

Etgen, Sascha; Petrou, Paraskevas; Häusser, Jan A.

Article — Published Version

Too little and too much job control impair psychological needs: The buffering role of leisure crafting

Journal of Occupational and Organizational Psychology

Provided in Cooperation with:

John Wiley & Sons

Suggested Citation: Etgen, Sascha; Petrou, Paraskevas; Häusser, Jan A. (2025) : Too little and too much job control impair psychological needs: The buffering role of leisure crafting, Journal of Occupational and Organizational Psychology, ISSN 2044-8325, Wiley, Hoboken, NJ, Vol. 98, Iss. 4, <https://doi.org/10.1111/joop.70069>

This Version is available at:

<https://hdl.handle.net/10419/335605>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



<https://creativecommons.org/licenses/by/4.0/>

RESEARCH ARTICLE

Too little and too much job control impair psychological needs: The buffering role of leisure crafting

Sascha Etgen¹ | Paraskevas Petrou²  | Jan A. Häusser¹

¹Department of Psychology, Justus-Liebig-University, Giessen, Germany

²Department of Psychology, Erasmus University Rotterdam, Rotterdam, The Netherlands

Correspondence

Sascha Etgen, Department of Psychology, Justus-Liebig-University, Otto-Behaghel-Straße 10D, Giessen 35394, Germany.

Email: sascha.etgen@uni-giessen.de

Funding information

Deutsche Forschungsgemeinschaft, Grant/Award Number: AB 972/2-1

Abstract

It is well known that low levels of job control are problematic, but research has recently begun to examine whether the same can be true for too much job control. Based on self-determination theory and the vitamin model, we investigate the relationship between job control and psychological needs within and beyond the work context, and the moderating effects of leisure crafting. We assume that not only too little, but also too much job control can negatively affect the satisfaction of context-free psychological needs (the needs for autonomy, competence, and relatedness) through frustrated needs at work. By examining the moderating role of leisure crafting, we further seek to shed light on strategies that may counteract the spillover of frustrated needs in the work context to other life domains. To test our model, we conducted a longitudinal study with 248 employees who completed four surveys over the course of 6 weeks. We found support for a curvilinear relationship between job control and frustrated psychological needs at work (most notably autonomy and competence needs) that further extends to reduced context-free needs satisfaction. Leisure crafting counteracts a negative spillover (for autonomy and competence needs).

KEYWORDS

curvilinear effects, job control, leisure crafting, psychological needs, spillover

This is an open access article under the terms of the [Creative Commons Attribution](https://creativecommons.org/licenses/by/4.0/) License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

© 2025 The Author(s). *Journal of Occupational and Organizational Psychology* published by John Wiley & Sons Ltd on behalf of The British Psychological Society.

Practitioner points

- Balancing job control is key—While low job control is widely recognized as problematic, this study highlights that excessive job control can also lead to frustration of psychological needs.
- Needs are connected across life domains—The frustration of autonomy, competence, and relatedness at work can spill over into employees' broader lives, reducing overall needs satisfaction.
- Encouraging leisure crafting as a coping strategy to sustain motivation and well-being. Employees who engage in leisure crafting—actively shaping their leisure time to fulfil personal needs—can buffer some of the negative spillover effects of job control frustrations.

INTRODUCTION

Sometimes jobs are ill-suited to support people's basic psychological needs, namely the needs for autonomy, competence, and relatedness. According to self-determination theory (SDT), these needs serve as the nutrients for individuals' adjustment, integrity, and growth (Deci & Ryan, 2000; Ryan, 1995), and they are central to motivation and well-being (Milyavskaya & Koestner, 2011). Previous research has revealed job control (often referred to as job autonomy) as an important antecedent of psychological needs fulfilment (Van den Broeck et al., 2008). Consequently, (un-)fulfilled psychological needs due to (low) job control can be understood as the subjective experience through which (low) job control translates into (mal-)adaptive outcomes.

While low job control has long been considered detrimental, the vitamin model (Warr, 1990), and empirical work (e.g., Rudolph et al., 2025; Stiglbauer & Kovacs, 2018), suggest that excessively high levels of job control may also undermine psychological needs (Zhou, 2020). Such high levels can hinder self-determined planning and task execution, for example, when decision-making becomes an obligation rather than an opportunity. Despite some research on non-linear relationships between job control and well-being, previous studies have typically assumed a positive linear relationship between job control and motivational outcomes. This focus overlooks that both too low and too high job control may disrupt the fulfilment of basic psychological needs. What remains unclear is how deviations from optimal job control influence the motivational processes that underpin well-being.

Furthermore, research on job control and psychological needs has placed strong emphasis on the workplace context, often ignoring the universality of psychological needs (cf. Van den Broeck et al., 2010). While research on work-to-leisure spillover (Edwards & Rothbard, 2000) has primarily examined how job control is related to variables such as work–family conflict (Butler et al., 2005), leisure time behaviour (Abdel Hadi et al., 2022), or general life satisfaction (Hakanen & Van Dierendonck, 2011), it has largely overlooked the broader significance of psychological needs as a fundamental component of individual functioning (Sirgy et al., 2001; Unanue et al., 2017). As a result, we still know little about whether and how non-optimal job control may spill over into the non-work domain and undermine individuals' broader motivational functioning and well-being.

De Bloom et al. (2020) put forward the identity-based integrative needs model of crafting, describing processes related to psychological needs and how they are experienced and shaped *within* and *across* life domains. According to this model, it seems likely that frustrated work-related psychological needs (i.e., induced by too little and too much job control) generalize into context-free experiences (i.e., context-free psychological need satisfaction) through spillover processes (i.e., how people feel at work shapes how they feel generally in their lives). Nonetheless, throughout these interconnections between different life domains, individuals are not passive (de Bloom et al., 2020). Instead, if they use active strategies to grow and develop in their leisure time, they should be able to buffer the negative effects of suboptimal job control. Therefore, leisure crafting, which is the engagement in leisure activities with a focus

on growth, learning, and relatedness (Petrou & Bakker, 2016), should help to counteract the negative spillover from job-related needs to context-free need satisfaction.

Taken together, our paper aims to deliver the following contributions to the field. First, based on SDT (Deci & Ryan, 2000) and the vitamin model (Warr, 1990), this article tests curvilinear effects of job control; that is, we predict that insufficient (*too little*) and excessive (*too much*) levels should negatively impact psychological needs. Integrating these two models is promising, given that job control is frequently mentioned as a key antecedent of basic psychological needs (Van den Broeck et al., 2008). While the vitamin model highlights that job characteristics, such as job control, can have diminishing or even adverse effects on motivation when exceeding an optimal level, SDT explains *why* these effects occur—namely, through the satisfaction or frustration of psychological needs. By combining both perspectives, this study bridges the structural properties of jobs (as emphasized by the vitamin model) with the drivers of motivation as proposed by SDT in a novel curvilinear approach. This integration provides a richer theoretical understanding of *when and why* job control promotes employee motivation, offering a more comprehensive account of the dynamic interplay between job design and human motivation.

Second, we aim to take a more holistic view on the negative outcomes of too little/too much job control and psychological needs beyond the work domain. We assume that the unpleasant experience of *frustrated* work-related psychological needs should spill over to non-work experiences by lowering the context-free *satisfaction* of psychological needs (indirect relationship). This assumption builds on the conceptual distinction between need satisfaction and need frustration, which are not merely opposite ends of a continuum but represent qualitatively different experiences that are driven by distinct antecedents and linked to different psychological outcomes (Vansteenkiste & Ryan, 2013). While need satisfaction is associated with growth and well-being, need frustration reflects an undermining of autonomy (e.g., feeling restrained), competence (e.g., feeling incompetent) and/or relatedness (e.g., feeling lonely and/or experiencing conflicts). Our model explicitly incorporates this distinction at different stages: We propose that non-optimal levels of job control represent a strong negative experience—interpreted as a threat to one's ability to act autonomously, competently, or to meaningfully connect with others—and hence *directly* lead to psychological need frustration at work. This approach is in line with previous research that also focused on need frustration in the context of job control (e.g., Fasbender & Gerpott, 2023; Harold et al., 2016). This frustration is expected to generalize and result in lower satisfaction of context-free psychological needs. Our study highlights that the effects of job control are not confined to the workplace but may have broader implications for individuals' overall motivational functioning, well-being, and engagement in leisure and community life.

Third, building on previous research and on theorizing by de Bloom et al. (2020), which conceptualizes individuals as active agents in the work-to-leisure spillover process, we propose that leisure crafting can mitigate the indirect, negative (curvilinear) effects of job control on context-free need satisfaction through need frustration at work. We adapt the central assumption of need-based crafting across life domains and extend it to the context of leisure crafting. Accordingly, we merge perspectives on work-related suboptimal states (e.g., Stiglbauer & Kovacs, 2018) with work-leisure literature, because leisure crafting is a way in which employees may deal with undesired job characteristics (Petrou & Bakker, 2016). By integrating these perspectives, our study introduces a cross-domain mechanism that explains how individuals can proactively restore need satisfaction outside work when job design conditions within work are less optimal and likely to produce domain-specific need frustration. This contribution expands current theorizing on job control by positioning leisure crafting as a dynamic, self-regulatory process that connects experiences across domains.

To test these assumptions, we conducted a four-wave longitudinal study with 248 employees. Our data allowed us to test time-lagged (curvilinear) relationships between job control, psychological needs (within and beyond work), and leisure crafting. We conceptualize all proposed relationships at the between-person level—that is, we assume that employees who generally experience job control as too low or too high differ in their psychological need experiences compared to those with more optimal levels of job control. Previous research supports this approach, as both job control (Totterdell et al., 2006) and leisure crafting (Petrou et al., 2024) have been shown to exhibit substantial stability over time.

Theoretical framework: job control and psychological needs

Job control is defined as the degree of discretion employees have over how they do their work and what they do at work (Ganster & Fusilier, 1989; Karasek, 1979). Many job stress models (e.g., Demerouti et al., 2001; Hackman & Oldham, 1976; Karasek, 1979) highlight job control as a crucial job-related resource, and this assumption is consistent with extensive research that has found beneficial effects of job control on a broad range of well-being indicators, such as affect, vigour, work engagement, and mental strain (see De Lange et al., 2003; Häusser et al., 2010; Van der Doef & Maes, 1999 for reviews).

Providing employees with freedom to make choices, opportunities to use and develop their skills, and to interact meaningfully with others helps employees meet their work-related demands in ways that provide them with optimal opportunities to satisfy their psychological needs (Chen & Wu, 2022). Psychological needs are “evolved tendencies to seek out certain basic types of psychosocial experiences and to feel good and thrive when those basic experiences are obtained” (Sheldon, 2011, p. 552). According to basic psychological needs (BPNS) theory (Deci & Ryan, 2000), the needs for autonomy, competence, and relatedness are the three most fundamental psychological needs. Meeting them is crucial to the experience of well-being and thriving and a central precondition for humans to feel aligned with their intrinsic preferences and values (Gagné & Hewett, 2024).

Low levels of job control are perceived as a threat to psychological need fulfilment (Gagné & Deci, 2005) in several ways. First, having too little job control frustrates the need for autonomy, as it makes employees feel restricted in their choices at work (deCharms, 1980). Empirical evidence from Olafsen and Halvari (2017) reveals a positive relationship between job control and need satisfaction in a sample of Norwegian service workers (for similar findings, see Deci et al., 2017; Van den Broeck et al., 2010). Second, too low levels of job control should reduce the scope for experiencing professional efficacy through task accomplishment (Bakker et al., 2005). Experiences of professional efficacy, however, are strongly positively related to competence needs (Deci et al., 2017; Olafsen & Halvari, 2017; Van den Broeck et al., 2010). Similarly, job control determines how a task outcome is appraised and perceived. High job control allows for attributing success to one's own decisions and actions taken instead of external causes (Spector, 2009). Third, too little job control should be related to a restricted social environment (e.g., less choice to work with people one likes or avoid people one does not prefer to work with). Even when one is not completely free to choose their co-workers, job control can empower employees to organize things in a way that they can increase positive and decrease negative social interactions (Fernet et al., 2013; Spreitzer et al., 2005; Trépanier et al., 2015). Hence, low levels of job control should be a frustration to the need for relatedness at work.

Curvilinear influences of job control on psychological needs frustration at work

Although previous research has found beneficial effects of job control, some studies suggest that the effects may not always be strictly linear. Recently, there have been compelling calls for deeper explorations of curvilinear effects of job control (see Meyer et al., 2021), because previous research typically finds only small (to modest) or even negative linear effects (e.g., Bipp & Walczok, 2024; for a review, see Häusser et al., 2010). In line with the vitamin model (Warr, 1990), positive job characteristics should be beneficial up to a certain point, but there should be drawbacks if they exceed a certain (individual) threshold. Similar to vitamin intake, too much job control should be harmful if the optimal level is exceeded (e.g., Baltes et al., 2002; Chung-Yan, 2010; Kubicek et al., 2014; Shahzad, 2022; Stiglbauer & Kovacs, 2018). This perspective is corroborated by studies exploring the “too-much-of-a-good-thing” phenomenon, where factors such as too much job control are expected to negatively impact well-being (Grant & Schwartz, 2011; Kubicek et al., 2021).

While previous research has already explored the effects of too much job control on well-being (cf. Meyer et al., 2021), we predict that these curvilinear effects should also be evident with respect to psychological needs. If levels of job control are experienced as too high by an individual, they may pose a

threat to psychological needs at work, because they undermine self-determined planning and execution of work tasks in a manner similar to low levels of job control. For instance, while too low levels of job control should lead to a perceived inability to make decisions, the experience of too high values can lead to feelings of being *forced* to make many decisions (Schwartz, 2015). Similarly, too much job control should be a threat to the need for competence at work. A high amount of decision-making is often related to the experience of uncertainty and post-decisional regret (Schwartz, 2015). This can reduce confidence and decrease employees' feelings of being capable and self-efficacious. Furthermore, because information overload is overwhelming, people may cope with it in ways that undermine collaboration and teamwork (e.g., negative stress-related reactions; fewer helping behaviours and an increased focus on their own obligations; increased likelihood of conflict, particularly if others are affected by the decisions). This should lead to decreased team cohesion in the workplace (e.g., Gajendran & Harrison, 2007; Golden & Veiga, 2005).

Past research has demonstrated the complexity of identifying curvilinear effects, prompting scholars to develop alternative measurement approaches. In particular, studies have highlighted the benefits of using scales that assess both insufficient and excessive levels of a given variable (Vergauwe et al., 2017). For example, Pindek et al. (2022) employed such a balanced measure to evaluate workload, using a scale where the midpoint represented an optimal level, while values on either end indicated non-optimal levels. Compared to traditional unipolar scales, these balanced scales offer a more nuanced assessment of extreme values in job characteristics—such as job control in our study. Specifically, while the lower end of the scale captures the effects of insufficient job control, the upper end differentiates between beneficial levels and those that lead to overload (cf. Pindek et al., 2022). In contrast to typical Likert-scale measures, which, while often used to measure ‘objective’ job characteristics, still reflect individual perceptions (Donaldson & Grant-Vallone, 2002), our conceptualization of job control explicitly places a stronger emphasis on subjective appraisals. Of course, these appraisals covary along the actual level of job control, but they are also shaped by individual capabilities, abilities, expectations or cognitive styles. For example, individuals who lack the decision-making capabilities needed to make use of high levels of control may perceive it as “too high”, whereas others with effective decision-making skills may interpret the same level as empowering and rate it as “optimal” (Abdel Hadi et al., 2025; Parker et al., 2009). Thus, high levels of job control might not be inherently detrimental; rather, it is the individual perception of job control as “too low” or “too high” that may pose a risk factor for feelings of inadequacy. Consistent with our hypothesis that deviations from optimal job control have negative consequences, we developed a measure that reflects non-optimal job control at both extremes, with the midpoint representing an optimal balance. We thereby follow a call by Zhou (2020), who recommended the use of bipolar measurements in the context of curvilinear assumptions about job control. Building on previous research and theorizing, we put forward the following hypothesis:

Hypothesis 1. Job control has a curvilinear relationship with psychological need frustration at work: Too low and too high levels of job control are positively related to psychological need frustration at work while optimal job control is negatively related to psychological need frustration at work (H1a: autonomy needs; H1b: competence needs; H1c: relatedness needs).

Extended influences on context-free psychological needs satisfaction

The relevance of the relationship between job control and psychological needs at work becomes even more important in light of research showing that the effects should not be limited to the work context but also unfold on a more general—context-free—level (e.g., Abdel Hadi et al., 2022; MacDonald, 1991). Research shows that there is a strong connection between feelings of (dis-)satisfaction across life domains: feeling satisfied at work is related to more general life satisfaction (e.g., Cho & Tay, 2016; Judge & Watanabe, 1993; Unanue et al., 2017). Theoretically, such spillover can be explained based on role theories: Katz and Kahn (1978) introduced the concept of partial inclusion, which refers to the idea

that individuals belong to multiple (open) systems/groups (e.g., organizations, communities, families) simultaneously, and that experiences in one system/group are dynamically influenced (and included) by the roles and experiences in other systems (see Rain et al., 1991, for a comprehensive review). Hence, spillover occurs when experiences or behaviours from one role extend to another. This can be explained by various processes, such as emotion contagion or the depletion of resources (Edwards & Rothbard, 2000; Greenhaus & Beutell, 1985).

Researchers in the field of SDT (Deci & Ryan, 2000) claimed that psychological needs are, by definition, universal experiences, and therefore, threats to the needs for autonomy, competence, and relatedness at work should also have implications for general experiences of psychological needs (Biron et al., 2023). Consequently, there should be a spillover of need experiences at work to the non-work context. Based on theorizing on need exchange processes between work and leisure (de Bloom et al., 2020), some research has already analysed dependencies between domain-specific needs and related experiences across the work and non-work domains. These studies further support the assumption that domain-specific needs should not be seen as being completely separate from each other, and that (negative and positive) spillover from one domain to the other is likely. For instance, Milyavskaya and Koestner (2011) found evidence for the assumption that psychological needs were predictive for motivation and well-being across different life domains. Similar findings come from two studies that assessed spillover effects of needs on general well-being outcomes across contexts (Baumann & Wilson, 2024; Milyavskaya et al., 2009; Véronneau et al., 2005). Especially the frustration at work likely impedes need fulfilment in other life domains (Deci & Ryan, 2008). This highlights the importance of assessing spillover when researching psychological needs.

We conclude that a more holistic perspective on how too little as well as too much job control can affect psychological needs within and beyond work is fruitful to better understand employee experiences that are related to well-being and performance. In particular, the frustration of a psychological need occurring in one domain (e.g., at work) should be a fundamental and negative experience (Deci & Ryan, 2008; Van den Broeck et al., 2010) that has consequences within and beyond specific contexts. Thus, we derive the following hypothesis:

Hypothesis 2. Too low and too high levels of job control are related to decreased context-free psychological need satisfaction while optimal job control is positively related to it, through psychological need frustration at work. Too low and too high job control are positively related to psychological need frustration at work, and these, in turn, are negatively related to context-free psychological need satisfaction (H2a: autonomy needs; H2b: competence needs; H2c: relatedness needs).

The mitigating role of leisure crafting

Although we expect a spillover of work-related need frustration to a more general context-free need satisfaction, jobholders are not passive in this process. The literature on proactive behaviours, such as crafting, provides a helpful account for understanding how they can manage these influences across life boundaries (Napier et al., 2024). Specifically, researchers argue that leisure crafting is an effective strategy to satisfy psychological needs (Petrou & Bakker, 2016). Leisure crafting entails committed leisure activities with a particular focus on challenge, growth, and socializing. It has been found to be negatively related to emotional exhaustion (Abdel Hadi et al., 2021; Chen, 2023), and positively related to meaning making (Petrou et al., 2017) and beneficial work-related outcomes (Hamrick et al., 2023).

More importantly, it has been found that leisure crafting can be a strategy used by employees to deal with negative experiences at work, for example, high job demands (i.e., Hamrick, 2022; Petrou & Bakker, 2016) or the inability to grow via one's job (Petrou et al., 2017). We argue that employees should also be able to buffer the negative consequences of frustrated needs at work on experiences outside the work setting through leisure crafting (Berg et al., 2010; de Bloom et al., 2020). In particular, we predict that leisure crafting should prevent the negative impact of frustrated needs at work from spreading

across life boundaries. When leisure crafting is high, the impact of work-related need frustration on context-free need satisfaction is reduced.

To support this assumption, we draw on the identity-based integrative needs model of crafting by de Bloom et al. (2020) emphasizing two key ideas: (1) individuals are motivated to craft when they perceive discrepancies between their current and ideal levels of need fulfilment and (2) crafting efforts in one domain can compensate for unmet needs in another domain. Our study applies a broad conceptualization of leisure crafting as an approach that should be particularly relevant in cases where basic needs are frustrated in the work domain and may otherwise spill over into non-work life. In this context, leisure crafting serves as a cross-domain regulatory strategy that may buffer negative spillover effects and protect overall psychological functioning (Petrou et al., 2024). Regarding the need for autonomy, leisure crafting should help employees compensate for the negative influences of need frustration at work (due to suboptimal control) on the need for autonomy during leisure time (Mojza et al., 2011). This is because leisure crafting is related to non-work activities that provide opportunities to feel in charge, an essential aspect for employees who lack job control (see above). The continued engagement in hobbies like painting, writing, or sports allows individuals to set their own goals, make decisions, and direct their efforts in ways they choose. Following this line of reasoning, leisure crafting should be particularly beneficial to the lives of individuals who experience frustrated autonomy needs at work because of an unfavourable level of autonomy (Berg et al., 2010).

With respect to the need for competence, employees who experience frustration with their competence needs at work should also be able to prevent the spread of this lack of experience in self-efficacy across life domains by crafted leisure activities (Adams & Stone, 1977). Crafted leisure activities can offer opportunities to create feelings of professional efficacy because they include elements of challenge, learning, and growth, which are closely linked to the attainment of work-related goals (Hamrick, 2022; Petrou et al., 2024; Wang et al., 2023), again diminishing the relative impact of the work domain. For example, activities such as learning a new language, mastering a musical instrument, or participating in an improv theatre group can provide measurable progress and personal achievements. These accomplishments not only reinforce a sense of competence per se but also immunize against the frustration of competence needs that employees experience in their professional roles. In other words, frustrated competence at work has fewer reasons to impair context-free competence because people already experience a competent life outside work (i.e., during their leisure time).

Finally, because leisure crafting includes a social component, it should suppress the spread of frustrated relatedness needs at work on non-work experiences. Leisure crafting helps employees create positive social experiences outside work, diminishing the relative negative impact of the work domain regarding low social inclusion and relatedness. Crafted social activities, like joining a sports group, foster connections and interactions (Jones, 2022; Petrou et al., 2017). Engaging in such social leisure activities can thus mitigate the adverse effects of poor social dynamics or inadequate interpersonal relationships at work due to too little/too much job control. This leads us to formulate the following hypothesis:

Hypothesis 3. The mediation effect proposed in Hypothesis 2, with job control being related to need frustration at work, which in turn is related to context-free need satisfaction, is moderated by leisure crafting. The relationship between frustrated needs at work and context-free needs satisfaction (H3a: autonomy needs; H3b: competence needs; H3c: relatedness needs) is weaker when leisure crafting increases (second-stage moderated mediation).

METHODS

Openness and transparency

For this study, we describe our sampling plan, data exclusions, and all measures used. Additional materials, including measures and data, are available on the Open Science Framework (OSF) and can be accessed at the following link: https://osf.io/b9kef/?view_only=f58a6c8457b14803aad732c9f1ba0e2e

(Etgen et al., 2024). Analytic codes and other supplementary materials for the study are available upon request. Please note that we did not pre-register our hypotheses for this study.

Participants and procedure

We initially recruited 352 employees through the online panel provider Prolific to participate in our study. Inclusion criteria were (1) being at least 18 years of age, (2) residency in the United Kingdom, and (3) being employed (full-time) for at least 35 h per week. All participants received financial compensation based on the number of completed surveys (maximum amount: £6 [equal to about \$7.65]). Eventually, 249 participants took part in all four measurement waves (71%). One participant was excluded prior to data analysis because of repeatedly failed attention checks across different waves of measurement. Thus, the final sample consisted of 248 employees ($M_{\text{age}} = 39.94$ years, $SD = 11.22$) with 48.4% identifying as women (120 participants), 51.2% as men (127 participants), and one participant as non-binary. Attrition was assessed across the four waves. We tested for differences between participants who answered all four surveys and those who dropped out during the course of the study (103 participants; Goodman & Blum, 1996). Attrition analyses indicated that participants who dropped out did not significantly differ from those who remained in terms of gender, baseline job control, psychological need satisfaction and frustration, or leisure crafting ($ps > .05$). However, those who dropped out were significantly younger ($M = 35.46$ years, $SD = 8.98$) than participants who remained in the study ($M = 39.94$ years, $SD = 11.22$), $t(350) = 3.65, p < .001$. To examine the mechanism underlying the missing data, we conducted Little's missing completely at random (MCAR) test including demographic variables (age, gender, working hours) as well as the study variables (need frustration, need satisfaction, and leisure crafting). The test was non-significant, $\chi^2(74) = 84.07, p = .198$, indicating that the data were MCAR. Thus, systematic nonresponse bias seems unlikely. The mean working hours per week were 42.54 ($SD = 15.85$). Most of the participants indicated that their job can be best described as an office job (178 participants), while 33 participants indicated that they worked in a care job (e.g., healthcare), 28 participants reported working in a (customer) service job, and nine participants indicated being a production or logistics worker. The study received ethical approval from the local ethics committee of Justus-Liebig-University (approval number: 2023-0001) and participants gave informed consent.

Participants were recruited for a longitudinal study consisting of four surveys over the course of 6 weeks, with 2-week intervals between consecutive surveys. Following Dormann and Griffin's (2015) recommendations on optimal time lags in panel studies, the 2-week interval was selected to align with the expected temporal dynamics of the focal processes. Job control, need fulfilment, and leisure crafting represent psychological constructs that can fluctuate meaningfully over short time spans, yet are sufficiently stable to exhibit lagged effects within a few weeks. Hence, a 6-week lag is likely to capture the indirect relationship between job control and psychological needs outside of work, with 2-week intervals to capture the processes that explain the indirect relationship, as well as the moderating role of leisure crafting, without under- or overestimating temporal effects. All surveys were administered online via SoSci Survey (Leiner, 2023) and distributed on Fridays, remaining accessible until Sunday of the same week.

Measures

Job control (Time 1)

To measure¹ job control, we used an adapted measure based on six items from the Work Design Questionnaire by Morgeson and Humphrey (2006). All items were adapted to measure optimal (rather

¹A full overview of our measures is presented on OSF (link below).

than absolute) levels of job control, as was done by Stiglbauer and Kovacs (2018). Each item describes two contrasting experiences of job control that represent the extremes of our scale (sample item: “My job did not allow me to make any decisions on what methods I use to complete my work” [1] to “...too many decisions to make on what methods I use to complete my work” [5]; mean omega = .85). Participants were asked to use a bipolar 5-point continuum to choose the level of job control that they experienced at work within the last 2 weeks. They were instructed that the midpoint of the scale (3) reflected the “optimal” or desired amount of job control, whereas lower scores reflected “too little” and higher scores “too much” job control. This measure is designed to better capture the full spectrum of job control, including perceptions of exceptionally low and high values, alongside optimal (medium) levels (Pindek et al., 2022).

Work-related need frustration (Time 2)

To measure work-related need frustration, we used a measure by Olafsen et al. (2021) with four items per subscale. All items referred to the last 2 weeks. We measured autonomy need frustration (sample item: ‘Most of the things I did at work, I did because I felt that I have to’; mean omega = .82), competence need frustration (sample item: ‘I seriously doubted whether I can do things well at work’; mean alpha = .89) and relatedness need frustration (sample item: ‘I felt excluded from the group at work that I wanted to be a part of’; mean alpha = .87). Participants could rate each item on a scale with response categories ranging from 1 = not at all to 5 = very much.

Context-free need satisfaction (Time 4)

To measure context-free need satisfaction, we used a measure by Sheldon et al. (2001) with three items per subscale. All items referred to the last 2 weeks. We measured autonomy need satisfaction (sample item: ‘I felt free to do things my own way’; mean omega = .85), competence need satisfaction (sample item: ‘I felt very capable of what I did’; mean omega = .81) and relatedness need satisfaction (sample item: ‘I felt close and connected with other people who are important to me’; mean omega = .92). Participants could rate each item on a scale with response categories ranging from 1 = not at all to 5 = very much.

Leisure crafting (Time 3)

To measure leisure crafting, we used a measure by Petrou and Bakker (2016) consisting of nine items (sample item: ‘I tried to increase my learning experiences through leisure activities’; mean omega = .96). Although the items were originally developed based on the three BPNS of autonomy, competence, and relatedness, Petrou and Bakker (2016) demonstrated that they load on a single factor representing overall leisure crafting. Consistent with this conceptualization and prior research, we therefore treated leisure crafting as a unidimensional construct. All items referred to the last 2 weeks. Participants could rate each item on a scale with response categories ranging from 1 = not at all to 5 = very much.

Job crafting (Time 3) as a control variable

Previous research has demonstrated the importance of job crafting for psychological needs (Van Wingerden et al., 2017). While prior research has linked job characteristics to psychological needs (e.g., Rudolph et al., 2017; Tušl et al., 2024), less is known about how employees proactively cope with need frustration outside work. By examining leisure crafting as a second-stage moderator, we

aim to expand cross-domain research and underscore the role of leisure in supporting psychological needs. However, we decided to measure job crafting in addition to leisure crafting to add it as a control variable to the models. To measure job crafting (subscale: task crafting), we used a measure by Niessen et al. (2016) consisting of three items (sample item: ‘So that the job I was doing suited me, I concentrated on specific tasks’. Mean $\omega = .70$). All items referred to the last 2 weeks. Participants could rate each item on a scale with response categories ranging from 1 = not at all to 5 = very much.

Analytic approach

To test our hypotheses, we used path analysis in MPlus 8.8 (Muthén & Muthén, 1998–2017). The standard maximum likelihood (ML) estimator was used to calculate the model estimates.

Direct and indirect effects

To test Hypotheses 1 and 2, we built Model 1, which included the paths between job control (curvilinear and linear) at Time 1 and the three facets of work-related need frustration at Time 2 (autonomy, competence and relatedness), as well as the paths between job control and the three subfacets of context-free need satisfaction at Time 4.² We also included the paths between the work-related need frustration facets (Time 2) and the context-free need satisfaction facets (Time 4). To test the indirect effects hypotheses depicted in H2, we calculated *instantaneous* indirect effects, referring to the indirect effect at a certain value (*low* and *high*) of the predictor variable job control (Hayes & Preacher, 2010; Stride et al., 2015). More specifically, we tested the indirect effect by calculating the (instantaneous) indirect effect of job control on context-free needs satisfaction on values of job control that represent *relatively low job control* and *relatively high job control*. Following the recommendations by Hayes and Preacher (2010), plus and minus one standard deviation from the sample mean was used as low job control and high job control. Hayes and Preacher (2010) suggest this so-called “representative values” strategy to test for indirect effects with curvilinear paths because the commonly used interaction approaches (the product of the single paths *ab*) would lead to biased estimates. Therefore, instantaneous indirect effects were introduced to quantify the change in the predictor (in our case, job control) through the mediator (needs frustration at work) as the predictor variable changes by one unit at a specific value. To control for construct stability in all outcome variables, we added the respective baseline autocorrelations as predictors of need frustration (autonomy, competence, and relatedness) and need satisfaction (autonomy, competence, and relatedness) (Dormann & Griffin, 2015). For reasons of parsimony and generalizability of our findings, and due to the lack of specific theoretical assumptions, we refrained from including additional control variables in our model. However, exploratory analyses that included various sociodemographic variables, such as age and gender, did not alter the interpretation of our findings. Beyond the path models, we followed up with segmented regressions for the relationships between curvilinear job control and need frustration at work. Testing a U-shaped relationship between job control and needs frustration, as predicted in our conceptual model using quadratic regression coefficients, has important limitations. Depending on the actual shape of the tested relationship, the interpretation of quadratic effects can produce false positive effects (Simonsohn, 2018). To determine whether the quadratic relationship was in fact U-shaped, we conducted follow-up segmented regressions using the R package *segmented* (Muggeo, 2008). In segmented (i.e., piecewise or interrupted) regression, the slope of the regression line changes after a breakpoint (i.e., a particular value of job control), which implies that the regression function has different parameters in different segments of the predictor variable job control

²All constructs were measured at all measurement waves. For the analyses we used job control at T1, work-related need frustration at T2, leisure crafting at T3, and context-free need satisfaction at T4. This was done to (a) reduce the danger of common method variance (cf. Podsakoff et al., 2003), and (b) to account for the temporal order of events as predicted in our conceptual model.

(Vergauwe et al., 2017). In segmented regression, a U-shaped relationship would be evidenced by two significant (linear) regression lines with a change in sign (in other words, a negative relationship between job control and need frustration for low levels of job control and a positive relationship between job control and need frustration for high levels of job control). Iterative computational algorithms were employed (also using the R package *segmented*) to estimate the breakpoint where the parameters are most likely to diverge (Muggeo, 2008).

(Second-stage) conditional indirect effects

We proceeded with Model 2 to test the moderating role of leisure crafting (Hypothesis 3). We added the direct paths between leisure crafting (Time 3) and all facets of context-free need satisfaction (autonomy, competence, and relatedness), as well as the interaction terms between leisure crafting and all facets of work-related need frustration. Similar to the mediation terms, we calculated conditional *instantaneous* indirect effects of curvilinear job control (low: -1 SD, high: $+1$ SD) on context-free need satisfaction through work-related need frustration under different values of leisure crafting (low: -1 SD, high: $+1$ SD). We also added job crafting as a predictor of need frustration at work and context-free need satisfaction to check the robustness of our conclusions. Moderated mediation terms were calculated again based on the bootstrap method with 5000 samples (Stride et al., 2015).

RESULTS

Factorial structure

We first tested whether the study variables were distinct from each other and whether the measurement was not biased by common method variance (Podsakoff et al., 2003). A series of confirmatory factor analyses was conducted to test the appropriateness of our latent factor structure. Our proposed model (measurement model 1) included the following nine variables: (1) job control (Time 1), (2) all three subfacets of work need frustration (i.e., work autonomy need frustration, work competence need frustration, work relatedness need frustration; Time 2), (3) all three subfacets of context-free need satisfaction scales (i.e., autonomy need satisfaction, competence need satisfaction, relatedness need satisfaction; Time 4), (4) leisure crafting (Time 3), and (5) job crafting (Time 3). This model showed a good fit to the data: $\chi^2 = 1081.67$, $df = 666$, $p < .001$, root mean square error of approximation (RMSEA) = .042, 95% CI = [.037, .047], comparative fit index (CFI) = .936, standardized root mean square residual (SRMR) = .051. Furthermore, this model was superior to all other models that we tested, for example, a five-factor model (measurement model 2) comprising (1) job control, (2) mean work need frustration, (3) mean context-free need satisfaction, (4) leisure crafting, (5) job crafting; a four-factor model (measurement Model 3) comprising (1) job control, (2) mean work need frustration, (3) mean context-free need satisfaction, (4) (job and leisure) crafting; a one-factor model (all Satorra-Bentler $\Delta\chi^2 > 138.07$, $\Delta df > 8$, $p < .001$).

Descriptive analyses

In this study, we used a bipolar measure of job control in which the midpoint of the scale (3) represented the “optimal” or desired level of job control, while lower scores indicated “too little” and higher scores “too much” job control. Consistent with previous research, this approach is intended to enhance the detection of curvilinear effects, rather than assuming linearity (Pindek et al., 2022; Stiglbauer & Kovacs, 2018). Descriptive statistics support the utility of this bipolar scale. The measure demonstrated a broad range of responses (min = 1.33, max = 5.00) and an approximately symmetric distribution

(skewness = .13; kurtosis = .45). This suggests that participants meaningfully engaged with the full continuum of perceived job control rather than anchoring around the midpoint. The moderate variability (SD = .65) further supports the scale's sensitivity to individual differences.

Hypotheses tests

Means, standard deviations, and correlations are presented in Table 1; results of the path estimates are presented in Table 2 and Figure 1; the indirect effects and conditional indirect effects (see below for further details) are shown in Tables 3 and 4. We found that our model for hypothesis testing fits the data: $\chi^2 = 15.91$, $df = 12$, $p < .001$, root mean square error of approximation (RMSEA) = .08, 95% CI = [.04, .11], comparative fit index (CFI) = .961, standardized root mean square residual (SRMR) = .06.

Hypothesis 1 proposed a curvilinear relationship between job control (Time 1) and psychological need frustration at work (autonomy, competence, and relatedness need frustration; Time 2). The predicted curvilinear relationship of job control was positive and significant for autonomy need frustration at work ($\gamma = .23$, $SE = .08$, $p = .003$), competence need frustration at work ($\gamma = .24$, $SE = .08$, $p = .002$), and relatedness need frustration at work ($\gamma = .18$, $SE = .08$, $p = .016$).

To provide further evidence that this curvilinear relationship is consistent with the prediction of a U-shaped relationship, we followed up on our results using segmented regression (Muggeo, 2008). As stated above, segmented regression involves dividing the data into two groups based on the predictor variable, in this case, curvilinear job control, to predict the outcome (in this case, work-related need frustration). One regression line is then calculated for the lower half of job control values, and another for the upper half. If these two slopes have significant and opposite values, this supports a U-shaped relationship. In this context, a negative significant result for the regression line of low levels of job control predicting work-related need frustration, and a positive significant result for the regression line of high levels of job control predicting work-related need frustration would indicate the U-shaped relationship predicted. The results of segmented regression confirmed that for low values of job control and its relationship with autonomy need frustration at work (break point: 13.44), the regression line was negative and statistically significant ($\gamma = -.04$, $SE = .02$, $p = .015$); at the same time, for the high values of job control, the regression line was positive and statistically significant ($\gamma = .10$, $SE = .03$, $p = .034$). Concerning competence needs (break point: 14.69), we did not find the significant hypothesized relationship between low levels of job control and need frustration at work ($\gamma = -.01$, $SE = .01$, $p = .519$), but a positive relationship between high job control and competence need frustration ($\gamma = .12$, $SE = .02$, $p = .036$). For relatedness need frustration at work, we found that the regression lines (break point: 10.43) were neither statistically significant for low values of job control ($\gamma = -.03$, $SE = .03$, $p = .382$) nor for high values of job control ($\gamma = .04$, $SE = .04$, $p = .273$).

Consequently, based on the quadratic terms as well as on the two-lines test, Hypothesis 1 was fully supported for autonomy needs. With regard to competence needs, the segmented regression analysis suggests that the quadratic effect is primarily driven by a more pronounced positive association between high levels of job control and competence need frustration, which flattens at lower levels of job control, rather than reflecting a strictly U-shaped relationship (partially supporting Hypothesis 1). For relatedness needs, however, the two-lines test did not corroborate the quadratic effect identified in the regression analysis. Although the estimates pointed in the theoretically expected directions (a negative slope for low job control and a positive slope for high job control), both effects remained statistically non-significant.

Hypothesis 2 predicted negative indirect effects of quadratic job control (Time 1) on context-free psychological need satisfaction (Time 4) at low and high levels of job control via work-related psychological need frustration (Time 2), respectively. We calculated the *instantaneous* indirect effects of job control on context-free need satisfaction through need frustration at work at different values of job control (low [-1 SD] and high [$+1$ SD] job control). In line with Hypothesis 2, we found that the relationships presented with regard to Hypothesis 1 further extended to context-free psychological need satisfaction

TABLE 1 Means, standard deviations, and zero-order correlations of all study variables.

	<i>M</i>	<i>SD</i>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Job Control (T1)	3.26	.63	—								
(2) Job Control ² (T1)	11.04	4.19	.99***	—							
(3) Autonomy Frus. (T2)	3.19	.92	-.04	-.01	—						
(4) Competence Frus. (T2)	2.07	1.02	.09	.11	.42***	—					
(5) Relatedness Frus. (T2)	1.89	.92	-.07	-.04	.38***	.60***	—				
(6) Autonomy Sat. (T4)	3.59	.88	.14*	.13*	-.38***	-.25***	-.30***	—			
(7) Competence Sat. (T4)	3.70	.85	-.01	-.01	-.24***	-.41***	-.27***	.47***	—		
(8) Relatedness Sat. (T4)	3.73	1.03	.04	-.04	-.21**	-.22***	-.31***	.53***	.38***	—	
(9) Leisure crafting (T3)	2.87	1.11	-.01	.01	-.03	-.02	.08	.17**	.09	.13*	—
(10) Job crafting (T3)	3.20	.68	.07	.07	-.22***	-.14*	-.07	.34***	.43***	.23***	.25***

Abbreviations: Frus., frustration; Sat., satisfaction.

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

TABLE 2 Results of our path analyses.

	Autonomy Frus., y (SE)	Competence Frus., y (SE)	Relatedness Frus., y (SE)	Autonomy sat., y (SE)	Competence sat., y (SE)	Relatedness sat., y (SE)
Model 1						
Job Control	-1.49 (.51)**	-1.48 (.50)**	-1.23 (.50)*	.22 (.53)	-.37 (.52)	-.34 (.56)
Job Control ²	.23 (.08)**	.24 (.08)**	.18 (.08)*	-.02 (.08)	.05 (.08)	.04 (.08)
Autonomy Frus.				-.24 (.05)***		
Competence Frus.					-.22 (.04)***	
Relatedness Frus.						-.16 (.05)***
Model 2						
Job Control	-1.49 (.51)**	-1.48 (.50)**	-1.23 (.51)*	.29 (.52)	-.30 (.51)	-.19 (.55)
Job Control ²	.23 (.08)**	.24 (.08)**	.18 (.08)*	-.03 (.08)	.04 (.08)	.02 (.08)
Autonomy Frus.				-.40 (.11)***		
Competence Frus.					-.42 (.11)***	
Relatedness Frus.						-.44 (.15)**
Leisure Crafting				-.07 (.13)	-.11 (.08)	-.08 (.09)
Leisure Crafting × Autonomy Frus.				.06 (.04)		
Leisure Crafting × Competence Frus.					.07 (.03)*	
Leisure Crafting × Relatedness Frus.						.09 (.05)*
Job Crafting	-.21 (.07)**	-.22 (.08)**	-.13 (.07)	.23 (.65)***	.31 (.62)***	.09 (.08)
Total R2 (Model 1)	.41 (.05)***	.54 (.04)***	.43 (.27)***	.27 (.05)***	.31 (.46)***	.40 (.05)***
ΔR2 (Model 1–Model 2)				.08*	.08*	.08*

Note: Job Control=T1; Need Frustration (Work)=T2; Need Satisfaction (Context-Free)=T4; Leisure Crafting=T3.

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

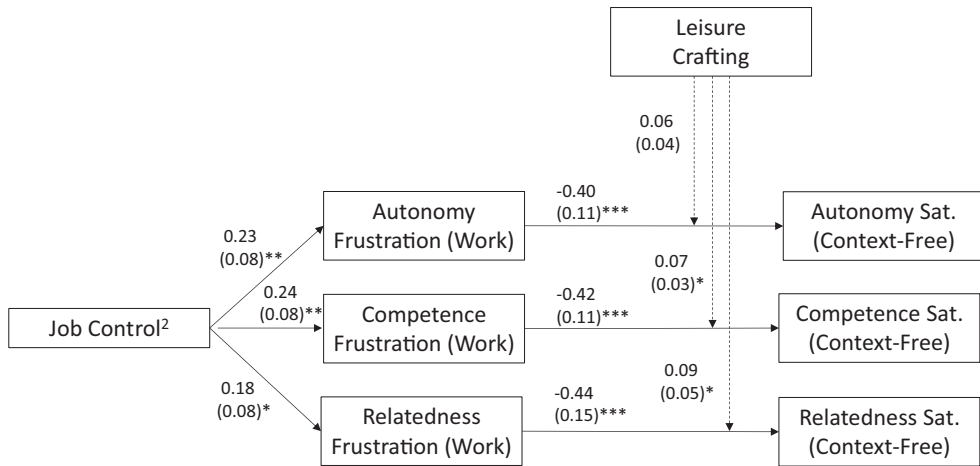


FIGURE 1 Results of our path model 2. Dotted lines represent interaction effects; Sat. = satisfaction, job control (squared) = Time 1, need frustration (work) = Time 2, leisure crafting = Time 3, need satisfaction (context-free) = Time 4; $N = 248$.

TABLE 3 (Unconditional) indirect effects in (Model 1).

Model paths	γ	95% CI
Job Control ² (low) \rightarrow Autonomy Frustration \rightarrow Autonomy Satisfaction	.07	[.01, .14]
Job Control ² (high) \rightarrow Autonomy Frustration \rightarrow Autonomy Satisfaction	-.07	[-.12, -.01]
Job Control ² (low) \rightarrow Competence Frustration \rightarrow Competence Satisfaction	.05	[-.00, .11]
Job Control ² (high) \rightarrow Competence Frustration \rightarrow Competence Satisfaction	-.07	[-.13, -.02]
Job Control ² (low) \rightarrow Relatedness Frustration \rightarrow Relatedness Satisfaction	.04	[-.01, .09]
Job Control ² (high) \rightarrow Relatedness Frustration \rightarrow Relatedness Satisfaction	-.03	[-.07, .10]

Note: Low = -1 SD; high = +1 SD; Job Control² = Time 1; Need Frustration (Work) = Time 2; Need Satisfaction (Context-Free) = Time 4; bold significance values are indicated by 95% CIs (two-sided) not including zero; $N = 248$.

for autonomy and competence needs, as we discovered that quadratic job control was negatively related to context-free autonomy need satisfaction (indirect effect = $-.07$, 95% CI $[-.12, -.01]$) and context-free competence need satisfaction (indirect effect = $-.07$, 95% CI $[-.13, -.02]$) through work-related psychological need frustration at high levels of job control. We also found an indirect positive effect at low levels of job control on context-free autonomy need satisfaction (indirect effect = $.07$, 95% CI $[.01, .14]$), but in agreement with the two lines test for the H1-predicted relationship, not on competence need satisfaction (indirect effect = $.05$, 95% CI $[-.00, .11]$) via need frustration at work. With regard to relatedness needs, we found no support for Hypothesis 2, as neither at low levels of job control (indirect effect = $.04$, 95% CI $[-.01, .09]$) nor at high levels of job control (indirect effect = $-.03$, 95% CI $[-.07, .10]$) was there a relationship through relatedness frustration at work. Overall, these results suggest that more extreme levels of job control (too low or too high) were associated with decreased context-free need satisfaction (most notably for autonomy needs at too low and too high levels, and for competence needs at too high levels) via increased need frustration. This pattern of findings partly supports Hypothesis 2 (see Table 3; see Table 2 for the significant relationships between need frustration at work [Time 2] and context-free need satisfaction [Time 4]).

Hypothesis 3 focused on a (stage 2) moderation effect of leisure crafting (Time 3) on the indirect effect of job control (Time 1) on context-free psychological need satisfaction (Time 4) through work-related need frustration (Time 2). We estimated the conditional indirect relationship between (curvilinear) job control and context-free need satisfaction via need frustration at work by calculating the

TABLE 4 Conditional indirect effects of Job Control² on context-free needs satisfaction via work needs frustration depending on Leisure Crafting (Model 2).

Job Control	Leisure Crafting	Model paths	γ	95% CI
Low	Low	Job Control ² (low) → Autonomy Frustration × Leisure Crafting (low) → Autonomy Satisfaction	.09	[.01, .17]
	High	Job Control ² (low) → Autonomy Frustration × Leisure Crafting (high) → Autonomy Satisfaction	.05	[-.01, .11]
High	Low	Job Control ² (high) → Autonomy Frustration × Leisure Crafting (low) → Autonomy Satisfaction	-.08	[-.15, -.01]
	High	Job Control ² (high) → Autonomy Frustration × Leisure Crafting (high) → Autonomy Satisfaction	-.05	[-.10, .01]
Low	Low	Job Control ² (low) → Competence Frustration × Leisure Crafting (low) → Competence Satisfaction	.07	[-.01, .15]
	High	Job Control ² (low) → Competence Frustration × Leisure Crafting (high) → Competence Satisfaction	.03	[-.10, .08]
High	Low	Job Control ² (high) → Competence Frustration × Leisure Crafting (low) → Competence Satisfaction	-.10	[-.17, -.03]
	High	Job Control ² (high) → Competence Frustration × Leisure Crafting (high) → Competence Satisfaction	-.05	[-.10, .00]
Low	Low	Job Control ² (low) → Relatedness Frustration × Leisure Crafting (low) → Relatedness Satisfaction	.08	[-.01, .16]
	High	Job Control ² (low) → Relatedness Frustration × Leisure Crafting (high) → Relatedness Satisfaction	.02	[-.02, .06]
High	Low	Job Control ² (high) → Relatedness Frustration × Leisure Crafting (low) → Relatedness Satisfaction	-.05	[-.12, .02]
	High	Job Control ² (high) → Relatedness Frustration × Leisure Crafting (high) → Relatedness Satisfaction	-.01	[-.04, .02]

Note: Low = -1 SD; high = +1 SD; Job Control² = T1; Need Frustration (Work) = T2; Leisure Crafting = T3; Need Satisfaction (Context-Free) = T4; bold significance values are indicated by 95% CIs (two-sided) not including zero; N = 248.

instantaneous relationship between job control (at low and high levels of job control) and context-free need satisfaction through need frustration at work under different values of leisure crafting (low: -1 SD; high: +1 SD). In fact, the indirect relationship between high and low levels of job control and context-free psychological needs via work-related need frustration was buffered for autonomy and competence need satisfaction by leisure crafting, but not for relatedness needs. In the following, we decompose the moderated mediation accounting for leisure crafting as a moderator of the relationship between work-related need frustration (mediator) and context-free need satisfaction (outcome) at different levels of curvilinear job control (predictor).

For autonomy needs, we found that leisure crafting buffered the detrimental influences of job control at too low and at too high levels on context-free autonomy need satisfaction. We found that the positive relationship between low levels of job control (-1 SD) and autonomy need satisfaction via autonomy need frustration was evident *at low levels of leisure crafting* = .09, 95% CI [.01, .17] but not *at high levels of leisure crafting* = .05, 95% CI [-.01, .11]. Similarly, we found a negative indirect relationship between high levels of job control (+1 SD) and context-free need satisfaction via need frustration for autonomy satisfaction *at low levels of leisure crafting* = -.08, 95% CI [-.15, -.01], but not *at high levels of leisure crafting* = -.05, 95% CI [-.10, .01].

For competence needs, we found a significant two-stage moderation of leisure crafting for the relationship between too high job control (+1 SD) and context-free competence need satisfaction (the outcome) via work-related competence need frustration (the mediator), but not at too low levels of job control. Too low job control was unrelated to competence need satisfaction *at low levels of leisure*

crafting = .07, 95% CI [-.01, .15], and *at high levels of leisure crafting* = .03, 95% CI [-.10, .08]. In contrast, the relationship between too high job control and competence need satisfaction through competence need frustration was only evident *at low levels of leisure crafting* = -.10, 95% CI [-.17, -.03], and not *at high levels of leisure crafting* = -.05, 95% CI [-.10, .00].

For relatedness needs, we found no significant second-stage moderation of leisure crafting for the relationship between too low job control (-1 SD) and too high job control (+1 SD) and context-free relatedness need satisfaction (the outcome) via work-related relatedness need frustration (the mediator). We found no relationship between low job control and context-free relatedness satisfaction via relatedness frustration at work *at low levels of leisure crafting* = .08, 95% CI [-.01, .16] and *at high levels of leisure crafting* = .02, 95% CI [-.02, .06]. In line with this, the proposed negative relationship with high job control and relatedness need satisfaction via relatedness need frustration was not evident *at low levels of leisure crafting* = -.05, 95% CI [-.12, .02] and not *at high levels of leisure crafting* = .01, 95% CI [-.04, .02].

To sum up, these results partially support our assumptions regarding Hypothesis 3, namely that leisure crafting can buffer the undesirable effects of excessively low or excessively high levels of job control on context-free need satisfaction via work-related need frustration. We found this buffering effect for autonomy needs (at too low and too high levels of job control) and competence needs (at too high levels of job control), but not for relatedness needs.

Additional analyses: job crafting as a control variable

Note that our second model included job crafting as a covariate. We added job crafting as a predictor of need frustration at work (autonomy, competence, and relatedness) and context-free need satisfaction (autonomy, competence, and relatedness) to make sure that our assumptions about leisure crafting exist over and above any possible influence of job crafting on psychological needs. We acknowledge the theoretical relevance of job crafting in managing job characteristics and supporting psychological needs. From a theoretical standpoint, leisure crafting complements job crafting by targeting need satisfaction outside the constraints of the work environment. While job crafting is necessarily limited by organizational structures, role boundaries, and hierarchical power dynamics, leisure crafting offers individuals a greater degree of autonomy and flexibility to craft meaningful, need-fulfilling experiences in their leisure time (Abdel Hadi et al., 2021). In this way, leisure crafting may be especially potent as a second-stage moderator, strengthening the restoration of frustrated needs when work conditions are suboptimal. By focusing on leisure crafting as a second-stage moderator, we aim to extend the literature on cross-domain proactive behaviour and highlight the potential of leisure-based strategies to protect context-free psychological need satisfaction.

Our results show that although job crafting had some relationships with work-related need frustration and context-free need satisfaction, we found our assumptions about leisure crafting to be supported (see Table 2). For the sake of parsimony, we only report the model including job crafting, but the general pattern of results remained the same without job crafting as a covariate.

DISCUSSION

We aimed to analyse curvilinear relationships between (non-)optimal job control and BPNS within and outside the work context. Moreover, we sought to test the buffering role of leisure crafting in this relationship (second-stage moderated mediation). We found partial support for our hypotheses, as non-optimal job control frustrated work-related autonomy, competence, and relatedness needs. However, further analyses revealed that a strict U-shaped relationship was only evident for autonomy needs. For competence needs, the curvilinear effect can best be explained by a positive influence of too high job control on needs frustration at work, which flattens for lower values of job control. For relatedness need

frustration at work, the two-lines test revealed no evidence of a strong effect of either too low or too high job control (although the quadratic effect was indicated in the regression models [Models 1 and 2]).

We found support for the hypothesis of extended negative effects of non-optimal job control on context-free autonomy and competence need satisfaction, but not on relatedness need satisfaction, through increased need frustration at work. Leisure crafting reduced the indirect effects of non-optimal job control on context-free (autonomy and competence) needs by weakening the negative relationship between work-related need frustration and context-free need satisfaction (second-stage moderated mediations).

Theoretical implications

From a theoretical perspective, our results align with the basic assumptions of the vitamin model (Warr, 1990) and challenge the predominant view that job control positively affects psychological needs fulfilment in a linear fashion (e.g., Gagné & Deci, 2005). While previous research on job control has emphasized the positive impact of job control as a job resource with positive effects on psychological needs fulfilment, our findings provide a more nuanced understanding. Our results demonstrate that not only does too little job control frustrate psychological needs at work, but that too much job control can also have detrimental effects. We found this relationship for autonomy and competence needs: Too much job control can lead to feelings of being overwhelmed and overloaded, thus frustrating psychological needs at work. Hence, excessive job control can be just as detrimental as insufficient job control.

Interestingly, regarding competence needs, our results indicate that the curvilinear effect stems primarily from excessively high rather than insufficient job control. In line with the “too-much-of-a-good-thing” effect (Grant & Schwartz, 2011), job control appears to become detrimental, particularly when it is overly high. This pattern likely reflects that competence need frustration at work is a highly aversive experience (Vansteenkiste et al., 2020) that can arise when individuals feel overloaded by the obligations associated with excessive job control (Duxbury et al., 2018) or when autonomy demands exceed their perceived abilities or resources, thereby evoking feelings of ineffectiveness and failure. By contrast, low job control did not show significant associations with competence need threat in our data. Conceptually, this may suggest that having little discretion does not necessarily provoke explicit feelings of incompetence. However, this finding does not rule out the possibility of a relationship between too low job control and competence need satisfaction at work. It might be possible that too low levels of job control reduce opportunities to experience mastery or accomplishment, thereby offering only a few options to satisfy competence needs (instead of frustration). In other words, the absence of job control may prevent competence satisfaction from emerging, whereas excessive control can actively threaten it (Van den Broeck et al., 2016).

Apart from that, we did not find that either too low or too high job control had a significant impact on relatedness need frustration, as the two-lines test did not reveal any such relationships. One possible explanation for this finding is that extremes in job control may be less relevant for relatedness needs than for autonomy and competence needs. As our focus was on relatedness need frustration at work, we cannot rule out the possibility that very high or very low job control may still be relevant for relatedness need satisfaction at work. Furthermore, relatedness experiences may be primarily shaped by the social nature of the work environment, rather than by the level of decision-making autonomy itself (Patterer et al., 2024). Another explanation for this finding could be that the expected relationships would emerge primarily in occupations characterized by frequent interpersonal interaction, as job control in such contexts may more directly provide employees with opportunities to build and maintain social connections. From a methodological perspective, the positive quadratic relationship observed in the regression—but not confirmed by the two-lines test—may further suggest that greater statistical power or more occupationally diverse samples could yield clearer insights into whether this relationship is indeed significant (Simonsohn, 2018).

Turning to the broader perspective of work-to-non-work spillover, our results support that the negative impact of too little and too much job control extends to context-free psychological need satisfaction (through frustrated needs at work). In line with our findings regarding Hypothesis 1, this indirect effect was evident for autonomy needs (for too low and too high job control) and competence needs (for too high job control). Although previous theorizing in the context of psychological needs has assumed that the experience of psychological needs is universal (or at least to a high degree) and not bound to a specific context (e.g., the work context; Abdel Hadi et al., 2022; Milyavskaya & Koestner, 2011), there is a lack of research testing this spillover. Building on previous theorizing and research arguing that work-related psychological needs also affect context-free experiences of well-being and self-esteem (Deci et al., 2001), we provide an explicit test of how job characteristics can affect psychological needs across life domains. In doing so, our results enrich SDT (Deci & Ryan, 1985), particularly theorizing about BPNS within and beyond work (Deci & Ryan, 2000; Gagné & Deci, 2005). Furthermore, we extend research and theorizing on job control and how unfavourable job control conditions can influence experiences in the non-work domain.

Finally, leisure crafting was found to be an effective buffering mechanism against the non-beneficial influences of both too low and too high job control on context-free need satisfaction (via frustrated needs at work). The identity-based integrative needs model of crafting (de Bloom et al., 2020) suggests that crafting can serve as a strategy to compensate for unmet needs across different contexts. In line with this idea, our findings indicate that leisure crafting provides opportunities to feel autonomous, competent, and self-efficacious (and to connect with others) in the non-work domain, thereby reducing the spillover of work-related autonomy and competence need frustration into context-free need satisfaction.

This buffering mechanism did apply to the influences regarding autonomy and competence needs, but not to relatedness needs. The absence of a moderating effect of leisure crafting on the spillover to relatedness needs may be attributable to the lack of an indirect effect of non-optimal job control on relatedness need satisfaction. Overall, our findings extend spillover theory by indicating that the compensatory potential of leisure crafting is need-specific and varies across different psychological needs.

Limitations and future research directions

While our study provides valuable insights, it also has limitations that should be acknowledged, and that may inform future research. First, by focusing specifically on need frustration in the work context and need satisfaction beyond work, we chose to capture varying facets of psychological needs across specific contexts (work-related need frustration and context-free need satisfaction). We did so by building on the two-process model of needs (Sheldon, 2011), which highlights the importance of distinguishing between need frustration and need satisfaction. Although this choice of variables seemed most reasonable for our purpose, we call for follow-up studies that consider both facets of psychological needs (i.e., frustration and satisfaction) across life contexts to validate our findings.

Second, all of our variables are self-reported. This potentially raises concerns about common method bias. We have taken several steps to mitigate these concerns, including separating our variables in time, which reduces the likelihood of confounds due to current psychological states at the time of measurement. For instance, this reduces the risk of carryover effects (when participants are influenced in their responses by their earlier responses), or the risk of unwanted contextual or psychological influences (Podsakoff et al., 2003). For example, a negative mood at the time of measurement might contribute to more negative evaluations of one's job control and one's need satisfaction, thereby artificially inflating their relationship. In addition, we believe that our variables to a high extent refer to inner states and private events that could be best assessed via self-reports (cf. Conway & Lance, 2010). For instance, the experience of psychological needs requires an intimate understanding of one's inner life and is difficult for others to rate or to infer from behavioural or physiological data. Similarly, our focus was on subjective evaluations of (non-)optimal job control.

However, it would be valuable for future research to examine whether the curvilinear relationships observed in this study also hold when using more objective measures of job control or manipulations of job control (e.g., [field-]experimental approaches or intervention studies; Abdel Hadi et al., 2025). In line with this, identifying and disentangling the individual traits and abilities that lead certain employees to perceive the same level of job control as too low, too high, or optimal would deepen our understanding of these subjective experiences. For instance, research has found that individuals high in trait self-control tend to perceive experimentally manipulated high job control more positively, particularly with regard to their self-control demands, compared to individuals low in trait self-control (Abdel Hadi et al., 2025).

Third, because we base our conclusions on correlational data, we cannot rule out the possibility of reversed causation. Therefore, our findings should be replicated in more controlled (field-)experimental settings. For example, to replicate the buffering effect of leisure crafting, further research could include an intervention in which leisure crafting is manipulated between groups (cf. Petrou & de Vries, 2023). Moreover, experimental research with varying levels of job control (deficient vs. excessive levels of job control) could be helpful to rule out concerns regarding reversed relationships (employees who feel frustrated by their work might experience job control differently; Guthrie et al., 2020) or third variable influences, such as inter-individual differences in psychological need satisfaction.

Fourth, while the present study focused on between-person differences, future research could use within-person or intensive longitudinal designs to examine how daily or weekly fluctuations in job control relate to dynamic within-person processes. This would provide deeper insight into the individual variability and short-term processes underlying the effects observed in this study.

Practical implications

First, the curvilinear relationships identified in this study provide important insights for job design. Employers should aim to provide a balanced level of job control that avoids the extremes of too little and too much. This balance is critical for fostering a work environment in which employees can thrive by meeting their psychological needs, particularly the needs for autonomy and competence. In practical terms, this means that when organizations grant employees autonomy, they should be very careful to also ensure that adequate structure, guidance, and feedback are in place to capitalize on this autonomy. Managers can monitor signs of too much control, such as decision fatigue, or feelings of being overwhelmed by responsibility, and intervene by clarifying expectations or redistributing decision-making demands (Johnson & Hall, 1988).

With regard to the non-work context, our findings suggest that organizations could create opportunities for employees to engage in leisure crafting as a complementary strategy. Leisure crafting can help maintain employees' health and motivation in situations where the degree of job control is non-optimal. In such contexts, providing resources, time, and encouragement for employees to pursue meaningful leisure activities can help restore balance and support need satisfaction beyond the workplace. Workshops, interventions, and employee assistance programmes that promote the constructive use of free time and self-directed recovery (Petrou & de Vries, 2023) may therefore serve as valuable complements to job design initiatives.

CONCLUSION

This study contributes to the understanding of job control and psychological needs by highlighting the curvilinear relationships between job control and psychological needs (within and beyond the work context). We found for psychological needs (within and beyond work) that job control can be as negative at excessively high levels of control as it is at low levels. Interestingly, this finding mostly applied to

autonomy and competence needs. Second, we found support for the buffering role of leisure crafting in this relationship, as leisure crafting prevents a spillover of frustrated psychological needs (due to too little/too much job control) to context-free need satisfaction. Our findings underscore the importance of leisure crafting as a tool that can maintain employee functioning (by compensating for frustrated needs at work). By adopting these findings, organizations can create healthier and more favourable work environments that enable employees to thrive both within and outside work.

AUTHOR CONTRIBUTIONS

Sascha Etgen: Conceptualization; methodology; data curation; formal analysis; funding acquisition; writing – original draft; project administration. **Paraskevas Petrou:** Conceptualization; methodology; writing – review and editing; writing – original draft; investigation. **Jan A. Häusser:** Conceptualization; investigation; methodology; writing – review and editing; writing – original draft; funding acquisition.

ACKNOWLEDGEMENTS

Open Access funding enabled and organized by Projekt DEAL.

FUNDING INFORMATION

This research was supported by a research grant from the German Research Foundation awarded to SE and JAH (Project number: AB 972/2-1).

CONFLICT OF INTEREST STATEMENT

We have no conflicts of interest to report.

DATA AVAILABILITY STATEMENT

Our data and materials are available on the Open Science Framework (OSF) and can be accessed at: https://osf.io/b9kef/?view_only=f58a6c8457b14803aad732c9f1ba0e2e (blinded for review).

ORCID

Paraskevas Petrou  <https://orcid.org/0000-0003-1585-0852>

REFERENCES

- Abdel Hadi, S., Bakker, A. B., & Häusser, J. A. (2021). The role of leisure crafting for emotional exhaustion in telework during the COVID-19 pandemic. *Anxiety, Stress, and Coping*, 34(5), 530–544. <https://doi.org/10.1080/10615806.2021.1903447>
- Abdel Hadi, S., Häusser, J. A., & Parker, S. L. (2025). When job control backfires: A self-control perspective on the effects of job control on well-being and performance. *Journal of Experimental Psychology: Applied*, 31, 188–203. <https://doi.org/10.1037/xap0000538>
- Abdel Hadi, S., Mojzisch, A., Krumm, S., & Häusser, J. A. (2022). Day-level relationships between work, physical activity, and well-being: Testing the physical activity-mediated demand-control (pamDC) model. *Work & Stress*, 36(4), 355–376. <https://doi.org/10.1080/02678373.2021.2002971>
- Adams, A. J., & Stone, T. H. (1977). Satisfaction of need for achievement in work and leisure time activities. *Journal of Vocational Behavior*, 11(2), 174–181. [https://doi.org/10.1016/0001-8791\(77\)90005-7](https://doi.org/10.1016/0001-8791(77)90005-7)
- Bakker, A. B., Demerouti, E., & Euwema, M. C. (2005). Job resources buffer the impact of job demands on burnout. *Journal of Occupational Health Psychology*, 10(2), 170–180. <https://doi.org/10.1037/1076-8998.10.2.170>
- Baltes, B. B., Bauer, C. C., Bajdo, L. M., & Parker, C. P. (2002). The use of multitrait-multimethod data for detecting nonlinear relationships: The case of psychological climate and job satisfaction. *Journal of Business and Psychology*, 17(1), 3–17. <https://doi.org/10.1023/A:1016231816394>
- Baumann, H. M., & Wilson, K. S. (2024). Considering need satisfaction both at work and at home: What matters for employees' work–family enrichment and well-being? *Journal of Occupational and Organizational Psychology*, 97, 1659–1680. <https://doi.org/10.1111/joop.12534>
- Berg, J. M., Grant, A. M., & Johnson, V. (2010). When callings are calling: Crafting work and leisure in pursuit of unanswered occupational callings. *Organization Science*, 21(5), 973–994. <https://doi.org/10.1287/orsc.1090.0497>
- Bipp, T., & Walczok, M. (2024). The paradoxical effects of high work methods and work scheduling autonomy. *Zeitschrift Für Arbeits – Und Organisationspsychologie*, 68(4), 176–187. <https://doi.org/10.1026/0932-4088/a000431>

- Biron, M., Casper, W. J., & Raghuram, S. (2023). Crafting telework: A process model of need satisfaction to foster telework outcomes. *Personnel Review*, 52(3), 671–686. <https://doi.org/10.1108/PR-04-2021-0259>
- Butler, A. B., Grzywacz, J. G., Bass, B. L., & Linney, D. K. (2005). Extending the demands-control model: A daily diary study of job characteristics, work-family conflict and work-family facilitation. *Journal of Occupational and Organizational Psychology*, 78(2), 155–169. <https://doi.org/10.1348/096317905X40097>
- Chen, I. S. (2023). Using leisure crafting to reduce emotional exhaustion at home during the COVID-19 pandemic through better sleep and not thinking about the pandemic. *Stress and Health*, 39(5), 1047–1057. <https://doi.org/10.1002/smi.3243>
- Chen, P. F., & Wu, L. (2022). Impact of job demands on police stress response—The roles of basic psychological needs and job autonomy. *BMC Public Health*, 22, e2275. <https://doi.org/10.1186/s12889-022-14758-6>
- Cho, E., & Tay, L. (2016). Domain satisfaction as a mediator of the relationship between work-family spillover and subjective well-being: A longitudinal study. *Journal of Business and Psychology*, 31, 445–457. <https://doi.org/10.1007/s10869-015-9423-8>
- 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, 237–251. <https://doi.org/10.1037/a0019823>
- Conway, J. M., & Lance, C. E. (2010). What reviewers should expect from authors regarding common method bias in organizational research. *Journal of Business and Psychology*, 25, 325–334. <https://doi.org/10.1007/s10869-010-9181-6>
- de Bloom, J., Vaziri, H., Tay, L., & Kujanpää, M. (2020). An identity-based integrative needs model of crafting: Crafting within and across life domains. *Journal of Applied Psychology*, 105(12), 1423–1446. <https://doi.org/10.1037/apl0000495>
- De Lange, A. H., Taris, T. W., Kompier, M. A., Houtman, I. L., & Bongers, P. M. (2003). “The very best of the millennium”: Longitudinal research and the demand-control-(support) model. *Journal of Occupational Health Psychology*, 8(4), 282–305. <https://doi.org/10.1037/1076-8998.8.4.282>
- deCharms, R. (1980). The origins of competence and achievement motivation in personal causation. In L. J. Fyans (Ed.), *Achievement motivation* (pp. 22–33). Springer. https://doi.org/10.1007/978-1-4757-8997-3_3
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. Springer Science & Business Media.
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01
- Deci, E. L., & Ryan, R. M. (2008). Facilitating optimal motivation and psychological well-being across life's domains. *Canadian Psychology/Psychologie Canadienne*, 49(1), 14–23. <https://doi.org/10.1037/0708-5591.49.1.14>
- Deci, E. L., Olafsen, A. H., & Ryan, R. M. (2017). Self-determination theory in work organizations: The state of a science. *Annual Review of Organizational Psychology and Organizational Behavior*, 4(1), 19–43. <https://doi.org/10.1146/annurev-orgpsych-032516-113108>
- Deci, E. L., Ryan, R. M., Gagné, M., Leone, D. R., Usunov, J., & Kornazheva, B. P. (2001). Need satisfaction, motivation, and well-being in the work organizations of a former eastern bloc country: A cross-cultural study of self-determination. *Personality and Social Psychology Bulletin*, 27(8), 930–942. <https://doi.org/10.1177/0146167201278002>
- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources-model of burnout. *Journal of Applied Psychology*, 86(3), 499–512. <https://doi.org/10.1037/0021-9010.86.3.499>
- Donaldson, S. I., & Grant-Vallone, E. J. (2002). Understanding self-report bias in organizational behavior research. *Journal of Business and Psychology*, 17, 245–260. <https://doi.org/10.1023/A:1019637632584>
- Dormann, C., & Griffin, M. A. (2015). Optimal time lags in panel studies. *Psychological Methods*, 20(4), 489–505. <https://doi.org/10.1037/met0000041>
- Duxbury, L., Stevenson, M., & Higgins, C. (2018). Too much to do, too little time: Role overload and stress in a multi-role environment. *International Journal of Stress Management*, 25(3), 250–266. <https://doi.org/10.1037/str0000062>
- Edwards, J. R., & Rothbard, N. P. (2000). Mechanisms linking work and family: Clarifying the relationship between work and family constructs. *Academy of Management Review*, 25(1), 178–199. <https://doi.org/10.5465/amr.2000.2791609>
- Etgen, S., Häusser, J. A., & Petrou, P. (2024). OPTICS [project file]. *Open science framework*.
- Fasbender, U., & Gerpott, F. H. (2023). Designing work for change and its unintended side effects. *Journal of Vocational Behavior*, 145, e103913. <https://doi.org/10.1016/j.jvb.2023.103913>
- Fernet, C., Austin, S., Trépanier, S. G., & Dussault, M. (2013). How do job characteristics contribute to burnout? Exploring the distinct mediating roles of perceived autonomy, competence, and relatedness. *European Journal of Work and Organizational Psychology*, 22(2), 123–137.
- Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior*, 26(4), 331–362.
- Gagné, M., & Hewett, R. (2024). Assumptions about human motivation have consequences for practice. *Journal of Management Studies*, 62, 2098–2124. <https://doi.org/10.1111/joms.13092>
- Gajendran, R. S., & Harrison, D. A. (2007). The good, the bad, and the unknown about telecommuting: Meta-analysis of psychological mediators and individual consequences. *Journal of Applied Psychology*, 92(6), 1524–1541.
- Ganster, D. C., & Fusilier, M. R. (1989). Control in the workplace. *International Review of Industrial and Organizational Psychology*, 4, 235–280.
- Golden, T. D., & Veiga, J. F. (2005). The impact of extent of telecommuting on job satisfaction: Resolving inconsistent findings. *Journal of Management*, 31(2), 301–318. <https://doi.org/10.1177/0149206304271768>
- Goodman, J. S., & Blum, T. C. (1996). Assessing the non-random sampling effects of subject attrition in longitudinal research. *Journal of Management*, 22(4), 627–652. <https://doi.org/10.1177/01492063960220040>

- Grant, A. M., & Schwartz, B. (2011). Too much of a good thing: The challenge and opportunity of the inverted U. *Perspectives on Psychological Science*, 6(1), 61–76.
- Greenhaus, J. H., & Beutell, N. J. (1985). Sources of conflict between work and family roles. *Academy of Management Review*, 10(1), 76–88. <https://doi.org/10.5465/amr.1985.4277352>
- Guthrie, C., Dormann, C., & Voelkle, M. C. (2020). Reciprocal effects between job stressors and burnout: A continuous time meta-analysis of longitudinal studies. *Psychological Bulletin*, 146(12), 1146–1173. <https://doi.org/10.1037/bul0000304>
- Hackman, R., & Oldham, G. (1976). Motivation through the design of work: Test of a theory. *Organizational Behavior and Human Performance*, 16(2), 250–279. [https://doi.org/10.1016/0030-5073\(76\)90016-7](https://doi.org/10.1016/0030-5073(76)90016-7)
- Hakanen, J., & Van Dierendonck, D. (2011). Servant-leadership and life satisfaction: The mediating role of justice, job control, and burnout. *International Journal of Servant-Leadership*, 7, e21. <https://doi.org/10.33972/ijsl.183>
- Hamrick, A. B. (2022). Stress[ed]out, leisure in: The role of leisure crafting in facilitating entrepreneurs' work stressor—Creativity relationship. *Journal of Business Venturing Insights*, 18, e00329. <https://doi.org/10.1016/j.jbvi.2022.e00329>
- Hamrick, A. B., Paterson, T. A., Michaelis, T. L., Murnieks, C. Y., & Petrou, P. (2023). Work hard or play hard: The effect of leisure crafting on opportunity recognition and venture performance. *Journal of Business Venturing*, 38(5), 106327. <https://doi.org/10.1016/j.jbusvent.2023.106327>
- Harold, C. M., Oh, I.-S., Holtz, B. C., Han, S., & Giacalone, R. A. (2016). Fit and frustration as drivers of targeted counterproductive work behaviors: A multifoci perspective. *Journal of Applied Psychology*, 101(11), 1513–1535. <https://doi.org/10.1037/apl0000150>
- Häusser, J. A., Mojzisch, A., Niesel, M., & Schulz-Hardt, S. (2010). Ten years on: A review of recent research on the job demand–control (-support) model and psychological well-being. *Work & Stress*, 24(1), 1–35. <https://doi.org/10.1080/02678371003683747>
- Hayes, A. F., & Preacher, K. J. (2010). Quantifying and testing indirect effects in simple mediation models when the constituent paths are nonlinear. *Multivariate Behavioral Research*, 45(4), 627–660. <https://doi.org/10.1080/00273171.2010.498290>
- Johnson, J. V., & Hall, E. M. (1988). Job strain, work place social support, and cardiovascular disease: A cross-sectional study of a random sample of the Swedish working population. *American Journal of Public Health*, 78(10), 1336–1342. <https://doi.org/10.2105/ajph.78.10.1336>
- Jones, D. R. (2022). Academic leisure crafting: More than a respite to breathe? *British Educational Research Journal*, 48(1), 137–159. <https://doi.org/10.1002/berj.3757>
- Judge, T. A., & Watanabe, S. (1993). Another look at the job satisfaction-life satisfaction relationship. *Journal of Applied Psychology*, 78(6), 939–948. <https://doi.org/10.1037/0021-9010.78.6.939>
- Karasek, R. A. (1979). Job demands, job decision latitude, and mental strain: Implications for job redesign. *Administrative Science Quarterly*, 24, 285–308. <https://doi.org/10.2307/2392498>
- Katz, D., & Kahn, R. L. (1978). *The social psychology of organizations*. John Wiley.
- Kubicek, B., Korunka, C., & Tement, S. (2014). Too much job control? Two studies on curvilinear relations between job control and eldercare workers' well-being. *International Journal of Nursing Studies*, 51(12), 1644–1653.
- Kubicek, B., Prem, R., Baumgartner, V., Uhlig, L., & Korunka, C. (2021). Cognitive demands of flexible work. In C. Korunka (Ed.), *Flexible working practices and approaches: Psychological and social implications* (pp. 19–37). Springer Nature Switzerland AG.
- Leiner, D. J. (2023). *SoSci survey (Version 3.5) [Computer software]*. <https://www.sosicurvey.de>
- MacDonald, K. (1991). A perspective on Darwinian psychology: The importance of domain-general mechanisms, plasticity, and individual differences. *Ethology and Sociobiology*, 12(6), 449–480. [https://doi.org/10.1016/0162-3095\(91\)90025-L](https://doi.org/10.1016/0162-3095(91)90025-L)
- Meyer, E., Schöllbauer, J., & Korunka, C. (2021). Research perspectives from job control to flexibility: Historical outline, depiction of risks, and implications for future research. In C. Korunka (Ed.), *Flexible working practices and approaches: Psychological and social implications* (pp. 1–17). Springer Nature Switzerland AG.
- Milyavskaya, M., & Koestner, R. (2011). Psychological needs, motivation, and well-being: A test of self-determination theory across multiple domains. *Personality and Individual Differences*, 50(3), 387–391. <https://doi.org/10.1016/j.paid.2010.10.029>
- Milyavskaya, M., Gingras, I., Mageau, G. A., Koestner, R., Gagnon, H., Fang, J., & Boiché, J. (2009). Balance across contexts: Importance of balanced need satisfaction across various life domains. *Personality and Social Psychology Bulletin*, 35(8), 1031–1045. <https://doi.org/10.1177/0146167209337036>
- Mojza, E. J., Sonnentag, S., & Bornemann, C. (2011). Volunteer work as a valuable leisure-time activity: A day-level study on volunteer work, non-work experiences, and well-being at work. *Journal of Occupational and Organizational Psychology*, 84(1), 123–152. <https://doi.org/10.1348/096317910X485737>
- Morgeson, F. P., & Humphrey, S. E. (2006). The work design questionnaire (WDQ): Developing and validating a comprehensive measure for assessing job design and the nature of work. *Journal of Applied Psychology*, 91(6), 1321–1339. <https://doi.org/10.1037/0021-9010.91.6.1321>
- Mugge, V. M. (2008). Segmented: An R package to fit regression models with broken-line relationships. *R News*, 8(1), 20–25.
- Muthén, L. K., & Muthén, B. O. (1998–2017). *Mplus user's guide* (8th ed.). Muthén & Muthén.
- Napier, A. D., Slemp, G. R., & Vella-Brodrick, D. A. (2024). Crafting one's life and its relationship with psychological needs: A scoping review. *Applied Research in Quality of Life*, 19, 2063–2101. <https://doi.org/10.1007/s11482-024-10322-z>
- Niessen, C., Wessler, D., & Kostova, P. (2016). When and why do individuals craft their jobs? The role of individual motivation and work characteristics for job crafting. *Human Relations*, 69(6), 1287–1313. <https://doi.org/10.1177/0018726715610642>

- Olafsen, A. H., & Halvari, H. (2017). Motivational mechanisms in the relation between job characteristics and employee functioning. *The Spanish Journal of Psychology*, 20, e38. <https://doi.org/10.1017/sjp.2017.34>
- Olafsen, A. H., Halvari, H., & Frølund, C. W. (2021). The basic psychological need satisfaction and need frustration at work scale: A validation study. *Frontiers in Psychology*, 12, 697306. <https://doi.org/10.3389/fpsyg.2021.697306>
- Parker, S. L., Jimmieson, N. L., & Amiot, C. E. (2009). The stress-buffering effects of control on task satisfaction and perceived goal attainment: An experimental study of the moderating influence of desire for control. *Applied Psychology*, 58(4), 622–652. <https://doi.org/10.1111/j.1464-0597.2008.00367.x>
- Patterer, A. S., Kühnel, J., & Korunka, C. (2024). Parallel effects of the need for relatedness: A three-wave panel study on how coworker social support contributes to OCB and depersonalisation. *Work & Stress*, 38(1), 1–23. <https://doi.org/10.1080/02678373.2023.2222367>
- Petrou, P., & Bakker, A. B. (2016). Crafting one's leisure time in response to high job strain. *Human Relations*, 69(2), 507–529. <https://doi.org/10.1177/0018726715590453>
- Petrou, P., & de Vries, J. (2023). Context-free and work-related benefits of a leisure crafting intervention: A randomized controlled trial. *Journal of Leisure Research*, 56, 123–148. <https://doi.org/10.1080/00222216.2023.2244953>
- Petrou, P., Bakker, A. B., & van den Heuvel, M. (2017). Weekly job crafting and leisure crafting: Implications for meaning-making and work engagement. *Journal of Occupational and Organizational Psychology*, 90(2), 129–152. <https://doi.org/10.1111/joop.12160>
- Petrou, P., Hamrick, A. B., & Abdel Hadi, S. (2024). Unraveling the power of leisure crafting for unengaged employees: Implications for creativity and meaning at work. *Journal of Organizational Behavior*, 45, 1170–1188. <https://doi.org/10.1002/job.2824>
- Pindek, S., Shen, W., Gray, C. E., & Spector, P. E. (2022). Clarifying the inconsistently observed curvilinear relationship between workload and employee attitudes and mental well-being. *Work & Stress*, 37(2), 195–221. <https://doi.org/10.1080/02678373.2022.2120562>
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903. <https://doi.org/10.1037/0021-9010.88.5.879>
- Rain, J. S., Lane, I. M., & Steiner, D. D. (1991). A current look at the job satisfaction/life satisfaction relationship: Review and future considerations. *Human Relations*, 44(3), 287–307. <https://doi.org/10.1177/001872679104400305>
- Rudolph, C. W., Breevaart, K., & Zacher, H. (2025). When are job autonomy and workload “too much of a good thing” for job crafting? *Journal of Business and Psychology*. <https://doi.org/10.1007/s10869-025-10048-1>
- Rudolph, C. W., Katz, I. M., Lavigne, K. N., & Zacher, H. (2017). Job crafting: A meta-analysis of relationships with individual differences, job characteristics, and work outcomes. *Journal of Vocational Behavior*, 102, 112–138. <https://doi.org/10.1016/j.jvb.2017.05.008>
- Ryan, R. M. (1995). Psychological needs and the facilitation of integrative processes. *Journal of Personality*, 63(3), 397–427. <https://doi.org/10.1111/j.1467-6494.1995.tb00501.x>
- Schwartz, B. (2015). The paradox of choice. In S. Joseph (Ed.), *Positive psychology in practice: Promoting human flourishing in work, health, education, and everyday life* (pp. 121–138). John Wiley & Sons Inc.
- Shahzad, M. B. (2022). Role of psychological capital in the curvilinear association between job autonomy and job performance. *Improvement Quarterly*, 34(4), 603–625. <https://doi.org/10.1002/piq.21368>
- Sheldon, K. M. (2011). Integrating behavioral-motive and experiential-requirement perspectives on psychological needs: A two-process model. *Psychological Review*, 118(4), 552–569. <https://doi.org/10.1037/a0024758>
- Sheldon, K. M., Elliot, A. J., Kim, Y., & Kasser, T. (2001). What is satisfying about satisfying events? Testing 10 candidate psychological needs. *Journal of Personality and Social Psychology*, 80(2), 325–339. <https://doi.org/10.1037//0022-3514.80.2.325>
- Simonsohn, U. (2018). Two lines: A valid alternative to the invalid testing of U-shaped relationships with quadratic regressions. *Advances in Methods and Practices in Psychological Science*, 1(4), 538–555. <https://doi.org/10.1177/251524591880575>
- Sirgy, M. J., Efraty, D., Siegel, P., & Lee, D. J. (2001). A new measure of quality of work life (QWL) based on need satisfaction and spillover theories. *Social Indicators Research*, 55, 241–302. <https://doi.org/10.1023/A:1010986923468>
- Spector, P. E. (2009). The role of job control in employee health and well-being. In A. M. Rossi, J. A. Meurs, & P. L. Perrewé (Eds.), *International handbook of work and health psychology* (pp. 171–195). IAP Information Age Publishing. <https://doi.org/10.1002/9780470682357>
- Spreitzer, G., Sutcliffe, K., Dutton, J., Sonenshein, S., & Grant, A. M. (2005). A socially embedded model of thriving at work. *Organization Science*, 16(5), 537–549. <https://doi.org/10.1287/orsc.1050.0153>
- 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. <https://doi.org/10.1037/ocp0000107>
- Stride, C. B., Gardner, S., Catley, N., & Thomas, F. (2015). *Mplus code for mediation, moderation, and moderated mediation models*. <http://www.offbeat.group.shef.ac.uk/FIO/mplusmedmod.htm>
- Totterdell, P., Wood, S., & Wall, T. (2006). An intra-individual test of the demands-control model: A weekly diary study of psychological strain in portfolio workers. *Journal of Occupational and Organizational Psychology*, 79(1), 63–84. <https://doi.org/10.1348/096317905X52616>

- Trépanier, S. G., Forest, J., Fernet, C., & Austin, S. (2015). On the psychological and motivational processes linking job characteristics to employee functioning: Insights from self-determination theory. *Work & Stress, 29*(3), 286–305. <https://doi.org/10.1080/02678373.2015.1074957>
- Tušl, M., Bauer, G. F., Kujanpää, M., Toyama, H., Shimazu, A., & de Bloom, J. (2024). Needs-based job crafting: Validation of a new scale based on psychological needs. *Journal of Occupational Health Psychology, 29*(2), 57–71. <https://doi.org/10.1037/ocp0000372>
- Unanue, W., Gómez, M. E., Cortez, D., Oyanedel, J. C., & Mendiburo-Seguel, A. (2017). Revisiting the link between job satisfaction and life satisfaction: The role of basic psychological needs. *Frontiers in Psychology, 8*, e680. <https://doi.org/10.3389/fpsyg.2017.00680>
- Van den Broeck, A., Ferris, D. L., Chang, C.-H., & Rosen, C. C. (2016). A review of self-determination theory's basic psychological needs at work. *Journal of Management, 42*(5), 1195–1229. <https://doi.org/10.1177/0149206316632058>
- Van den Broeck, A., Vansteenkiste, M., De Witte, H., & Lens, W. (2008). Explaining the relationships between job characteristics, burnout, and engagement: The role of basic psychological need satisfaction. *Work & Stress, 22*(3), 277–294. <https://doi.org/10.1080/02678370802393672>
- Van den Broeck, A., Vansteenkiste, M., De Witte, H., Soenens, B., & Lens, W. (2010). Capturing autonomy, competence and relatedness at work: Construction and initial validation of the work-related basic need satisfaction scale. *Journal of Occupational and Organizational Psychology, 83*(4), 981–1002. <https://doi.org/10.1348/096317909X481382>
- Van der Doef, M., & Maes, S. (1999). The job demand-control (–support) model and psychological well-being: A review of 20 years of empirical research. *Work & Stress, 13*(2), 87–114.
- Van Wingerden, J., Bakker, A. B., & Derks, D. (2017). Fostering employee well-being via a job crafting intervention. *Journal of Vocational Behavior, 100*, 164–174. <https://doi.org/10.1016/j.jvb.2017.03.008>
- Vansteenkiste, M., & Ryan, R. M. (2013). On psychological growth and vulnerability: Basic psychological need satisfaction and need frustration as a unifying principle. *Journal of Psychotherapy Integration, 23*(3), 263–280. <https://doi.org/10.1037/a0032359>
- Vansteenkiste, M., Ryan, R. M., & Soenens, B. (2020). Basic psychological need theory: Advancements, critical themes, and future directions. *Motivation and Emotion, 44*(1), 1–31. <https://doi.org/10.1007/s11031-019-09818-1>
- Vergauwe, J., Wille, B., Hofmans, J., Kaiser, R. B., & Fruyt, F. D. (2017). The too little/too much scale: A new rating format for detecting curvilinear effects. *Organizational Research Methods, 20*(3), 518–544. <https://doi.org/10.1177/1094428117706534>
- Véronneau, M. H., Koestner, R. F., & Abela, J. R. (2005). Intrinsic need satisfaction and well-being in children and adolescents: An application of the self-determination theory. *Journal of Social and Clinical Psychology, 24*(2), 280–292. <https://doi.org/10.1521/jsocp.24.2.280.62277>
- Wang, J., Xiong, Y., Murad, M., Chaudhary, N. I., & Waqar, H. (2023). Role of online time-spatial job crafting and leisure crafting on remote work performance through tele-pressure and techno-self-efficacy. *Sustainability, 15*(15), e11936. <https://doi.org/10.3390/su15151936>
- Warr, P. B. (1990). Decision latitude, job demands, and employee well-being. *Work & Stress, 4*(4), 285–294. <https://doi.org/10.1080/02678379008256991>
- Zhou, E. (2020). The “too-much-of-a-good-thing” effect of job autonomy and its explanation mechanism. *Psychology, 11*(2), 299–313. <https://doi.org/10.4236/psych.2020.112019>

How to cite this article: Etgen, S., Petrou, P., & Häusser, J. A. (2025). Too little and too much job control impair psychological needs: The buffering role of leisure crafting. *Journal of Occupational and Organizational Psychology, 98*, e70069. <https://doi.org/10.1111/joop.70069>