job resources supplied and work outcomes (e.g., De Spiegelaere et al., 2014), our study explores whether work engagement acts as a mediating mechanism that links the fit between job autonomy needed and supplied to organizationally relevant performance outcomes, such as task performance and OCB.

Further, the effects of the fit between job autonomy needed and supplied on employees' behaviors and subsequent performance are likely influenced by contextual factors, such as leaders who possess greater authority and valuable resources within organizations. According to Bakker and Demerouti's (2017) assumption in the JD-R theory, leaders play a key role in influencing employees' perceived resources, thereby shaping their performance. Competent leaders, who can lead subordinates in a positive direction and provide them with effective guidance based on their skills and expertise (Caldwell & Hayes, 2007; Kong et al., 2023), may serve as a key contextual factor that augments the effects of the fit between job autonomy needed and supplied on task performance and OCB via work engagement. To uncover when the fit between job autonomy needed and supplied can improve employee functioning, this study investigates whether perceived leader competence plays a moderating role in facilitating the indirect effects of the fit between job autonomy needed and supplied on task performance and OCB via work engagement.

Our study makes several contributions to the extant literature. First, this study complements and extends the understanding of job autonomy by invoking the P-J fit theory to investigate the effects of the fit between job autonomy needed and supplied on employee work engagement and subsequent job performance in the Chinese context. Through a P-J fit perspective, our study offers a more nuanced view of the functions of job autonomy and provide a possible explanation to the mixed findings regarding the relationship between job autonomy and employee outcomes.



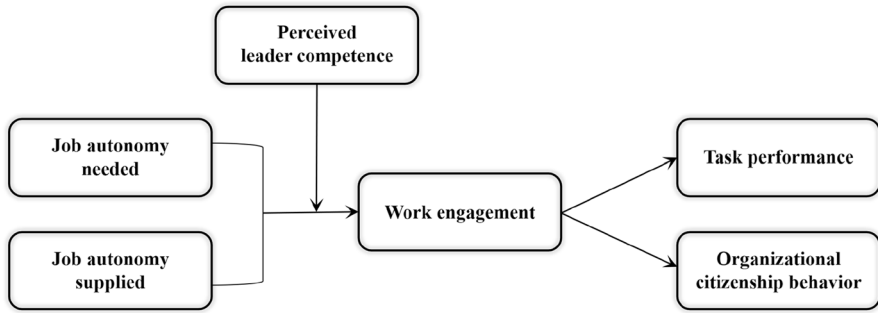


Fig. 1 Overall conceptual framework

Further, by investigating the moderating role of perceived leader competence, this study fosters a more comprehensive understanding of employees' responses to job autonomy fit and may expand the boundary conditions of the P-J fit theory. Our overall conceptual framework is presented in Fig. 1. To test these issues, this study methodologically performed polynomial regression analyses and response surface analyses (Edwards & Cable, 2009), using multi-wave and multi-source data from 417 full-time employees and their immediate leaders.

Literature review and hypotheses development

P-J fit, job autonomy needed, and job autonomy supplied

Job autonomy is a prominent variable in job characteristics and the JD-R theories, and it has been linked to a variety of organizationally desirable outcomes (Zhang et al., 2017). In practice, many Chinese companies have implemented strategic human resource practices and selected employees who can work autonomously and adapt to the dynamic environment (Cooke et al., 2021). In such a context, employees may prefer high levels of job autonomy, which allows them to independently schedule work tasks and experience increased self-determination, ultimately improving their performance. Contrastingly, influenced by Chinese culture that emphasizes collectivism and obedience, many employees do not prefer high job autonomy and depend more on established procedures and supervisions to perform tasks (Liu et al., 2011). These employees are likely to perform poorly in a high-autonomy environment because they rely on their supervisors' timely guidance and mentoring to accomplish job tasks (Stiglbauer & Kovacs, 2018). Despite the key role that job autonomy plays in contemporary organizations, there is still limited understanding about the effects of the interplay between the levels of job autonomy needed and supplied on employee outcomes. Uncovering the implications of the interplay between job autonomy needed and supplied is crucial because employees' needs and



the job's supplies interact with each other to impact outcomes at each stage of the employees' organizational life cycle (De Cooman et al., 2019).

The P–J fit theory (Cable & Edwards, 2004) offers an insightful framework to deeply understand the implications of the fit between job autonomy needed and supplied for employee outcomes. P–J fit occurs when the job characteristics provide what employees need and value (Kristof-Brown et al., 2005; Lambert et al., 2012). To examine P–J fit, employees' subjective perceptions of needs are compared with their perceptions of resources or rewards that are supplied by the job. This needs–supplies fit perspective highlights the role of both job characteristics needed and supplied in determining employees' judgment of fit and responses. The congruence between employees' needs and the job's supplies plays a key role in shaping employees' attitudes, behaviors, and performance (Cable & Edwards, 2004).

Drawing from the P–J fit perspective, this study seeks to uncover how employees' perceived high and low job autonomy fit (i.e., congruent conditions), excessive job autonomy, and deficient job autonomy (i.e., incongruent conditions) differentially associate with our focal variables, thus providing a more nuanced view of the functions of job autonomy in the workplace. Based on past work and theorizing on job characteristics needed and supplied (e.g., Cao & Hamori, 2020; Vogel et al., 2020), we define job autonomy needed as the amount of job autonomy that employees personally feel they need at work, while job autonomy supplied is defined as the amount of job autonomy that they perceive their jobs actually provide. Our use of the terms “needed” and “supplied” draws from the P–J fit theory, which focuses on the complementary fit between individuals' psychological needs and job supplies (Cable & Edwards, 2004). The conceptualization of job autonomy needed and supplied is also consistent with prior studies on needs and supplies of job resources such as meaningful work (e.g., Cao & Hamori, 2020; Vogel et al., 2020).

The level of congruence between job autonomy needed and supplied can be divided into three main categories: fit, deficiency, and excess. *Fit* occurs when the amount of job autonomy supplied matches the amount of job autonomy needed, as exemplified by two forms of the fit condition: the one condition is that job autonomy needed and supplied are both high, and the other condition is that job autonomy needed and supplied are both low. *Deficiency* may occur when the levels of job autonomy supplied are lower than employees' job autonomy levels needed, which represents a misfit between employees' needs and the organization's supplies. *Excess* occurs when the job autonomy supplied is greater than employees' job autonomy needed, which represents another type of misfit between the needs and supplies. According to the P–J fit theory, fit generally leads to desirable outcomes such as job satisfaction and commitment (Oh et al., 2014). However, employees can react differently to the two forms of misfit. Deficiency is closely related to employees' negative attitudes and behavioral responses (Lambert et al., 2012). Compared to deficiency, excess is likely to trigger favorable responses because excessive supplies can be used for various needs (Lambert et al., 2012).



Proximal consequences of job autonomy needed and supplied

Effects of the fit between job autonomy needed and supplied

Employees working in a high-autonomous context have greater freedom and latitude in determining what tasks to do, how to do these tasks, and when to do these tasks (Sørliie et al., 2022). Conversely, employees in a low autonomous context have lower latitude in making job-related decisions and lack flexibility for performing job-related tasks. Based on the P–J fit theory (Cable & Edwards, 2004), we focus on the joint effect of job autonomy needed and supplied on employees' work engagement—a fulfilling, positive work-related state of mind characterized by vigor, dedication, and absorption (Schaufeli et al., 2006). Work engagement is examined as the consequence of the interplay between job autonomy needed and supplied for two main reasons. First, job autonomy has been considered a crucial job resource that is closely associated with employee work engagement (Zhang et al., 2017). Employees are highly likely to respond with greater work engagement when the work environment matches their needs (Vogel et al., 2020). Second, employee work engagement is essential for organizational effectiveness and success since it often leads to increased job performance, enhanced creativity, and reduced turnover intention (Christian et al., 2011; Kong et al., 2023; Xu et al., 2022).

We propose that compared to a misfit between the job autonomy needed and supplied (e.g., deficient or excessive job autonomy), employees' work engagement will be higher when the level of job autonomy supplied fits with that needed. Based on the P–J fit theory (Cable & Edwards, 2004), employees tend to cognitively compare the amount of a resource that the job has supplied relative to their required amount. This perspective indicates that employees' attitudinal and behavioral reactions are optimized when the job resources supplied fit with their desires or needs (i.e., needs–supplies fit, Vogel et al., 2020). Therefore, in line with the P–J fit theory, employees may respond to the fit between job autonomy needed and supplied with higher work engagement compared to situations wherein the job provides deficient or excessive job autonomy. When employees perceive a needs–supplies fit, they are highly likely to experience need fulfillment and self-determination over job responsibilities (Dierdorff & Jensen, 2018; Vogel et al., 2020), therefore displaying increased work engagement. Contrastingly, when employees perceive that the autonomy supplied by the job is less than what they need, they may exhibit lower work engagement because deficient levels of job autonomy not only imply a lack of job resources but also can interfere with employees' need for an autonomous working environment. Excessive job autonomy also signals that the organization does not accurately understand employees' personal needs and may make employees doubt the organization's willingness or ability to meet their needs (Baer et al., 2021). Taken together, we expect that a fit between job autonomy needed and supplied is more beneficial for work engagement than is a misfit.

Hypothesis 1: Employees' work engagement will be higher when the job autonomy supplied fits with their job autonomy needed, compared to a misfit between the two (e.g., deficient or excessive job autonomy).



Under the condition that job autonomy supplied matches employees' job autonomy needed, we expect that employees' work engagement will be higher when job autonomy needed and supplied are both high compared to when job autonomy needed and supplied are both low. Although the fit between employees' autonomy needed and the organization's autonomy supplied usually results in favorable employee outcomes based on the P–J fit theory (Lambert et al., 2012), the fit between high job autonomy needed and supplied may be more effective in promoting work engagement, compared to the fit between low job autonomy needed and received. Specifically, when job autonomy is high, employees with high job autonomy needed are more likely to experience ownership of job tasks, take pride in performing tasks well, and actively integrate more job tasks into their role (De Spiegelaere et al., 2014), which lead them to highly engage in their work. Moreover, high job autonomy needed and supplied allow employees to fully apply their personal resources (e.g., knowledge, skills, and energy) toward task achievement and fulfill their needs for autonomy and competence (Bakker et al., 2016; Lambert et al., 2012), facilitating work engagement.

Contrastingly, low levels of job autonomy make it difficult for employees to have control over their job tasks and undermine employees' task motivation (Li et al., 2020). When job autonomy supplied is low, employees may display lower work engagement owing to reduced task motivation and few job resources, even though they desire low job autonomy (Bledow et al., 2022). Under the condition that the organization provides low job autonomy and employees want low autonomy, these employees are inclined to work passively or perform tasks following established routines, rather than actively and passionately engaging in the work (Ng et al., 2008). Therefore, low job autonomy needed and supplied can be demotivating, and employees are less likely to display higher vigor, experience enthusiasm, and become deeply engrossed in job tasks under this context. Taken together, these points suggest that the fit between job autonomy needed and supplied may have a stronger impact on work engagement when job autonomy needed and supplied are both high compared to when job autonomy needed and supplied are both low.

Hypothesis 2: Under the fit condition, employees' work engagement will be higher when job autonomy needed and supplied are both high compared to when they are both low.

Effects of the misfit between job autonomy needed and supplied

Based on the P–J fit theory (Cable & Edwards, 2004), we expect that excessive job autonomy is more beneficial for work engagement compared with deficient job autonomy. From the perspective of the needs–supplies fit (Lambert et al., 2012; Tepper et al., 2018), when supplies of job autonomy are lower than employees' wanted amount, these employees are not able to schedule work, select the method of performing job tasks, or make job-related decisions based on their own will, which may diminish their motivation to engage in their work and may even trigger negative attitudes toward the job (Dierdorff & Jensen, 2018; Zhang et al., 2017). Consequently, in a high-autonomy context, employees who desire high job autonomy are highly



likely to doubt the leader's willingness or ability to fulfill their needs and experience need frustration, leading them to reduce their work engagement. Deficient levels of job autonomy can be especially detrimental to employees' work engagement, not only because of diminished motivation and limited job resources (De Spiegelaere et al., 2014) but also because of the failure to satisfy employees' needs (Baer et al., 2021). Based on the P-J fit theory, deficient supplies of resources at work often lead to undesirable attitudinal and behavioral responses, such as decreased satisfaction and reduced OCB (Lambert et al., 2012; Vogel et al., 2020).

Contrastingly, when supplies of job autonomy exceed employees' needed amount, employees may perceive that the leader is providing them with substantial discretion and responsibility (Ng et al., 2008). Although job autonomy supplied mismatches employees' job autonomy needed, excessive levels of job autonomy (e.g., a high degree of freedom in scheduling, work processes, and decision-making at work) can actually help to improve the intrinsic rewards of job tasks and motivate employees to be engaged in their work (Joo et al., 2010). As a form of job resource, excessive job autonomy allows employees to flexibly cope with changing job demands and alleviates the negative influence of various job stressors (De Spiegelaere et al., 2014). This may render it possible for employees to perform job tasks with increased vigor, dedication, and absorption. Additionally, more job resources available to employees offer them more opportunities to self-determine their tasks and take charge and control over their jobs (Ng et al., 2008). Thus, excessive job autonomy is expected to be associated with higher work engagement compared to deficient job autonomy.

Hypothesis 3: Under the misfit condition, employees' work engagement will be higher when job autonomy supplied is higher than job autonomy needed rather than when job autonomy needed is higher than job autonomy supplied.

Distal consequences of job autonomy needed and supplied

To clarify how the fit between job autonomy needed and supplied contribute to organizational effectiveness, it is necessary to confirm the role that work engagement plays in linking the fit between job autonomy needed and supplied to employee performance, such as task performance and OCB. According to the JD-R theory (Bakker et al., 2023), job resources such as job autonomy are the main drivers of work engagement, which results in desirable employee outcomes. Building on the JD-R theory, we further propose that the fit between job autonomy needed and supplied has an indirect effect on employees' task performance and OCB through work engagement. We focus mainly on task performance and OCB, not only because they are the two most essential employee outputs in contemporary organizations (Baer et al., 2021; Richardson et al., 2021) but also because they are appropriate to be investigated as performance outcomes within the P-J fit and the JD-R theories (Bakker et al., 2023).

Task performance refers to employees' activities that are involved in their formal tasks and responsibilities, which are essential for individual and organizational



effectiveness and goal attainment (Farth et al., 1991; Richardson et al., 2021). Work engagement results from the fit between job autonomy needed and supplied are expected to promote their task performance. When job autonomy supplied matches employees' job autonomy needed, they are likely to experience enhanced self-determination and invest more resources into their work, leading to higher work engagement (De Spiegelaere et al., 2014). According to the JD-R theory (Bakker et al., 2023), the experience of work engagement is a key part of the motivational process, which can result in improved performance. As engaged employees tend to be energetic and enthusiastic about their job tasks and tend to be dedicated to their responsibilities (Christian et al., 2011; Kong et al., 2023), they are highly likely to perform tasks well and achieve better task performance. Employee work engagement is positively associated with task performance (e.g., Breevaart et al., 2016; Vogel et al., 2020). Based on the above arguments and theoretical support, we propose that the fit between job autonomy needed and supplied may motivate employees to highly engage in their work, consequently leading to better task performance.

Hypothesis 4: The fit between job autonomy needed and supplied will have a positive indirect effect on task performance via work engagement.

Employees who experience higher work engagement generated by the fit between job autonomy needed and supplied may not only achieve better task performance, but may also be willing to display more OCB to benefit broader organizational goals. OCB is defined as employees' discretionary behaviors that are not explicitly or directly recognized by the formal reward system, but contribute to the effectiveness of the organization's functioning (Lee & Allen, 2002; Park et al., 2021). As indicated by Christian et al. (2011), work engagement is an important driver of employees' willingness to go the extra mile to help the people within the organization and facilitate the achievement of organizational goals. Based on the theory about the motivational effect of work engagement (Bakker & Demerouti, 2017; Bakker et al., 2023), when employees are highly engaged in their work because of the needs-supplies fit, they may immerse themselves fully into their job roles and be more willing to go beyond the formal boundaries of the job, leading them to exhibit more OCB. The literature on work engagement (Bakker et al., 2014) also suggests that engaged employees are more willing to help others in the workplace because they often experience positive emotions and have more resources to perform their work efficiently. Prior studies have indeed demonstrated that work engagement is positively related to OCB (e.g., Buil et al., 2019; Christian et al., 2011). Taken together, we propose that the fit between job autonomy needed and supplied may trigger higher work engagement, which promotes employees' OCB.

Hypothesis 5: The fit between job autonomy needed and supplied will have a positive indirect effect on OCB via work engagement.



The moderated mediation effects of perceived leader competence

Although the needs–supplies fit influences important employee outcomes such as work engagement (Cao & Hamori, 2020; Vogel et al., 2020), the role played by leaders in influencing the linkage between employees' needs–supplies fit and their work outcomes has been largely ignored. Higher levels of job autonomy imply discretion and control over one's work, while lower levels of job autonomy mean close supervisory control (Ng et al., 2008). Consequently, leader characteristics are likely to influence how employees perform their work and shape the function of job autonomy. The JD-R theory (Bakker & Demerouti, 2017) has also indicated that leaders may influence the effectiveness of the work design and job resources, and further shape their employees' job performance. Perceived leader competence can be an important contextual factor that moderates the effects of the fit between job autonomy needed and supplied on work engagement and subsequent performance; this is because the aforementioned fit may be insufficient for employees to be fully engaged in their work when they cannot accomplish difficult tasks by themselves, and external support from competent leaders will be necessary for employees to remain engaged and finish tasks successfully (Breevaart & Bakker, 2018).

Perceived leader competence refers to employees' perceptions of the leaders' skills and capacity in performing the work (Caldwell & Hayes, 2007). Leaders who are perceived to be competent are more likely to use their knowledge, expertise, and domain-specific skills to lead their subordinates in a positive direction and thus demonstrate higher leadership effectiveness (Connelly et al., 2000). From employees' perspective, the more competent their leaders are, the more likely it is that they can provide them with valuable resources such as work-related assistance, feedback, and guidance (Byun et al., 2017). We expect that perceived leader competence will augment the indirect effects of the fit between job autonomy needed and supplied on task performance and OCB via work engagement for two main reasons.

First, although the fit between high job autonomy needed and supplied increases employees' work engagement, they are likely to face challenges and difficulties that they cannot solve on their own at work (Trevelyan, 2001), which may prevent them from being engaged and further reduce task performance and OCB. On the basis of the JD-R theory (Bakker & Demerouti, 2017), leaders can create job resources such as assistance, guidance, and development opportunities for employees, which may motivate them to engage in their work and achieve improved performance. If leaders are perceived to be competent, they can directly point out problems, help subordinates with high autonomy to identify potential solutions, and provide subordinates with effective guidance and feedback to cope with challenges and difficulties (Byun et al., 2017; Kong et al., 2023). As such, perceived leader competence may enhance the strength of the mediated relationship between job autonomy fit and employee performance via work engagement by offering high quality resources that are necessary for subordinates who lack direction, to engage in their work tasks.

Second, employees are likely to question whether they are “doing the right thing” at work, make mistakes, and increase production loss under a high degree of autonomy (Langfred, 2004; Trevelyan, 2001), which may interfere with employees' work



engagement and subsequently damage task performance and OCB. The presence of perceived leader competence can make up for the deficiency of high job autonomy by enhancing employees' psychological safety and relieving their anxiety about task achievement. Competent leaders are capable of giving the right direction, correcting subordinates' mistakes, and helping subordinates perform tasks well based on their knowledge and expertise (Byun et al., 2017; Sturm et al., 2017). When leaders are perceived to be competent, subordinates may experience psychological safety and lower anxiety under such leaders, and subordinates can expect that timely guidance and feedback will be provided if they are needed (Mao et al., 2019), rendering them more engaged in their work and ultimately facilitating task performance and OCB. Consequently, the conditional effects of the fit between job autonomy needed and supplied on task performance and OCB will be enhanced by perceived leader competence. Based on the aforementioned reasoning and theoretical support, we propose the following hypotheses:

Hypothesis 6: Perceived leader competence will moderate the indirect effect of the fit between job autonomy needed and supplied on task performance via work engagement, such that the indirect effect is stronger when leader competence is perceived to be high.

Hypothesis 7: Perceived leader competence will moderate the indirect effect of the fit between job autonomy needed and supplied on OCB via work engagement, such that the indirect effect is stronger when leader competence is perceived to be high.

Method

Participants and procedure

Participants were full-time working adults from various industries (e.g., service, marketing, information technology, and education) in China. Considering the increasingly dynamic and competitive business environments in China, Chinese enterprises are facing more uncertainty and challenges in the emerging economy; consequently it is crucial for them to create competitive advantages for survival and success. Job design is a critical element in today's human resource management because well-designed jobs promote employees' motivation, productivity, and performance, and can help enterprises to compete in the volatile markets (Oldham & Fried, 2016). Job autonomy is a core characteristic in job design; however, we still have limited knowledge on the mediating mechanisms and boundary conditions for the effectiveness of job autonomy in the Chinese context. The Chinese culture emphasizes collectivism and high power distance (Hu & Luo, 2020; Liu et al., 2011), which may highlight the important role of personal and leader factors (e.g., employees' job autonomy needed and perceived leader competence) in job design. Thus, the Chinese cultural context allows us to



examine the complex relationships between job autonomy needed and supplied, perceived leader competence, and employee performance.

To recruit participants, we randomly contacted 490 working adults through personal contacts.¹ Of them, 476 working adults agreed to participate. We conducted the data collection in three stages. In the first-stage survey (Time 1), participants completed the measures of job autonomy needed, job autonomy supplied, and perceived leader competence; and they provided demographic information such as age, sex, organizational tenure, and education. One week after Time 1, participants finished the measure of work engagement in the second-stage survey (Time 2). During the third-stage survey (Time 3), which was conducted one week after Time 2, the direct supervisors of participants who completed both Time 1 and Time 2 surveys were invited to rate the task performance and OCB of the employees. The multi-wave and multi-source data collection process was chosen to reduce common method bias and avoid spurious causality (Podsakoff et al., 2023).

Data were collected through online surveys and online informed consent forms were sent to participants. Prior to conducting the surveys, we carefully explained the purpose and schedule of the research to participants and highlighted the importance of providing honest responses. Four-hundred seventy-six employees volunteered to participate and completed the survey at Time 1. At Time 2, 447 of them finished the second-stage survey. At Time 3, participants who finished both the Time 1 and Time 2 surveys were instructed to forward the online messages to their direct supervisors and invited their supervisors to respond to the third-stage survey. We sent a special notice to each participant to encourage them to assist in collecting supervisor data and commit to this research project for the long term. Participants were prompted to provide the last four digits of their own phone numbers in each survey and supervisors were required to insert the last four digits of their corresponding subordinates' phone numbers in the final survey. These numbers were used as unique identification codes to match employee-supervisor data across different time points.

After matching valid responses, the final sample consisted of 417 employee-supervisor dyads. Of these employees, 256 were women (61.4%) and 161 were men (38.6%). The mean age of participants was 34.93 years ($SD = 11.00$), and the mean tenure at the current organization was 5.55 years ($SD = 5.43$). Regarding educational level, 18.0% had a junior school degree, 27.1% had a high-school degree, 22.5% had a two-year college degree, 24.5% held a bachelor's degree, and 7.9% had a graduate degree. Regarding hierarchical levels, 82.3% were rank-and-file employees and others were associates (17.7%). Participants were from different industries, including service (64.0%), information technology (20.9%), and manufacturing (15.1%). The present data also included responses from 417 leaders. Of them, 232 (55.6%) were women and 185 (44.4%) were men. The average age of the supervisors was

¹ Working adults were selected because they are appropriate for the research purpose of investigating how and when job autonomy needed and supplied influence employees' job performance in the workplace. The target sample comprised a demographically diverse pool of participants who had attended the researchers' previous research projects. We kept in touch with the participants via personal social network and measured multiple demographics, including employment status, to ensure the appropriateness of their inclusion in this study.



38.07 years ($SD=9.75$), and the average organizational tenure was 12.69 years ($SD=9.48$). Regarding educational level, 13.7% had a junior school degree, 26.6% had a high-school degree, 20.4% had a two-year college degree, 34.3% had a bachelor's degree, and 5.0% had a graduate degree.

Measures

Unless otherwise indicated, all items were assessed using a 7-point Likert scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Job autonomy needed and supplied were measured using four items adapted from Ng et al. (2008) at Time 1. This measure has been demonstrated to have acceptable reliability and validity (Dhar, 2016; Park & Searcy, 2012). First, to measure the job autonomy needed, following previous studies (Cable & Edwards, 2004; Vogel et al., 2020), participants were instructed to report how much autonomy they generally needed in their job on a seven-point scale that ranged from 1 (*none*) to 7 (*a great amount*). Next, to assess job autonomy supplied, participants were asked to report how much autonomy their job generally supplied on a scale ranging from 1 (*none*) to 7 (*a great amount*). The items were the same for job autonomy needed and supplied. Sample items were "Determining what tasks you do in your job" and "Determining how you do your work." Previous empirical research (e.g., Cao & Hamori, 2020; Vogel et al., 2020) followed the same structure: they used two different instructions for the same set of items and demonstrated the validity of these measurements. Cronbach's alpha was 0.90 for job autonomy needed and 0.92 for job autonomy supplied.

Perceived leader competence was assessed using three items from Caldwell and Hayes (2007) at Time 1. Sample items included "My leader performs duties with a high degree of skill" and "My leader demonstrates a thorough knowledge of organizational issues." Cronbach's alpha for this scale was 0.89.

Work engagement was measured with nine items developed by Schaufeli et al. (2006) at Time 2. The scale assessing work engagement comprises three dimensions: vigor (e.g., "At my job, I feel strong and vigorous"), dedication (e.g., "I am proud of the work that I do"), and absorption (e.g., "I am immersed in my work"), each measured with three items. Work engagement was operationalized as a unidimensional construct by averaging across scale items. Cronbach's alpha for this scale was 0.95.

Task performance was assessed using three items developed by Farth et al. (1991) at Time 3. Participants' immediate leaders responded to the items on a seven-point Likert scale that ranged from 1 (*very poor performance*) to 7 (*excellent performance*). A sample item was "What do you think of his work performance? Is he able to complete quality work on time?" Cronbach's alpha for this scale was 0.90.

OCB was measured using eight items from Lee and Allen (2002) at Time 3. Example items included "This employee assists others with their duties" and "This employee willingly gives his or her time to help others who have work-related problems." Cronbach's alpha for this scale was 0.93.



Control variables. We controlled for employee demographic variables, including age, sex, and organizational tenure, to decrease the likelihood that employees' demographic factors confound the relationships between the research variables. Age was controlled for because it plays an important role in influencing employee performance and is positively related to OCB (Ng et al., 2008). Compared with men, women tend to have higher levels of work and family stress, which may influence their work engagement and performance (Liu et al., 2017). Organizational tenure is also closely related to employees' work motivation and OCB (Hai & Park, 2021). We also controlled for industry type (1 = service, 2 = information technology, 3 = manufacturing) because job autonomy needed and supplied may vary among different industry types.

Data analysis

We adopted polynomial regression analysis and response surface approaches (Edwards & Cable, 2009) to test our hypotheses. This method is appropriate for examining congruence effects since three-dimensional response surfaces generated by this approach can provide more abundant information than traditional two-dimensional analysis and can allow us to determine the congruent effect of two predictors on an outcome variable (Shanock et al., 2010). More importantly, researchers recognize that the relationship between needs-supplies fit and the outcome variable reflects complicated forms that are best captured as a three-dimensional relationship (Edwards & Cable, 2009). This study proposes the polynomial regression equation as follows:

$$Z = b_0 + b_1JAN + b_2JAS + b_3JAN^2 + b_4JAN \times JAS + b_5JAS^2 + e \quad (1)$$

in which Z represents the dependent variable (i.e., work engagement), JAN refers to the effect of job autonomy needed, and JAS refers to the effect of job autonomy supplied. Control variables are not shown to simplify the equation. We tested the hypotheses by regressing work engagement on control variables and five polynomial terms: JAN , JAS , JAN squared (JAN^2), the product of JAN and JAS ($JAN \times JAS$), and JAS squared (JAS^2). To minimize multicollinearity and enhance interpretation of the obtained results, we used mean-centered JAN and JAS prior to calculating the second-order terms (Edwards & Cable, 2009). We then used the estimated coefficients to plot the three-dimensional response surface (Shanock et al., 2010).

Based on previous studies (Carter & Mossholder, 2015; Edwards & Cable, 2009), to support Hypothesis 1, the curvature of the surface along the incongruence ($JAN = -JAS$) line should be negative and significant. The curvature of the surface along the incongruence line can be calculated from the coefficients estimated in Eq. (1), specifically $b_3 - b_4 + b_5$. A significant and positive slope and non-significant curvature along the congruence ($JAN = JAS$) line indicate support for Hypothesis 2. The slope and curvature of the surface along the congruence line can be calculated from the coefficients estimated in Eq. (1), specifically $b_1 + b_2$ and $b_3 + b_4 + b_5$, respectively. Hypothesis 3 can be tested with the slope of the incongruence



($JAN = -JAS$) line (Edwards & Cable, 2009; Matta et al., 2015). If the slope of the incongruence line (calculated as $b_1 - b_2$) is significant and negative, this indicates that work engagement increases along the incongruence line from high job autonomy needed and low job autonomy supplied to low job autonomy needed and high job autonomy supplied.

To test the indirect effects of the fit between job autonomy needed and supplied on task performance (Hypothesis 4) and OCB (Hypothesis 5) via work engagement, we used the block variable approach recommended by Edwards and Cable (2009). To create a single coefficient representing the joint effect of the five polynomial terms, we combined the five polynomial regression analysis terms into a block variable (i.e., a weighted linear composite). This approach has been commonly utilized in mediated polynomial regression analyses to examine the effects of the fit or misfit on the mediator and the outcome variables² (e.g., Cao and Hamori, 2019; Tepper et al., 2018). We examined the significance of the mediation effects by conducting bootstrapping with 5,000 iterations via the 95% confidence interval. To test Hypotheses 6 and 7, we then assessed the moderated mediation model using Model 7 of the PROCESS macro (Hayes, 2013). Bootstrapping with 5,000 iterations was conducted to test the significance of the moderated mediation effects.

Results

Descriptive statistics and discriminant validity

Table 1 presents the means, standard deviations, and correlations of the variables. We then conducted a confirmatory factor analysis to examine the discriminant validity of the measures. As shown in Table 2, the proposed six-factor model shows a satisfactory fit ($\chi^2 = 1196.50$, $df = 419$, $p < 0.01$; $CFI = 0.93$, $IFI = 0.93$, $TLI = 0.92$, and $RMSEA = 0.07$). The proposed six-factor model was compared with alternative models, such as a five-factor model, a four-factor model, a three-factor model, a two-factor model, and a one-factor model. Therefore, the proposed six-factor model is better than all the alternative models, supporting the distinctiveness of the constructs.

Testing of the (in)congruence effects of job needed and supplied

The results of the polynomial regression analysis are presented in Table 3, and the corresponding response surface plot is shown in Fig. 2. The results from Model 2 presented in Table 3 show that the three second-order polynomial terms— JAN^2 , $JAN \times JAS$, JAS^2 —were jointly significant in predicting work engagement ($F = 3.29$,

² As indicated by Edwards and Cable (2009), the block variable approach can effectively facilitate the estimation of the indirect impacts of a congruence effect for the mediation model. As the block variable is calculated from the coefficients for the polynomial regression terms, it does not change the total variance explained by the equation using the original polynomial regression terms (Cao and Hamori, 2019; Edwards and Cable, 2009).



Table 1 Descriptive statistics and bivariate correlations

| Variables | Mean | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--------------------------------|-------|-------|--------|------|-------|--------|-------|-------|-------|-------|-------|-------|
| 1. Age | 34.93 | 11.00 | - | | | | | | | | | |
| 2. Gender | 1.61 | .49 | -.03 | - | | | | | | | | |
| 3. Tenure | 5.55 | 5.43 | .53** | -.04 | - | | | | | | | |
| 4. Industry type | 1.51 | .74 | -.26** | -.02 | -.09 | - | | | | | | |
| 5. Job autonomy needed | 5.48 | .87 | -.15** | -.03 | .08 | .16** | (.90) | | | | | |
| 6. Job autonomy supplied | 4.90 | .97 | -.02 | -.01 | .05 | -.04 | .26** | (.92) | | | | |
| 7. Perceived leader competence | 5.21 | 1.05 | -.02 | -.03 | -.01 | -.03 | .22** | .41** | (.89) | | | |
| 8. Work engagement | 5.04 | 1.12 | .35** | -.05 | .15** | -.26** | .17** | .33** | .44** | (.95) | | |
| 9. Task performance | 5.54 | 1.01 | .17** | .08 | .07 | -.12* | .15** | .07 | .17** | .25** | (.90) | |
| 10. OCB | 4.76 | 1.01 | .06 | -.01 | .04 | -.06 | .20** | .14** | .21** | .28** | .52** | (.93) |

N=417. * $p < .05$; ** $p < .01$

OCB Organizational citizenship behavior, Parenthesis is the Cronbach alpha's value of variables



Table 2 Model fit results for confirmatory factor analyses

| Model | χ^2 | <i>df</i> | CFI | IFI | TLI | RMSEA |
|---|----------|-----------|-----|-----|-----|-------|
| 1. The hypothesized six-factor model | 1196.50 | 419 | .93 | .93 | .92 | .07 |
| 2. Five-factor model (JAN+JAS, PLC, WE, TP, OCB) | 2407.88 | 424 | .81 | .81 | .79 | .11 |
| 3. Four-factor model (JAN+JAS+PLC, WE, TP, OCB) | 2784.24 | 428 | .77 | .77 | .75 | .12 |
| 4. Three-factor model (JAN+JAS+PLC+WE, TP, OCB) | 3941.18 | 431 | .66 | .66 | .63 | .14 |
| 5. Two-factor model (JAN+JAS+PLC+WE+TP, OCB) | 5012.82 | 433 | .56 | .56 | .52 | .16 |
| 6. One-factor model (JAN+JAS+PLC+WE+TP+OCB) | 6545.03 | 434 | .41 | .41 | .36 | .18 |

JAN job autonomy needed, *JAS* job autonomy supplied, *PLC* perceived leader competence, *WE* work engagement, *TP* task performance, *OCB* organizational citizenship behavior

$p < 0.05$) and led to an increase in R^2 ($\Delta R^2 = 0.02$). However, the curvature along the incongruence ($JAN = -JAS$) line was positive (curvature $b_3 - b_4 + b_5 = 0.19$, $p < 0.001$), indicating that the fit between job autonomy needed and supplied was not significantly associated with higher work engagement compared to a misfit between job autonomy needed and supplied. Therefore, Hypothesis 1 is not supported. In Hypothesis 2, we proposed that employees' work engagement will be higher when job autonomy needed and supplied are both high compared to when job autonomy needed and supplied are both low. The slope along the congruence ($JAN = JAS$) line was positive (slope $[b_1 + b_2] = 0.63$, $p < 0.001$) and the curvature was non-significant (curvature $[b_3 + b_4 + b_5] = 0.12$, $p > 0.05$), indicating that a "high-high" fit between job autonomy needed and supplied was associated with higher work engagement than was a "low-low" fit between job autonomy needed and supplied. The response surface shape illustrated in Fig. 2 confirms that employees' work engagement increases along the congruence line from the low-low fit condition (the front corner of the surface plot) to the high-high fit condition (the rear corner on the surface plot). Therefore, the results support Hypothesis 2.

Hypothesis 3 suggested that under the misfit condition, employees' work engagement will be higher when job autonomy supplied is higher than job autonomy needed rather than when job autonomy needed is higher than job autonomy supplied. As shown in Table 3 (Model 2), the slope along the incongruence ($JAN = -JAS$) line was significantly negative (slope $[b_1 - b_2] = -0.20$, $p < 0.05$), indicating that work engagement is higher when job autonomy supplied is higher and job autonomy needed is lower than it is when job autonomy needed is higher and job autonomy supplied is lower. We further examined this asymmetrical incongruence effect by testing the lateral shift quantity, which indicates the direction and magnitude of the lateral shift of a response surface along the incongruence line (Cole et al., 2013; Matta et al., 2015). The lateral shift quantity was significantly positive ($(b_2 - b_1) / [2 \times (b_3 - b_4 + b_5)] = 0.50$, $p < 0.001$), indicating that an increase in work engagement is sharper in the $JAN < JAS$ region than in the $JAN > JAS$ region. As shown



Table 3 Polynomial regression results for job autonomy needed and supplied predicting work engagement

| Variables | Work engagement | | |
|---|-----------------|--------------|--------------|
| | Model 1 | Model 2 | Model 3 |
| <i>Control variables</i> | | | |
| Age | .04***(.01) | .04***(.01) | .04***(.01) |
| Gender | -.08(.10) | -.05(.10) | -.03(.09) |
| Tenure | -.02(.01) | -.02(.01) | -.02(.10) |
| Industry type | -.28***(.07) | -.27***(.07) | -.26***(.06) |
| <i>Polynomial terms</i> | | | |
| Job autonomy needed (JAN) | .24***(.06) | .22***(.07) | -.20(.34) |
| Job autonomy supplied (JAS) | .33***(.05) | .42***(.06) | -.12(.34) |
| JAN ² | | .07(.05) | -.12(.26) |
| JAN×JAS | | -.04(.05) | -.14(.23) |
| JAS ² | | .09*(.04) | -.08(.14) |
| <i>Moderator</i> | | | |
| Perceived leader competence (PLC) | | | .32***(.06) |
| PLC×JAN | | | .07(.06) |
| PLC×JAS | | | .06(.06) |
| PLC×JAN ² | | | .03(.05) |
| PLC×JAN×JAS | | | .01(.04) |
| PLC×JAS ² | | | .02(.13) |
| R ² | .29 | .31 | .41 |
| ΔR ² | | .02 | .10 |
| F for the three quadratic terms | | 3.29* | |
| F for the five interaction terms | | | 10.79*** |
| <i>Congruence line (JSN = JAS)</i> | | | |
| Slope (b ₁ + b ₂) | | .63***(.08) | |
| Curvature (b ₃ + b ₄ + b ₅) | | .12(.08) | |
| <i>Incongruence line (JSN = -JAS)</i> | | | |
| Slope (b ₁ - b ₂) | | -.20*(.10) | |
| Curvature (b ₃ - b ₄ + b ₅) | | .19***(.05) | |

* $p < .05$; ** $p < .01$; *** $p < .001$

in the surface along the incongruence line in Fig. 2, employees' work engagement increases from the low job autonomy supplied and high job autonomy needed condition to the high job autonomy supplied and low job autonomy needed condition. Thus, Hypothesis 3 is supported.

Testing of the mediation effects of work engagement

As shown in Table 4, the positive indirect effect of the congruence between job autonomy needed and supplied (the block variable) on task performance through



Fig. 2 Work engagement as predicted by job autonomy needed and supplied

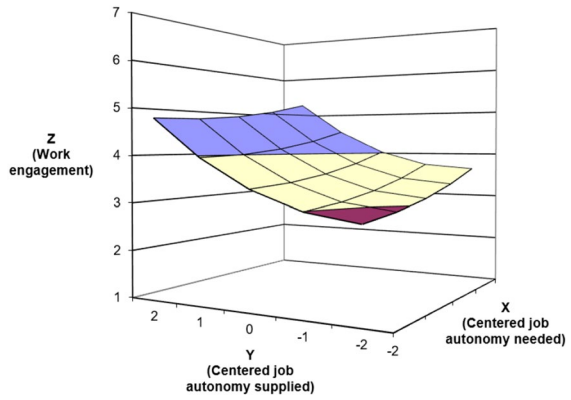


Table 4 Results for the indirect effects of job autonomy needed and supplied fit on task performance and OCB

| Direct effect | | | Indirect effect | Point estimate | | |
|---------------|----------|------------|-----------------|----------------|-------|-----|
| | | | | Lower | Upper | |
| | <i>B</i> | <i>S.E</i> | | | | |
| BV → WE | 1.53*** | .22 | BV → WE → TP | .28 | .11 | .51 |
| BV → TP | .21 | .23 | BV → WE → OCB | .36 | .19 | .59 |
| BV → OCB | .54* | .22 | | | | |
| WE → TP | .18** | .09 | | | | |
| WE → OCB | .23*** | .05 | | | | |

p* < .01; *p* < .001

BV block variable, *WE* work engagement, *TP* task performance, *OCB* organizational citizenship behavior

work engagement was significant since the 95% confidence interval from the lower to the upper bound did not include zero (point estimate=0.28; 95% CI=[0.11, 0.51]). The results also showed that the positive indirect effect of the congruence between job autonomy needed and supplied on OCB via work engagement was significant because the confidence interval did not include zero (point estimate=0.36; 95% CI=[0.19, 0.59]). These results indicate that Hypotheses 3 and 4 are supported.

Testing of the moderating mediation effects of perceived leader competence

Following the established procedure applied by previous studies (e.g., Cao and Hamori, 2019; Liao et al., 2019), to test the moderation effect of perceived leader competence on the relationship between the (mis)fit between job autonomy needed and supplied and work engagement, we first multiplied five polynomial terms (JAN, JAS, JAN2, JAN×JAS, and JAS2) by perceived leader competence and calculated the change in R². We also performed the F test for the interaction terms between perceived leader competence (PLC) and the five second-order



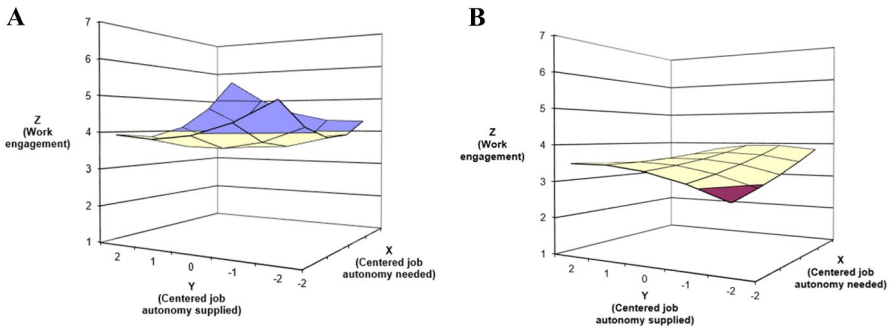


Fig. 3 **A** Work engagement as predicted by the in(congruence) between job autonomy needed and supplied at high perceived leader competence (+1 SD). **B** Work engagement as predicted by the in(congruence) between job autonomy needed and supplied at low perceived leader competence (−1 SD)

Table 5 Conditional indirect effects of job autonomy needed and supplied fit on task performance and OCB via work engagement

| Moderator | Level | Mediator | Outcome | Indirect effect | Boot SE | 95% CI |
|-----------|------------------------------|----------|---------|-----------------|---------|-------------|
| PLC | Low | WE | TP | .07 | .08 | [−.05, .26] |
| | High | | | .20 | .08 | [.07, .39] |
| | Index of moderated mediation | | | .06 | .04 | [.01, .16] |
| PLC | Low | WE | OCB | .10 | .08 | [−.05, .28] |
| | High | | | .26 | .09 | [.12, .47] |
| | Index of moderated mediation | | | .08 | .05 | [.01, .21] |

PLC perceived leader competence, WE work engagement, TP task performance, OCB organizational citizenship behavior

terms. A positive change in R^2 and significant F value for the five interactions would support the moderation effect of PLC (Cao and Hamori, 2019; Liao et al., 2019). As shown in Table 3, the change in R^2 between Model 2 and Model 3 was positive ($\Delta R^2=0.10$) and the five interaction terms were jointly significant ($F=10.79, p<0.001$), supporting the moderation effect of PLC. Figure 3A and B show the moderation effect by graphing the polynomial response surface at high (+1 SD) and low (−1 SD) levels of PLC. As illustrated in Fig. 3, the (in)congruence between job autonomy needed and supplied has a stronger relationship with work engagement when PLC is high rather than when it is low.

We further conducted moderated mediation analyses to examine the conditional indirect effects of the fit between job autonomy needed and supplied on task performance and OCB through work engagement using the block variable approach. As shown in Table 5, the conditional indirect effect of the fit between job autonomy needed and supplied on task performance through work engagement was stronger and significant when PLC was high (+1 SD; point estimate=0.20; 95% CI=[0.07, 0.35]), but weaker and non-significant when PLC was low (−1 SD; point estimate=0.07; 95% CI=[−0.05, 0.26]). The index of



moderated mediation was 0.06, boot SE was 0.04, and 95% CI did not contain 0 (95% CI = [0.01, 0.16]). Thus, Hypothesis 6 is supported. Moreover, the conditional indirect effect of the fit between job autonomy needed and supplied on OCB through work engagement was stronger and significant when PLC was high (+1 SD; point estimate = 0.26; 95% CI [0.12, 0.47]), but weaker and non-significant when PLC was low (-1 SD; point estimate = 0.10; 95% CI [-0.05, 0.28]). The index of moderated mediation was 0.08, boot SE was 0.05, and 95% CI did not contain 0 (95% CI = [0.01, 0.21]). Therefore, Hypothesis 7 is supported as well.

Discussion

Job autonomy is increasingly prominent within the context of a changing labor market (Jiang et al., 2020; Sørliie et al., 2022). Expanding the literature on job autonomy, this study investigated the implications of the interplay between job autonomy needed and supplied for employee outcomes. The present multi-wave and multi-source study showed that under the fit condition, employees' work engagement is higher when job autonomy needed and supplied are both high compared with when job autonomy needed and supplied are both low. The fit between job autonomy needed and supplied was not significantly associated with higher work engagement compared to a misfit between job autonomy needed and supplied. Under the misfit condition, employees' work engagement is higher when job autonomy supplied exceeds job autonomy needed compared to when job autonomy supplied is lower than job autonomy needed. Our analysis further demonstrates that the fit between job autonomy needed and supplied has indirect effects on task performance and OCB through work engagement, respectively. Moreover, the PLC moderated the indirect effects of the fit between job autonomy needed and supplied on task performance and OCB via work engagement, respectively.

Theoretical implications

Our findings make several unique contributions to the literature. First, the existing literature has largely focused on the effects of job autonomy supplied on employee outcomes, while ignoring the role of the need for job autonomy (e.g., Jiang et al., 2020; Sørliie et al., 2022). As suggested by the literature on job characteristics (Cao & Hamori, 2020; Voge et al., 2020), employees' behaviors and performance are largely determined by the joint effects of the work environment's supplies and their actual needs. Moreover, the contemporary organizations' human resource practices (e.g., granting greater autonomy) combined with traditional culture (e.g., obedience and collectivistic orientation) necessitate the theoretical advancement of the consequences of employees' job autonomy supplied and needed in the Chinese context. An exclusive focus on job autonomy supplied—while neglecting the potential effect of employees' job autonomy needed—is highly likely to produce an incomplete understanding of the function of job autonomy. This study addresses this issue and



extends the current knowledge on job autonomy by investigating the implications of the fit between job autonomy needed and supplied for employees' motivational state and performance outcomes, using the P–J fit lens. Our study is one of the first to consider the effects of both job autonomy needed and supplied, thereby offering a more nuanced understanding of the impacts of job autonomy on employees and extending the application of P–J fit theory in the Chinese context.

The results indicate that employees' work engagement will be highest when the amount of job autonomy supplied fits with the needed amount under the high-high fit condition. Advancing the literature on job autonomy and P–J fit theory, we distinguish between the situations in which the organization appropriately provides a higher amount of job autonomy and the situations in which the organization appropriately provides a lower amount of job autonomy. For employees who desire high levels of job autonomy, if the organization also provides them with high job autonomy, those employees may not only have more room for personal decision-making and taking responsibility, but may also feel motivated to draw on these resources to learn new skills and achieve their goals (Fürstenberg et al., 2021). Consequently, high job autonomy needed and supplied are likely to result in higher levels of employee work engagement. By contrast, when job autonomy supplied and needed are both low, employees are less able to have control over their job tasks and lack motivation to perform tasks with energy and passion. Those employees are inclined to passively perform tasks and display lower work engagement. Adding to the job autonomy literature and P–J fit theory, our findings suggest that the effects of the absolute fit between job autonomy needed and supplied is more beneficial for employees' work engagement when the absolute fit is high rather than when it is low.

Regarding our second contribution to the literature on job autonomy, the results provide evidence that excessive levels of job autonomy are associated with higher work engagement compared to deficient job autonomy. These results are consistent with previous studies (e.g., Lambert et al., 2012; Liao et al., 2019) that revealed that excessive levels of job resources provided by the organization or leaders facilitate more desirable employee attitudes and behaviors, while deficient levels of job resources are associated with unfavorable employee outcomes such as lower job satisfaction and organizational commitment. Although researchers (Stiglbauer & Kovacs, 2018; Zhou, 2020) indicated that too much job autonomy could have negative impacts on employees owing to increased ambiguity and uncertainty, they ignored the role that job autonomy needed plays in the function of job autonomy and neglected the dynamic effects of job autonomy needed and supplied on employees. Challenging their arguments on job autonomy, our analysis suggests that excessive levels of job autonomy are beneficial for employees' work engagement.

Third, our study extends the research stream on job autonomy and employee performance by revealing that work engagement acts as a crucial mediating mechanism that transmits the effects of the fit between job autonomy needed and supplied to task performance and OCB. This study deepens our theoretical understanding of the consequences of job autonomy fit by integrating the JD-R approach, which highlights the role of motivational state such as work engagement in linking job resources to performance outcomes. Specifically, the fit between job autonomy



needed and supplied is associated with higher work engagement, which motivates employees to fulfill their job responsibilities and go beyond their job duties to contribute to the organization. By investigating the mediating role of work engagement, this study helps to explain how the fit between job autonomy needed and supplied leads to performance consequences such as task performance and OCB, which are vital for organizational effectiveness.

More importantly, our findings support that PLC moderates the indirect effects of the fit between job autonomy needed and supplied on task performance and OCB through work engagement. The traditional literature on job design has highlighted the impacts of job characteristics such as job autonomy on employee outcomes through psychological and motivational dynamics (De Spiegelaere et al., 2014; Sørli et al., 2022); however, this line of research has largely neglected to consider the role of leaders in the operation of the job design. In Chinese enterprises with higher power distance, leaders have more power and employees are more obedient to their leaders compared to individuals in Western countries (Hu & Luo, 2020). Integrating the JD-R theory with research on job characteristics, this study reinforces the notion that PLC is a vital factor in shaping the performance consequences of job autonomy in the Chinese context. Our work addressed recent calls (e.g., Sørli et al., 2022) for more empirical studies on the job autonomy–performance association to consider contextual or personal resources as possible moderators. The results indicate that when leader competence is perceived to be high, the fit between job autonomy needed and supplied has stronger indirect impacts on both task performance and OCB.

Our findings also extend the boundary conditions of the P–J fit theory by showing that high PLC is helpful in maximizing the effects of the fit between job autonomy needed and supplied. Employees respond more favorably to the fit between job autonomy needed and supplied when they perceive that their leaders are competent. This is because competent leaders can provide employees with effective guidance, point out potential solutions, and help employees cope with difficulties that cannot be solved by the employees themselves (Byun et al., 2017; Sturm et al., 2017). Accordingly, PLC can serve as an important contingency for channeling the indirect effects of the fit between job autonomy needed and supplied on task performance and OCB through work engagement. By identifying the role of PLC in enhancing the effectiveness of the fit between job autonomy needed and supplied, this study provides a step forward in developing a comprehensive understanding regarding the functions of job autonomy fit for employees in the Chinese context.

Managerial implications

Practically, this study offers several meaningful implications for organizations to maximize the function of job autonomy and promote employee performance. First, our findings suggest that when job autonomy needed and supplied are both high, employees are likely to be highly engaged in their work, which drives them to perform work tasks well and display more OCB within the organization. Therefore, organizations should pay more attention to employees' job autonomy needed



and grant more job autonomy to employees who desire high levels of job autonomy. To evaluate employees' needed levels of job autonomy, organizations could attempt to apply various communication channels such as regular employee surveys and 360-degree feedback systems to accurately capture employees' job autonomy needed (Lambert et al., 2012).

To provide employees with more control over their work, organization managers could employ formal procedures to support employees' autonomy and discretion during work processes, allow employees to participate in important job-related decisions, as well as encourage and reward exceptional achievement in job design (De Clercq et al., 2021). Organization managers could also adopt informal measures; for example, establishing and maintaining an organizational climate that stimulates individual initiative. These measures may motivate employees to best marshal their resources to fulfill their needs and achieve job-related goals. Notably, we do not encourage organizations to blindly provide employees with job autonomy in all situations. Rather, organization managers should place considerable value on employees' personal needs when granting autonomy, which helps avoid the situation of deficient levels of job autonomy supplied and enhance the performance effects of job autonomy.

Further, PLC acts as an important contextual factor that strengthens the indirect effects of the fit between job autonomy needed and supplied on task performance and OCB through work engagement. Therefore, organizations should consider leaders' competence (e.g., knowledge, skills, and expertise) as a crucial element of the selection and promotion systems. Although some leaders may have higher power and status in the organization, they are likely to be perceived as incompetent owing to lack of expertise, inappropriate qualifications, or age-inverse supervisory relationships (Kunze & Menges, 2017). Organizations could implement leadership training programs aimed at facilitating leaders' domain-specific knowledge and skills to consistently improve leaders' competence (Mao et al., 2019). Leadership development programs that focus on improving leaders' emotional and interpersonal intelligence are also effective in developing leader competence. In conclusion, our findings can help practitioners to improve the effectiveness of job autonomy and facilitate organizational success.

Limitations and future directions

This study has several limitations that should be considered and addressed in future studies. First, although we employed a multi-wave and multi-source research design to reduce common method bias, we must be cautious in drawing conclusions of causality among the examined constructs. Job autonomy and work engagement may be reciprocally related to each other based on the resource accumulation perspective and future studies should use a longitudinal or experimental design to confirm the casual relationships among our study variables. Second, this study was conducted in the Chinese context, which may limit the generalizability of the current findings. Influenced by the Chinese culture that emphasizes high power distance and collectivism (Liu et al., 2011), employees may react to job autonomy supplied and leader



competence more powerfully compared with those in the Western contexts. To help generalize our findings, we call for future studies to examine the current theoretical model in various cultural contexts.

Third, we drew on the P–J fit theory to explain how the fit between job autonomy needed and supplied influences task performance and OCB through work engagement. Future studies could consider other theoretical frameworks that may help further understand the underlying mechanisms linking these constructs. For example, needed and supplied fit is likely to facilitate organizational commitment (Cao & Hamori, 2020) or fulfill employees' basic psychological needs (Lambert et al., 2012), in turn promoting employees' job performance. Third, future studies are encouraged to explore boundary conditions (e.g., cultural value, organizational climate, or personality trait) for the effectiveness of job autonomy needed and supplied. Doing so can elucidate the implications of job autonomy needed and supplied for employee outcomes.

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Data availability The data are available from the corresponding author, upon reasonable request.

Declarations

Conflict of interest No potential conflict of interest was reported by the authors.

References

- Baer, M. D., Frank, E. L., Matta, F. K., Luciano, M. M., & Wellman, N. (2021). Undertrusted, Overtrusted, or Just Right? The Fairness of (In) Congruence between Trust Wanted and Trust Received. *Academy of Management Journal*, *64*(1), 180–206.
- Bakker, A. B., & Demerouti, E. (2017). Job demands–resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology*, *22*(3), 273–285.
- Bakker, A. B., Demerouti, E., & Sanz-Vergel, A. I. (2023). Job demands-resources theory: Ten years later. *Annual Review of Organizational Psychology and Organizational Behavior*, *10*(1), 25–53.
- Bakker, A. B., Rodríguez-Muñoz, A., & Sanz Vergel, A. I. (2016). Modelling job crafting behaviours: Implications for work engagement. *Human Relations*, *69*(1), 169–189.
- Bledow, R., Kühnel, J., Jin, M., & Kuhl, J. (2022). Breaking the chains: The inverted-U-shaped relationship between action-state orientation and creativity under low job autonomy. *Journal of Management*, *48*(4), 905–935.
- Breevaart, K., & Bakker, A. B. (2018). Daily job demands and employee work engagement: The role of daily transformational leadership behavior. *Journal of Occupational Health Psychology*, *23*(3), 338–349.
- Breevaart, K., Bakker, A. B., Demerouti, E., & Derks, D. (2016). Who takes the lead? A multi-source diary study on leadership, work engagement, and job performance. *Journal of Organizational Behavior*, *37*(3), 309–325.
- Buil, I., Martínez, E., & Matute, J. (2019). Transformational leadership and employee performance: The role of identification, engagement and proactive personality. *International Journal of Hospitality Management*, *77*, 64–75.
- Byun, G., Dai, Y., Lee, S., & Kang, S. (2017). Leader trust, competence, LMX, and member performance: A moderated mediation framework. *Psychological Reports*, *120*(6), 1137–1159.



- Cable, D. M., & Edwards, J. R. (2004). Complementary and supplementary fit: A theoretical and empirical integration. *Journal of Applied Psychology, 89*, 822–834.
- Caldwell, C., & Hayes, L. A. (2007). Leadership, trustworthiness, and the mediating lens. *Journal of Management Development, 26*(3), 261–281.
- Cao, J., & Hamori, M. (2020). How can employers benefit most from developmental job experiences? The needs–supplies fit perspective. *Journal of Applied Psychology, 105*(4), 422–432.
- Carter, M. Z., & Mossholder, K. W. (2015). Are we on the same page? The performance effects of congruence between supervisor and group trust. *Journal of Applied Psychology, 100*(5), 1349–1363.
- Christian, M. S., Garza, A. S., & Slaughter, J. E. (2011). Work engagement: A quantitative review and test of its relations with task and contextual performance. *Personnel Psychology, 64*(1), 89–136.
- Cole, M. S., Carter, M. Z., & Zhang, Z. (2013). Leader-team congruence in power distance values and team effectiveness: The mediating role of procedural justice climate. *Journal of Applied Psychology, 98*(6), 962–973.
- Connelly, M. S., Gilbert, J. A., Zaccaro, S. J., Threlfall, K. V., Marks, M. A., & Mumford, M. D. (2000). Exploring the relationship of leadership skills and knowledge to leader performance. *The Leadership Quarterly, 11*, 65–86.
- Cooke, F. L., Xiao, M., & Chen, Y. (2021). Still in search of strategic human resource management? A review and suggestions for future research with China as an example. *Human Resource Management, 60*(1), 89–118.
- Chung-Yan, G. A. (2010). The nonlinear effects of job complexity and autonomy on job satisfaction, turnover, and psychological well-being. *Journal of Occupational Health Psychology, 15*(3), 237–251.
- De Clercq, D., Sun, W., & Beldastegui, I. (2021). When is job control most useful for idea championing? Role conflict and psychological contract violation effects. *Journal of Management & Organization, 27*(2), 382–396.
- De Cooman, R., Mol, S. T., Billsberry, J., Boon, C., & Den Hartog, D. N. (2019). Epilogue: Frontiers in person–environment fit research. *European Journal of Work and Organizational Psychology, 28*(5), 646–652.
- De Spiegelaere, S., Van Gyes, G., De Witte, H., Niesen, W., & Van Hootegem, G. (2014). On the relation of job insecurity, job autonomy, innovative work behaviour and the mediating effect of work engagement. *Creativity and Innovation Management, 23*(3), 318–330.
- Dhar, R. L. (2016). Ethical leadership and its impact on service innovative behavior: The role of LMX and job autonomy. *Tourism Management, 57*, 139–148.
- Dierdorff, E. C., & Jensen, J. M. (2018). Crafting in context: Exploring when job crafting is dysfunctional for performance effectiveness. *Journal of Applied Psychology, 103*(5), 463–477.
- Edwards, J. R., & Cable, D. A. (2009). The value of value congruence. *Journal of Applied Psychology, 94*, 654–677.
- Farth, J., Dobbin, G., & Cheng, B. (1991). Cultural relativity in action: A comparison of self-ratings made by Chinese and US workers. *Personnel Psychology, 44*(1), 129–147.
- Fürstenberg, N., Alfes, K., & Kearney, E. (2021). How and when paradoxical leadership benefits work engagement: The role of goal clarity and work autonomy. *Journal of Occupational and Organizational Psychology, 94*(3), 672–705.
- Hai, S., & Park, I. J. (2021). The accelerating effect of intrinsic motivation and trust toward supervisor on helping behavior based on the curvilinear model among hotel frontline employees in China. *Journal of Hospitality and Tourism Management, 47*, 12–21.
- Hai, S., Wu, K., Park, I. J., Li, Y., Chang, Q., & Tang, Y. (2020). The role of perceived high-performance HR practices and transformational leadership on employee engagement and citizenship behaviors. *Journal of Managerial Psychology, 35*(6), 513–526.
- Hayes, A.F. (2013). *An introduction to mediation, moderation, and conditional process*. <https://doi.org/10.1146/annurev-orgpsych-032117-104640>
- Hu, W., & Luo, J. (2020). Leader humor and employee creativity: A model integrating pragmatic and affective roles. *Asian Business & Management, 22*, 509–528.
- Jiang, Z., Di Milia, L., Jiang, Y., & Jiang, X. (2020). Thriving at work: A mentoring-moderated process linking task identity and autonomy to job satisfaction. *Journal of Vocational Behavior, 118*, 103373.
- Joo, B. K., Jeung, C. W., & Yoon, H. J. (2010). Investigating the influences of core self-evaluations, job autonomy, and intrinsic motivation on in-role job performance. *Human Resource Development Quarterly, 21*(4), 353–371.



- Kong, D. T., Park, S., & Peng, J. (2023). Appraising and reacting to perceived pay for performance: Leader competence and warmth as critical contingencies. *Academy of Management Journal*, *66*(2), 402–431.
- Kristof-Brown, A. L., & Guay, R. P. (2011). Person-environment fit. In S. Zedeck (Ed.), *APA handbook of industrial and organizational psychology* (Vol. 3, pp. 3–50). American Psychological Association.
- Kristof-Brown, A. L., Zimmerman, R. D., & Johnson, E. C. (2005). Consequences of individuals' fit at work: A meta-analysis of person-job, person-organization, person-group, and person-supervisor fit. *Personnel Psychology*, *58*(2), 281–342.
- Kubicek, B., & Korunka, C. (2017). Job demands in a changing world of work. In R. J. Burke & K. M. Page (Eds.), *Research handbook on work and well-being* (pp. 59–76). Edward Elgar Publishing.
- Kubicek, B., Paškvan, M., & Bunner, J. (2017). The Bright and Dark Sides of Job Autonomy. In C. Korunka & B. Kubicek (Eds.), *Job Demands in a Changing World of Work*. Cham: Springer.
- Kunze, F., & Menges, J. I. (2017). Younger supervisors, older subordinates: An organizational-level study of age differences, emotions, and performance. *Journal of Organizational Behavior*, *38*(4), 461–486.
- Lambert, L. S., Tepper, B. J., Carr, J. C., Holt, D. T., & Barelka, A. J. (2012). Forgotten but not gone: An examination of fit between leader consideration and initiating structure needed and received. *Journal of Applied Psychology*, *97*(5), 913–930.
- Langfred, C. W. (2004). Too much of a good thing? Negative effects of high trust and individual autonomy in self-managing teams. *Academy of Management Journal*, *47*(3), 385–399.
- Lee, K., & Allen, N. J. (2002). Organizational citizenship behavior and workplace deviance: The role of affect and cognitions. *Journal of Applied Psychology*, *87*(1), 131–142.
- Li, C., Liang, J., & Farh, J. L. (2020). Speaking up when water is murky: An uncertainty-based model linking perceived organizational politics to employee voice. *Journal of Management*, *46*(3), 443–469.
- Liao, Z., Liu, W., Li, X., & Song, Z. (2019). Give and take: An episodic perspective on leader-member exchange. *Journal of Applied Psychology*, *104*(1), 34–51.
- Liu, C., Spector, P. E., Liu, Y., & Shi, L. (2011). The interaction of job autonomy and conflict with supervisor in China and the United States: A qualitative and quantitative comparison. *International Journal of Stress Management*, *18*(3), 222–245.
- Liu, J., Cho, S., & Putra, E. D. (2017). The moderating effect of self-efficacy and gender on work engagement for restaurant employees in the United States. *International Journal of Contemporary Hospitality Management*, *29*(1), 624–642.
- Mao, J. Y., Chiang, J. T. J., Chen, L., Wu, Y., & Wang, J. (2019). Feeling safe? A conservation of resources perspective examining the interactive effect of leader competence and leader self-serving behaviour on team performance. *Journal of Occupational and Organizational Psychology*, *92*(1), 52–73.
- Martela, F., Gómez, M., Unanue, W., Araya, S., Bravo, D., & Espejo, A. (2021). What makes work meaningful? Longitudinal evidence for the importance of autonomy and beneficence for meaningful work. *Journal of Vocational Behavior*, *131*, 103631.
- Matta, F. K., Scott, B. A., Koopman, J., & Conlon, D. E. (2015). Does seeing “eye to eye” affect work engagement and organizational citizenship behavior? A role theory perspective on LMX agreement. *Academy of Management Journal*, *58*(6), 1686–1708.
- Ng, K. Y., Ang, S., & Chan, K. Y. (2008). Personality and leader effectiveness: A moderated mediation model of leadership self-efficacy, job demands, and job autonomy. *Journal of Applied Psychology*, *93*(4), 733–743.
- Oh, I. S., Guay, R. P., Kim, K., Harold, C. M., Lee, J. H., Heo, C. G., & Shin, K. H. (2014). Fit happens globally: A meta-analytic comparison of the relationships of person-environment fit dimensions with work attitudes and performance across East Asia, Europe, and North America. *Personnel Psychology*, *67*(1), 99–152.
- Oldham, G. R., & Fried, Y. (2016). Job design research and theory: Past, present and future. *Organizational Behavior and Human Decision Processes*, *136*, 20–35.
- Park, I. J., Kim, P. B., Hai, S., & Zhang, X. (2021). What matters for employees' daily interpersonal behaviors? *International Journal of Contemporary Hospitality Management*, *33*(4), 1210–1229.
- Park, R. (2018). The roles of OCB and automation in the relationship between job autonomy and organizational performance: A moderated mediation model. *The International Journal of Human Resource Management*, *29*(6), 1139–1156.



- Park, R., & Searcy, D. (2012). Job autonomy as a predictor of mental well-being: The moderating role of quality-competitive environment. *Journal of Business and Psychology, 27*(3), 305–316.
- Parker, S. K., & Knight, C. (2023). The SMART model of work design: A higher order structure to help see the wood from the trees. *Human Resource Management*. <https://doi.org/10.1002/hrm.22200>
- Podsakoff, P. M., Podsakoff, N. P., Williams, L. J., Huang, C., & Yang, J. (2023). Common method bias: It's bad, it's complex, it's widespread, and it's not easy to fix. *Annual Review of Organizational Psychology and Organizational Behavior*. <https://doi.org/10.1146/annurev-orgpsych-110721-040030>
- Richardson, H. A., Klumper, D. H., & Taylor, S. G. (2021). Too little and too much authority sharing: Differential relationships with psychological empowerment and in-role and extra-role performance. *Journal of Organizational Behavior, 42*(8), 1099–1119.
- Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement, 66*(4), 701–716.
- Shanock, L. R., Baran, B. E., Gentry, W. A., Pattison, S. C., & Heggstad, E. D. (2010). Polynomial regression with response surface analysis: A powerful approach for examining moderation and overcoming limitations of difference scores. *Journal of Business and Psychology, 25*(4), 543–554.
- Sørli, H. O., Hetland, J., Bakker, A. B., Espevik, R., & Olsen, O. K. (2022). Daily autonomy and job performance: Does person-organization fit act as a key resource? *Journal of Vocational Behavior, 133*, 103691.
- Stiglbauer, B., & Kovacs, C. (2018). The more, the better? Curvilinear effects of job autonomy on well-being from vitamin model and PE-fit theory perspectives. *Journal of Occupational Health Psychology, 23*(4), 520–536.
- Sturm, R. E., Vera, D., & Crossan, M. (2017). The entanglement of leader character and leader competence and its impact on performance. *The Leadership Quarterly, 28*(3), 349–366.
- Tepper, B. J., Dimotakis, N., Lambert, L. S., Koopman, J., Matta, F. K., Man Park, H., & Goo, W. (2018). Examining follower responses to transformational leadership from a dynamic, person–environment fit perspective. *Academy of Management Journal, 61*(4), 1343–1368.
- Timming, A. R., Carpini, J. A., Hirst, T. M., Tian, A. W., & Notebaert, L. (2023). Experienced incivility undermines the positive effects of job autonomy on mental and physical health. *The International Journal of Human Resource Management, 35*, 563–586.
- Travehyan, R. (2001). The paradox of autonomy: A case of academic research scientists. *Human Relations, 54*(4), 495–525.
- Vogel, R. M., Rodell, J. B., & Agolli, A. (2022). Daily engagement and productivity: The importance of the speed of engagement. *Journal of Applied Psychology, 107*(9), 1579–1599.
- Vogel, R. M., Rodell, J. B., & Sabey, T. B. (2020). Meaningfulness misfit: Consequences of daily meaningful work needs–supplies incongruence for daily engagement. *Journal of Applied Psychology, 105*(7), 760–770.
- Xu, L., Liu, Z., Ji, M., Dong, Y., & Wu, C. H. (2022). Leader perfectionism—Friend or foe of employee creativity? Locus of control as a key contingency. *Academy of Management Journal, 65*(6), 2092–2117.
- Zhang, W., Jex, S. M., Peng, Y., & Wang, D. (2017). Exploring the effects of job autonomy on engagement and creativity: The moderating role of performance pressure and learning goal orientation. *Journal of Business and Psychology, 32*(3), 235–251.

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