



**Navigating the Boundaries between Work and Private Life:
Enhancing Boundary Management for Well-Being, Life Domain
Balance and Work Performance in Flexible Work Designs**

PhD Thesis submitted to the Faculty of Science
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12. February 2026

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Life Domain Balance and Work Performance in Flexible
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Acknowledgements

Whenever I use “we” throughout this thesis, it is because this work feels far from being only mine, it is the product of an incredible project team. I am deeply grateful to have been part of it. Thank you for pouring so much heart and time into the project, for enriching my work with your ideas, and for inspiring me with your personalities.

My special thanks go to Michaela and Laurenz. You made it possible for me to move abroad during the pandemic and to pursue my dream of completing a PhD. Throughout the project, I always felt your belief in me and my abilities. You reignited my curiosity and passion for research and encouraged me to pursue my ideas and bring them to life. You showed endless patience with my many questions, and I felt I could be myself, with both my strengths and my weaknesses.

Thank you, Julia, for all our countless creative conversations about our topics, for our planning meetings, and, above all, for your openness and unwavering support, which I could always count on. You were a true partner in the project, my PhD twin in every sense, and you became a dear friend.

I am also grateful to the entire project team at the Institute for Mental and Organisational Health for your dedication, especially Nicole, Marjan, Michaela K., Michaela V., Sarah, and many others. Without your commitment, it would simply not have been possible to bring our interventions to life in practice.

A heartfelt thank you goes to our project partners, the companies and organizations that made their employees’ time available for our research, and to the participants who engaged in the workshops, contributed actively, and implemented many of the resulting action plans in practice. Your curiosity, feedback, and gratitude made me feel that our work was truly making a difference in your lives.

Finally, I want to thank my family and friends for their support. You have been there through all the highs and lows, and your encouragement has meant a lot to me. A special thanks goes to my mother. During my school years, I often struggled to put my ideas into clear, concise words. Whenever I got stuck, my mother would gently guide me with the same question: “What are you actually trying to say?” That simple question stayed with me through school and university, quietly shaping the way I think and write. And who would have thought it would one day lead me all the way to a PhD?

Abstract

Technological and cultural changes driven by digitalization allow individuals to perform work-related tasks anytime and anywhere using mobile devices. While these developments offer advantages for balancing work and private life, they also blur boundaries between work and private life, making active boundary management an essential competence in flexible work designs.

Therefore, the aim of this thesis was to examine how boundary management can be enhanced within flexible work designs to promote employees' well-being, life domain balance, and work performance. Building on boundary theory (Ashforth et al., 2000), the thesis addressed three objectives. First, it developed a conceptual model integrating multiple facets of flexible work regarding boundary management and use of information and communication technologies (ICT), highlighting conditions under which employees benefit or face risks and identifying characteristics that support beneficial boundary management. Second, it designed and evaluated a boundary management intervention for teams, which demonstrated positive effects on both individual- and team-directed outcomes. Third, it investigated how job characteristics connected to boundary management and work-life support (Kossek et al., 2023b) relate to employees' work performance, offering initial insights into the ways work environments may shape employee effectiveness.

Overall, the thesis advances theory by clarifying the mechanisms through which ICT use and boundary management interact in flexible work designs, while also providing a starting point for future research on how job characteristics related to boundary management and work-life support may shape employees' work performance. On the practical side, it presents a ready-to-use organizational intervention integrating both individual and team perspectives. Taken together, these contributions offer insights and guidance for promoting well-being, life domain balance, and performance in flexible work designs.

Keywords: Flexible Work Designs, Boundary Management, Digitalization,
Organizational Interventions, Work Performance

Résumé

Les changements technologiques et culturels liés à la numérisation, ainsi que la généralisation des flexible work designs (conceptions du travail flexible), permettent aux individus d'accomplir des tâches professionnelles à tout moment et en tout lieu grâce aux dispositifs mobiles. Si ces évolutions offrent des avantages pour concilier vie professionnelle et vie privée, elles estompent également les frontières entre ces deux sphères, faisant de la boundary management (gestion des frontières; Ashforth et al., 2000) une compétence essentielle dans les environnements de travail flexibles.

Cette thèse visait à examiner comment la boundary management peut être renforcée dans ces contextes afin de favoriser le bien-être des employés, l'équilibre entre les sphères de vie et la performance individuelle. S'appuyant sur la boundary theory (théorie de la gestion des frontières; Ashforth et al., 2000), elle a poursuivi trois objectifs. La thèse a d'abord développé un modèle conceptuel intégrant plusieurs facettes du travail flexible et l'usage des technologies de l'information et de la communication (TIC), mettant en évidence les conditions dans lesquelles les employés en tirent bénéfice ou s'exposent à des risques, ainsi que les caractéristiques favorisant une gestion efficace des frontières. Ensuite, elle a conçu et évalué une intervention de boundary management au niveau des équipes, qui a montré des effets positifs tant sur les résultats individuels que sur ceux concernant l'équipe. Enfin, elle a examiné les liens entre les caractéristiques professionnelles liées à la boundary management et au work-life support (soutien à la conciliation travail-vie privée; Kossek et al., 2023b) et la performance des employés.

Dans l'ensemble, la thèse fait progresser la théorie en clarifiant les mécanismes d'interaction entre les TIC et boundary management, tout en fournissant des bases pour des recherches futures sur le rôle des caractéristiques professionnelles. Sur le plan pratique, elle propose une intervention prête à l'emploi intégrant perspectives individuelles et collectives, offrant ainsi des recommandations concrètes pour soutenir le bien-être, l'équilibre et la performance des employés dans des environnements de travail flexibles.

Mots clé: conceptions de travail flexible, gestion des frontières, numérisation, interventions organisationnelles, performance au travail

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Publications Arising from the Thesis

Manuscripts

Paper 1

Ott, I., Widler, J., Knecht, M., & Meier, L. L. (2021). *Always on – Grenzen ziehen zwischen Arbeits- und Privatleben in der digitalisierten Arbeitswelt*. In B. Badura, A. Ducki, H. Schröder, & M. Meyer (Eds.), *Fehlzeiten-Report 2021* (pp. 217–232). Springer. https://doi.org/10.1007/978-3-662-63722-7_13

Paper 2

Ott, I., Knecht, M., Kuhn, S., & Meier, L. L. (2025). *Boundary management for teams: A longitudinal study on workshop effects and implementation* [Manuscript submitted for publication].

Paper 3

Ott, I., Knecht, M., & Meier, L. L. (2025). *Explaining Work Performance in Flexible Work Designs: The Limited Role of Work-Life Support and Boundary Management from a Job Demands-Resources Perspective* [Manuscript submitted for publication].

Conference Presentation

Ott, I., Widler, J., Meier, L. L., & Knecht, M. (2024, June 6). *A Longitudinal Study Evaluating the Effects of a Boundary Management Workshop for Teams* [Conference presentation]. 16th Conference of the European Academy of Occupational Health Psychology, Granada, Spain. https://eaohp.org/wp-content/uploads/2024/08/EAOHP-2024-BoP_Final.pdf

Introduction

Muss nur noch kurz die Welt, retten

Danach flieg' ich zu dir.

Noch 148 Mails, checken,

Wer weiß was mir dann noch passiert denn es passiert so viel.

Muss nur noch kurz die Welt, retten

Und gleich danach bin ich wieder bei dir. (Bendzko, 2011)

Technological and cultural changes driven by digitalization allow individuals to perform work-related tasks anytime and anywhere using *information and communication technologies* (ICT). The lyrics of the song *Nur kurz die Welt retten* (Bendzko, 2011) illustrate the societal relevance of this phenomenon. They capture how digitalization profoundly shapes everyday behavior and blurs the boundaries between work and private life. Recent data reinforce this development. Around 40% of employees who regularly work from home or other flexible locations are contacted outside regular working hours by colleagues, supervisors, or clients (Eurofound, 2025). Many of these employees feel compelled to respond, influenced by a combination of perceived responsibilities, external expectations, fear of negative consequences, and the need to manage their workload (Eurofound, 2023). Reflecting these pressures, approximately 30% of employees report concerns about work spilling over into personal time and note that it interferes with family life (Eurofound, 2024). At the same time, many employees not only experience challenges but also report benefits from hybrid work. Among the most notable are a stronger sense of balance between work and private life, greater efficiency in managing their time, and an increased perception of productivity (Gallup, 2023).

These findings illustrate two sides of the same coin. On one hand, they empower employees to determine when and where they work, enhancing autonomy and control over their schedules and supporting a better alignment between work and private life (Allen et al., 2015; Shifrin & Michel, 2022). On the other hand, this flexibility is associated with the pressure of being permanently available, intensified work demands, and heightened role ambiguity, and can facilitate the intrusion of work into private life (Bilotta et al., 2021; Ohly & Venz, 2025; Thörel et al., 2022). As a result, blurred boundaries between life domains negatively affect well-being and contribute to work-family conflict (Allen &

French, 2023; Thörel et al., 2022). Taken together, these dynamics make navigating the boundaries between work and private life increasingly challenging and underscore the importance of proactively managing boundaries across life domains. Deliberately shaping and regulating the boundaries between work and private life, commonly referred to as *boundary management* (Ashforth et al., 2000), emerges as a key factor for both employees and the organizations in which they operate.

Therefore, the purpose of this thesis was to advance the enhancement of boundary management within flexible work designs, with the overarching goal of promoting employees' well-being, life domain balance, and work performance.

The first line of inquiry addresses different facets of flexible work designs, including both employees' approach to managing work and private life (ranging from *integration* to *segmentation*) and their mode of ICT use, either by responding to messages as they arrive (*responsive ICT use*) or by proactively initiating work communication or tasks (*initiating ICT use*). To date, research has often examined situations in which employees are contacted about work matters outside regular working hours and engage in supplemental tasks via mobile devices (Thörel et al., 2022). Such typically unplanned and unwanted intrusions of work into private life, conceptualized as extended availability or technology-assisted supplemental work (Dettmers et al., 2016; Ďuranová & Ohly, 2015), have been linked to negative consequences for well-being and life domain balance (Kühner et al., 2023; Thörel et al., 2022). By contrast, these constructs do not fully capture instances in which employees deliberately use the flexibility afforded by such work arrangements to meet their own needs. For example, an employee might choose to work in the evening to free up the afternoon for spending time with family. In such cases, employees actively engage with their tasks rather than being interrupted unexpectedly, while still maintaining boundaries, such as designating specific spaces and times at home for work. This deliberate and self-directed use of flexibility can bring multiple benefits, including greater control over work schedules, better alignment between personal and professional responsibilities, and a reduced risk of work-family conflict (Allen & French, 2023; Day et al., 2019). Consequently, our research was driven by the need to capture the various facets of flexible work designs within a single model integrating boundary theory and the mode of ICT use, with the aim of providing a more nuanced understanding of their effects and deriving actionable recommendations for practice.

The second line of inquiry addresses the design, implementation, and evaluation of a boundary management intervention for individuals working in teams. Prior research suggests that an organizational intervention addressing both individual- and team-directed antecedents of boundary management would be particularly effective, since evidence indicates that antecedents at both levels influence how employees manage their boundaries. At the individual level, employees can, for instance, apply work-family boundary management tactics to facilitate role transitions and maintain separation between domains (Cho et al., 2025; Kreiner et al., 2009). At the team level, antecedents such as behavioral standards and mutual expectations shape how boundaries are managed (Derks et al., 2015; Palm et al., 2020; Reinke & Gerlach, 2022). Nevertheless, despite a clear call for research on team-level boundary management interventions, previous efforts have largely focused on individuals in private settings, often yielding only modest or limited effects (e.g., Althammer et al., 2024; Rexroth et al., 2016; Reinke & Ohly, 2024; Schlachter, 2017). In addition to the findings from boundary management research, insights from intervention research further support the incorporation of the organizational level as a promising avenue to strengthen employees' boundary management, as multilevel approaches have been shown to outperform single-level interventions in organizational health contexts (Aust et al., 2023). In sum, our rationale was that employees' boundary management could benefit most from an intervention combining both individual- and team-level components.

The third line of inquiry focuses on how job characteristics related to work-life support (i.e., supervisory practices that help employees manage work and personal life; Kossek et al., 2023b) and boundary management are linked to work performance (Campbell & Wiernik, 2015), including employees' ability to fulfill their responsibilities and contribute beyond their formal job duties. Our overarching aim was to conceptualize boundary management in ways that foster employees' well-being, life domain balance, and work performance. This aligns with the notion that many organizations establish flexible work designs with the dual objective of supporting employees in achieving better balance across life domains while also enhancing performance (Casper et al., 2025; Kossek et al., 2023a). However, prior research on work-life support and boundary management has mainly focused on well-being and work-family outcomes, addressing work performance largely only at a theoretical level, while empirical evidence on performance-related outcomes remains limited (Cooper & Lu, 2019;

Campbell & Wiernik, 2015; Kossek et al., 2023b). Consequently, the rationale for this third line of inquiry was to extend existing research by explicitly linking job characteristics related to boundary management and work-life support to performance outcomes. In doing so, it sheds light on the conditions that allow flexible work designs to benefit both employees and organizations.

In summary, the literature underscored the importance of boundary management in flexible work designs and revealed three key lines of inquiry for our research. First, there was a need to theoretically integrate the various facets of flexible work designs in relation to boundary management and ICT use. Second, various insights suggested that an organizational intervention addressing the individual and team level could be particularly effective for supporting employees' boundary management. Third, the relationships between job characteristics related to boundary management and work-life support, and work performance outcomes remained to be clarified.

Building on these lines of inquiry, the aim of this thesis was to examine how boundary management can be enhanced within flexible work designs in order to promote employees' well-being, life domain balance, and work performance.

To achieve this aim, three interrelated research objectives were pursued. The first research objective was to develop a theoretical model of flexible work designs that differentiated between key facets of flexible work, namely, employees' approach to managing work and private life and their mode of ICT use. The model was intended to provide a framework for classifying existing empirical findings regarding their potential effects on well-being, life domain balance, and work performance, and for deriving practical recommendations for employees and organizations on what constitutes beneficial boundary management and how it could be achieved. The second research objective focused on designing and evaluating a boundary management intervention for teams. Its objective was to equip individuals working in teams with the competencies needed to improve boundary management at both the individual and team levels. The third research objective examined how job characteristics related to work-life support and boundary management were linked to work performance. Specifically, drawing on the *Job Demands-Resources (JD-R) Theory* (Bakker et al., 2023) it investigated how job resources and job demands, affected employees' work engagement and emotional exhaustion and, in turn, their performance outcomes. Each of these research objectives was explored in detail in one of the three

papers included in this thesis. Paper 1 addresses the development of the theoretical model, Paper 2 focuses on the boundary management intervention for teams, and Paper 3 examines the links between job characteristics, boundary management, and work performance.

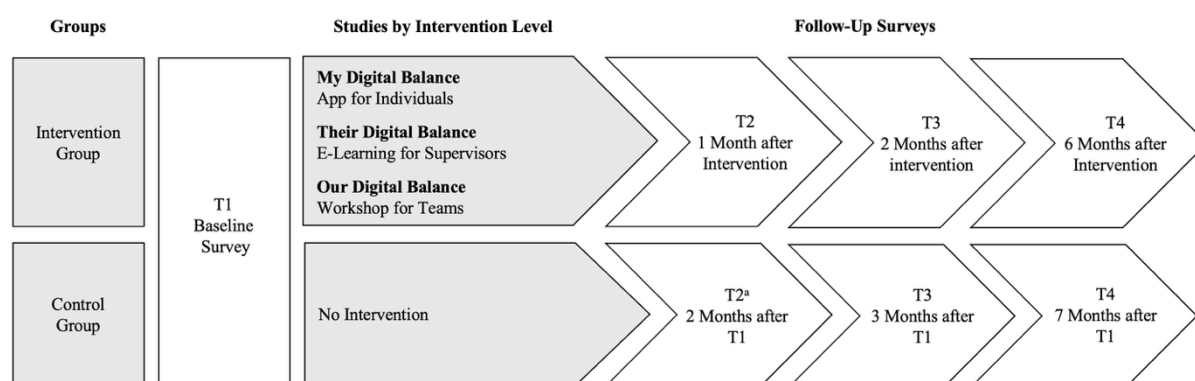
In line with these research objectives, this thesis makes several contributions to both theory and practice. The thesis advances theoretical understanding of boundary management by integrating multiple facets of flexible work into a conceptual model that differentiates between employees' approach to managing work and private life and their mode of ICT use. This model clarifies the conditions under which flexible work can have positive or negative effects, highlighting how boundary management interacts with ICT use. By incorporating both individual- and team-directed antecedents of boundary management, it links individual-level processes with team-level dynamics and provides insights into the mechanisms underlying employees' boundary management. Building on this foundation, the thesis draws on intervention research to offer empirical evidence on how boundary management interventions can be designed and how they influence employees' perceptions and behaviors at both the individual and team level. Furthermore, it examines how job characteristics related to work-life support and boundary management are associated with work performance, providing initial evidence and suggesting directions for future research on designing work environments that sustain employee effectiveness. The thesis translates these theoretical insights into practical solutions for organizations and employees. Drawing on the conceptual model, the thesis provides concrete recommendations for individuals and organizations to support beneficial boundary management in flexible work contexts. In addition, it presents the development and implementation of a team-level boundary management intervention, taking into account insights from the implementation process. This approach ensures that the recommendations can be effectively transferred into practice while simultaneously providing a ready-to-use intervention for organizations. Overall, the thesis delivers integrated contributions by connecting conceptual modeling, intervention design, and empirical evaluation. Its focus on boundary management in the context of ICT use and flexible work, while considering both individual and team perspectives, provides a unique and comprehensive perspective that advances research and informs practice.

Research Project “Digital Balance – Grenzen zwischen Arbeit und Privatleben aktiv Gestalten”

This thesis was situated within the broader research project *Information and Communication Technology and Boundary Management – A Multilevel Intervention Program to Promote Work–Nonwork Balance, Well-Being, and Performance*, which was funded by the Swiss National Science Foundation under the *NRP 77 Digital Transformation* grant. For practical communication purposes, the project was referred to as *Digital Balance – Grenzen zwischen Arbeit und Privatleben aktiv Gestalten*. Led by Prof. Dr. Michaela Knecht (FHNW University of Applied Sciences and Arts Northwestern, Switzerland) and Prof. Dr. Laurenz L. Meier (University of Neuchâtel, Switzerland), the project was conducted from May 2020 to December 2024. The project aimed to investigate the consequences of blurring boundaries between work and private life, particularly the integration of work into private life through ICT use, and to develop interventions that enhance employees’ boundary management in order to foster well-being, life domain balance, and work performance. An overview of the overall research project is presented in Figure 1.

Figure 1

Digital Balance Project: Study Overview



Note. T1-T4 refer to time points of measurement: T1 = baseline; T2-T4 = follow-up surveys, representing the time elapsed since baseline (control group) or intervention (intervention group).

^aThis time frame corresponds to the interval between T1 and T2 in the intervention group, ensuring that data in the control group were collected at equivalent time points.

Three interventions were developed, all grounded in shared theoretical principles but tailored to specific target groups: the app *My Digital Balance* for individuals, the e-learning program *Their Digital*

Balance for supervisors, and the workshop *Our Digital Balance* for teams. The effectiveness of each intervention was evaluated against a control group.

In the context of the overall research project, Paper 1 of this thesis provides the theoretical foundation for all three interventions, outlining the conceptual model of boundary management in the context of flexible work designs and ICT use. Building on this foundation, Paper 2 examines the effects of the teamworkshop *Our Digital Balance* on individuals’ boundary management. Paper 3 specifically focuses on the outcome of work performance, investigating how job characteristics related to boundary management and work-life support were associated with employees’ ability to perform their tasks effectively and to engage in extra-role behaviors.

Theoretical Background

This thesis aimed to explore how boundary management can be enhanced within flexible work designs to promote employees' well-being, life domain balance, and work performance. The following section presents the theoretical foundations that underpin this research.

Flexible Work Designs as Drivers of Work-Nonwork Integration

Digitalization has particularly transformed jobs that can be performed with the support of ICTs. Unlike other occupations that are bound to specific times and locations, such as working at a supermarket checkout, employees in ICT-based roles can now carry out their tasks virtually anytime and from almost any location due to technological advancements (Day et al., 2019). These forms of work, also referred to as new ways of working or flexible work designs (Althammer et al., 2024; Demerouti et al., 2014), provide the foundation for integrating work into private life.

Regarding the technological aspects of flexible work designs, the *mode of ICT use* plays a critical role in shaping how employees manage the boundaries between work and private life (Wang et al., 2020). When individuals are available for work-related messages on their mobile devices and respond as they arrive, this represents *responsive ICT use* (Derks & Bakker, 2010; Rennecker & Godwin, 2005). If such responsiveness occurs during personal time, work can intrude unexpectedly, and sometimes undesirably, into private life, blurring the boundaries between life domains (Allen et al., 2014). In contrast, when individuals proactively engage with work-related tasks or initiate contact with others, they are exhibiting *initiating ICT use* (Derks & Bakker, 2010; Rennecker & Godwin, 2005). For instance, this might involve completing tasks that were postponed due to afternoon childcare responsibilities. In such cases, the transition from private life to work is intentional and planned. Initiating ICT use generally affords greater autonomy than responsive ICT use, although this advantage may be diminished under external pressures, such as high workload (Wang et al., 2020). These distinctions underscore the role of ICT use in either facilitating or challenging employees' boundary management.

Technological advancements, such as mobile devices, provide the foundation for employees to access work-related content outside of the traditional work context. However, these technological developments are accompanied by numerous cultural changes that further facilitate the blurring of

boundaries between work and private life. Three aspects are particularly relevant to this thesis. First, even when organizations have implemented a right-to-disconnect policy at the structural level, the prevailing work culture often leads to these rules being circumvented. This is evident, for example, in employees being contacted and completing work-related tasks outside of regular working hours (Eurofound, 2023). Second, employees increasingly act as entrepreneurs within their organizations, bearing higher responsibility for achieving goals (Mustafić et al., 2021). This can lead for example to unfinished tasks being completed during personal time to meet objectives (Eichberger et al., 2022). Third, alongside the increasing emphasis on individual responsibility, forms of collaboration are evolving. The role of teamwork in organizational settings has grown, particularly through agile methods, and collaboration increasingly occurs independently of time and location (Junker et al., 2022; Kaplan et al., 2016). Enhanced networking and the possibility of asynchronous work facilitate the receipt of work-related messages by employees outside regular working hours (van Zoonen et al., 2021).

Evidence suggests that these trends contribute to more complex work, intensified workload, expectations of continuous availability, unclear roles and greater self-regulatory demands (Bilotta et al., 2021; Ohly & Venz, 2025; Thörel et al., 2022; Troll et al., 2022). As a result, navigating the interface between work and private life has become increasingly challenging (Allen & French, 2023), making boundary management a critical competence for employees.

Boundary Management in the Work-Nonwork Interface

In light of the technological and cultural changes associated with digitalization and flexible work designs, individuals need to engage with how to establish and maintain boundaries between their roles and life domains to reduce complexity and create a sense of structure in managing their daily lives (Ashforth et al., 2000). According to *boundary theory* (Ashforth et al., 2000) people manage their boundaries between work and private life along a continuum. Segmentation refers to a clear separation of life domains with little or no overlap, whereas integration describes weaker boundaries that allow overlaps across time and place. Individuals' boundary-related behavior in daily life is reflected in their *integration enactment* (Cobb et al., 2022), which describes the extent to which people integrate their roles or life domains in daily life (Ashforth et al., 2000; Kossek et al., 2012). In this context, in Paper 2, we defined *boundary management interventions* as interventions designed to help individuals navigate

work-life boundaries, reduce work-family conflict, and promote well-being and performance across life domains, drawing on the definition of work-life interventions (Kossek et al., 2016). We conceptualize them as health interventions in the workplace, that “aim to improve individual, group and/or organisational outcomes by mitigating or preventing problems, or by promoting positive outcomes” (von Thiele Schwarz et al., 2020, p. 1). As with other health interventions, they may target multiple levels, such as the individual, supervisor, group, or organization (Nielsen et al., 2017).

Boundary theory highlights several conditions conducive to beneficial boundary management (Ashforth et al., 2000). First, it is important that individuals clearly recognize which role or domain is currently dominant, enabling distinct role transitions. Second, unintentional interruptions and boundary violations should be minimized, as they deplete energy and increase role conflict. When these conditions are met, boundaries remain clear and blurring is reduced. Flexible work designs, however, increase both the *flexibility* and *permeability* of boundaries between life domains (Allen et al., 2014; Allen & French, 2023). Flexible boundaries allow employees to switch roles easily, for example by working from home, while permeable boundaries indicate the extent to which work-related messages and tasks can penetrate private life, such as receiving emails or messages on a smartphone during personal time. Consequently, flexible work designs also raise the risk of unclear role transitions and interruptions, increasing boundary violations and the blurring of boundaries. On the other hand, the authors also note that the proximity of life domains offers employees greater autonomy and facilitates effortless shifts between life domains, thereby reducing the energy required for transitions, for example by saving commuting time (Allen et al., 2014; Allen & French, 2023).

In summary, our main challenge regarding flexible work designs was to identify the conditions under which employees could maintain clear role transitions and minimize interruptions, while at the same time benefiting from the proximity of life domains. This focus was addressed in Paper 1 on a theoretical level, extended to team-level interventions in Paper 2, and linked to work performance outcomes in Paper 3.

Antecedents of Boundary Management and Their Role for Well-Being, Life Domain Balance, and Work Performance

While Paper 1 focuses on developing a theoretical model to differentiate facets of flexible work designs in relation to boundary management and ICT use, Papers 2 and 3 are based on the premise that specific antecedents within the fields of boundary management and work-life support are linked to boundary management and distal outcomes, including well-being, life domain balance, and work performance. In Paper 2, these antecedents were conceptualized as factors that can shape boundary management. They served as the basis for developing and evaluating an intervention for teams aimed at enhancing employees' boundary management. Building on the levels addressed by our intervention, we distinguished between *individual-* and *team-directed antecedents*, both of which reflect individual perceptions and are measured at the individual rather than the aggregated team level. In Paper 3, we proposed that the team-directed antecedents addressed not only shape employees' boundary management behaviors but also constitute job characteristics with implications for outcomes such as work performance. Therefore, the team-directed antecedents were considered as job characteristics within the JD-R theory and categorized as job resources or job demands. The focus was on understanding how job characteristics related to work-life support (Kossek et al., 2023b) and boundary management affect work performance. In the following sections, we present individual- and team-directed antecedents separately. Aligning with the structure of Paper 3, the team-directed antecedents are further categorized according to the JD-R theory into job resources or job demands.

Individual-Directed Antecedents

Regarding individual-directed antecedents, boundary management research has predominantly focused on work-family boundary management tactics.

Work-family boundary management tactics. Individuals use *work-family boundary management tactics* as goal-oriented behaviors to sustain clear boundaries between life domains and to reduce the likelihood of involuntary boundary crossings (Cho et al., 2025; Kreiner et al., 2009). For instance, employees working from home may use physical cues (e.g., changing clothes before and after work), temporal tactics (e.g., scheduling fixed time blocks for work and leisure), technical aids (e.g., smartphone settings to control usage periods and notifications), and social tactics (e.g., coordinating

private obligations with colleagues) to manage boundaries effectively (Cho et al., 2025). The mechanism through which work-family boundary management tactics operate lies in facilitating clear role transitions, allowing individuals to mentally and behaviorally switch between roles (Ashforth et al., 2000; Kreiner et al., 2009). In this way, work-family boundary management tactics help individuals to be fully engaged in the respective life domain, rather than remaining in a blurred or overlapping state between work and private life. Empirical evidence indicates that boundary management tactics enhance perceived control over boundaries between work and private life (Haun et al., 2022; Reinke & Ohly, 2024), foster recovery (Binnewies et al., 2020; Haun et al., 2022), enhance work engagement, and buffer against emotional exhaustion (Binnewies et al., 2020; Haun et al., 2022). Moreover, they reduce work-family conflict (Binnewies et al., 2020; Kubicek & Tement, 2016) and support balance between work and nonwork roles (Allen et al., 2021; Jostell & Hemlin, 2018).

In the context of this thesis, work-family boundary management tactics were particularly relevant for the intervention in Paper 2, as they emphasize the role of employees' individual proactive strategies in shaping boundary management.

The following section turns to the team-directed antecedents.

Team-Directed Antecedents

Team directed antecedents were considered both as levers for the intervention (Paper 2) and as job characteristics conceptualized within the JD-R theory (Paper 3).

In short, the *JD-R theory* (Bakker et al., 2023) provides a framework for understanding how job characteristics influence work performance. It differentiates between job demands, which involve sustained effort and impose costs, and job resources, which facilitate the attainment of work objectives, reduce demands, and promote personal development. These elements operate through two core processes: the motivational process, where resources enhance work engagement and performance, and the health-impairment process, where excessive demands contribute to burnout and reduced performance (Bakker et al., 2023). An overview of the categorization of the team-directed antecedents within the JD-R theory is presented in Table 1.

Table 1

Team-Directed Antecedents of Boundary Management and Employee Outcomes, Categorized as Job Resources and Job Demands

	Job Resources	Job Demands
Team-directed antecedents	Work-Life Supportive Leadership ^b	Integration Norms ^{ab}
	Family-Supportive Team Behavior ^a	Norm Ambiguity ^b
	Boundary Control ^{ab}	(Positive Form: Norm clarity ^a)

Note. ^a Proximate or intermediate outcomes of the intervention in Paper 2.

^b Job characteristics in Paper 3.

First, the team-directed antecedents considered as job resources are described.

In addition to boundary control, they encompass two constructs rooted in work-life research, namely work-life supportive leadership (Hammer et al., 2009; Kossek et al., 2023b) and family-supportive team behavior, which was developed as part of Paper 2 (adapted from Hammer et al., 2009). Supervisor and team sensitivity, along with support for employees' non-work responsibilities, were thought to play a key role in enabling beneficial boundary management between work and private life. This perspective aligns with earlier theory and research on *work-family culture* (Thompson et al., 1999), which integrates aspects of work-life support with elements of boundary management, such as social norms regarding the integration of work and private life.

Work-Life Supportive Leadership. A central team-directed antecedent of boundary management is *work-life supportive leadership* (Kossek et al., 2023b). Building on the concept of *family-supportive supervisor behavior* (Hammer et al., 2009; Hammer et al., 2013), work-life supportive leadership is defined as supervisor behaviors that “(a) prioritize actions to provide active support for employees' needs and preferences for managing work, family, and personal life roles and (b) are experienced by subordinates as demonstrating such behaviors” (Kossek et al., 2023b, p. 186).

From a theoretical perspective, work-life supportive leadership functions as a job resource by supervisors helping their employees in various ways to manage their work–life interface (Kossek et al., 2018; Kossek et al., 2024).

This support can manifest as emotional support, where supervisors show understanding and empathy for private matters; as instrumental support, providing practical help in cases of work-life conflicts; as creative work-family management, finding innovative ways to support employees' non-work responsibilities; and as role-modeling behaviors, with supervisors serving as examples of effective boundary management (Hammer et al., 2009; Kossek et al., 2023b). Research consistently shows that work-life supportive leadership has beneficial effects, including higher work engagement, better physical health, reduced stress, burnout, and reduced work-family conflict, and may also contribute to employees' work performance (Crain & Stevens, 2018; Guo et al., 2024; Hao et al., 2025; Kossek et al., 2023b).

Family-Supportive Team Behavior. Evidence from theory and research on workplace social support highlights that such support can stem from different sources, encompassing both supervisors and coworkers (Crain & Stevens, 2018; Kossek et al., 2011). Findings from a study on boundary adaptation during the COVID-19 pandemic underscore the role of team support in boundary management, with social support from coworkers and supervisors identified as a crucial strategy for handling blurred boundaries (Kossek et al., 2021). Building on this, in Paper 2 we transferred the support dimensions of work-life supportive leadership, respectively family-supportive supervisor behavior, to the team level and developed the construct of *family-supportive team behavior*. Aligned with the concept of work-life supportive leadership (Hammer et al., 2013; Kossek et al., 2023b), family-supportive team behavior captures the extent to which team members actively support one another in managing the interface between work and private life. By providing emotional support, such as encouraging open discussions about work-life conflicts, instrumental support, such as assisting during high workload periods, and creative support, such as arranging clear coverage for tasks, team members can lessen the demand to engage in work or to stay connected during their personal time.

In this thesis, both Paper 2 and Paper 3 build on the concept of work-life supportive behavior. Paper 2 incorporated family-supportive team behavior into the design of the boundary management intervention, while Paper 3 examined work-life supportive leadership as a job resource within the JD-R theory to explain employees' work performance.

Boundary Control. Another team-directed antecedent of boundary management is *boundary control*, which refers to the degree to which individuals perceive they can regulate work-life boundaries according to their identities and personal needs within the organizational context (Kossek et al., 2012). The functioning of boundary control is based on employees' perceived autonomy over the boundaries between work and private life, allowing them to adjust these boundaries in line with their individual needs (Bilotta et al., 2021; Kossek et al., 2023a). For instance, an employee may intentionally integrate work and family by answering work-related messages in the evening after family time, reflecting high boundary control despite high integration enactment. In contrast, feeling compelled to be constantly available may indicate high integration enactment but low boundary control. Research suggests a critical role of boundary control in enabling employees to manage the interface between work and private life effectively. Higher levels of boundary control have been associated with greater well-being, lower stress, and reduced work-family conflict (Kossek et al., 2012; Park et al., 2020; Piszczek, 2017), and there are also initial indications that they may improve work performance, partly by enhancing employees' work engagement (Giauque et al., 2022).

In this thesis, boundary control was conceptualized in two ways. In Paper 2, it was considered an aspect of boundary management, reflecting employees' ability to regulate their boundaries effectively in addition to integration enactment. In Paper 3, boundary control was examined as a job characteristic that reflects the underlying work culture. It was assumed that, as a job resource within the JD-R theory, it might foster work engagement and thereby positively affect work performance.

In the following, the team-directed antecedents considered as job demands are described, namely integration norms and norm ambiguity, or conversely, norm clarity.

Integration Norms. *Integration norms* represent an important antecedent. Based on the concept of social norms (Cialdini & Trost, 1998) and research on boundary management (Derks et al., 2014), integration norms can be defined as common behavioral standards within a social group regarding appropriate behaviors related to work-life integration in an organization. These norms can guide how individuals adjust their own behavior and create internalized pressure to conform (Derks et al., 2014). For example, integration norms often manifest in perceived expectations that employees remain constantly available or complete work tasks outside of regular working hours. Such demands may extend

working time into private life and foster a constant cognitive connection to work, even during non-work periods (Bilotta et al., 2021). Empirical studies consistently show that strong integration norms are associated with detrimental outcomes, including lower well-being, reduced psychological detachment, and increased work-family conflict (Derks et al., 2014; Gadeyne et al., 2018; Son et al., 2018).

In the context of this thesis, reducing integration norms was considered a focal point for the team intervention in Paper 2. In Paper 3, integration norms were considered as a job demand within the JD-R theory, that might increase emotional exhaustion and thereby negatively affect work performance.

Norm Ambiguity – Norm Clarity. Closely aligned with the concept of integration norms is the concept of norm ambiguity, or respectively norm clarity. Building on research on social norms (Cialdini & Trost, 1998; Derks et al., 2014) and team processes (Wagemann et al., 2005), we introduced the concept of *norm ambiguity* in Paper 3 and defined it as the degree to which existing integration norms are unclear or poorly communicated, especially regarding behavioral standards and shared expectations within a team about the integration of work and private life. In contrast, we defined *norm clarity* as the extent to which existing integration norms are clear and well communicated in Paper 2. In flexible work settings, where mutual expectations or behavioral standards are vague, individuals often use the behavior of others as a reference point for their own actions (Cialdini & Trost, 1998; Heissler et al., 2024). As a result, integration norms may emerge and the integration of work into private life can become a self-reinforcing pattern, even without explicit expectations within the team. In this sense, norm ambiguity may function as a job demand that fosters emotional exhaustion and negatively affects outcomes, such as work performance. However, clarifying mutual expectations might reduce ambiguity around availability (Heissler et al., 2024) and help to establish behavioral guidelines (Day et al., 2019; Palm et al., 2020). First empirical evidence supports the relevance of this construct. Heissler et al. (2024) showed that ambiguity regarding availability expectations is conceptually distinct from integration norms. In addition, employees experiencing high availability ambiguity tend to struggle to mentally detach from work, show higher emotional exhaustion, and experience greater interference between work and home (Heissler et al., 2024), highlighting its role as a job demand.

In the context of this thesis, Paper 2 aimed to enhance norm clarity in the team workshop. In Paper 3, norm ambiguity was considered as a job demand within the JD-R theory, which might increase emotional exhaustion and thereby negatively affect work performance.

Summary

In summary, technological and cultural changes associated with digitalization have reinforced the integration of work into private life. Flexible and permeable boundaries increase the likelihood of frequent, often unplanned role transitions and, in some cases, unwanted boundary violations. At the same time, the proximity of life domains and the possibility to proactively engage in work-related tasks via ICT, offer employees greater autonomy and facilitates effortless shifts between domains, thereby reducing the effort required for transitions. However, given the rapid transformations brought about by digitalization, a conscious engagement with and deliberate shaping of boundaries between work and private life is essential for employees.

Each of the three papers takes up these considerations in a distinct way. Paper 1 addresses the different facets of flexible work designs, differentiating between employees' approach to managing work and private life and their mode of ICT use, using these insights to develop a theoretical model. Building on this foundation, Paper 2 develops a team intervention, drawing on the premise that both individual- and team-directed antecedents affect how employees manage boundaries between work and private life. Finally, Paper 3 conceptualizes the team-directed antecedents as job characteristics and examines, within the JD-R theory, their potential associations with work performance.

Presentation of Papers

Overview and Main Findings

This chapter offers an overview of the three papers included in the thesis, summarizing the background, objectives, methods, and main findings of each. The full papers are then presented in sequence, after which their results are brought together and discussed in an integrative manner in the general discussion.

Paper 1. Always on – Grenzen ziehen zwischen Arbeits und Privatleben in der digitalisierten Arbeitswelt

Paper 1 lays the theoretical foundation for the subsequent intervention study. The main objective was to develop a theoretical model that differentiates between employees' approach to managing work and private life and their mode of ICT use. The model was intended to provide a basis for estimating the potential implications of these derived categories for well-being, life domain balance, and work performance, as well as for deriving recommendations for individuals, supervisors, and teams. Drawing on Boundary Theory and research on ICT use, we developed the model *Modell der digitalen Arbeitsformen (Model of Digital Work Designs)* that distinguishes four categories of flexible work designs: (1) *segmenting-responsive*, (2) *integrating-responsive*, (3) *integrating-initiating*, and (4) *segmenting-initiating*. Existing empirical findings were subsequently mapped onto these categories. Regarding outcomes, prior studies primarily reported implications for well-being and life domain balance, whereas evidence on work performance was scarce. The results suggest that high integration combined with high responsiveness, comparable to the concept of extended availability, entails the greatest risks for well-being and life domain balance. For instance, individuals who frequently respond to work-related messages in the evening may experience elevated stress levels. Conversely, those who combine initiating ICT use with segmentation of work and private life tend to report more favorable outcomes. For example, employees who work remotely from a separate room during fixed working hours may experience greater well-being, as they save the time that would otherwise be spent commuting. The effects of high integration combined with initiating ICT use are less clear. Positive outcomes may occur when such work patterns are intrinsically motivated, for example, a research assistant pursuing personal interests in a topic during leisure time. In contrast, such patterns tend to have

negative effects when driven by excessive workload, leading to extended working hours and reduced recovery, such as a manager working evenings and weekends to meet monthly targets. Based on these insights, we derived characteristics of beneficial boundary management, including minimizing responsive ICT use during private time and promoting spatial and temporal segmentation between work and private life, even in mobile settings, for example by clearly scheduling working hours in a separate home office. Considering antecedents of boundary management, recommendations included individuals using work-family boundary management tactics, and supervisors and teams focusing on lowering integration norms and clarifying mutual expectations. These recommendations were subsequently incorporated into the development of the team workshop on boundary management.

Paper 2. A Longitudinal Study Evaluating the Effects of a Boundary Management Workshop for Teams

Building on the antecedents of boundary management and drawing on the recommendations derived from Paper 1, the next step was to develop and evaluate an intervention aimed at enhancing boundary management for individuals working in teams. The intervention involved a half-day workshop, delivered either online or on-site. The workshop was designed to foster participants' use of work-family boundary management tactics by encouraging them to reflect on and adapt their current strategies to better align with their individual needs. Integration norms and norm clarity were addressed by clarifying mutual expectations within the team and developing shared behavioral standards. Family-supportive team behavior was promoted through the provision of emotional, instrumental and creative support among team members. The workshop was evaluated using a quasi-experimental longitudinal design. The intervention group ($N = 432$ participants from 52 teams in Switzerland and Germany) provided data at baseline and at one, two, and six months post-workshop. Comparable data were collected from a control group ($N = 792$) at corresponding time points. Multilevel analyses indicated that participants in the intervention group reported increased use of work-family boundary management tactics and higher perceived boundary control up to six months after the workshop, compared to the control group. Participants also integrated work less strongly into their private lives, although no significant differences were observed relative to the control group on this outcome. Regarding team-directed outcomes, participants perceived higher norm clarity and greater work-life support among the

team up to six months after the workshop. Notably, contrary to our initial hypothesis, integration norms did not decrease despite changes in individual behavior and increased norm clarity. Analyses of the implementation process revealed that participants who rated the workshop and their teams' action plans more positively also reported stronger reductions in integration norms and integration enactment. No significant differences were observed between the online and on-site formats. In summary, the workshop contributed to improvements in individual boundary management, family-supportive team behavior and norm clarity among the team members, providing both theoretical and practical insights for fostering boundary management within teams.

Paper 3. Explaining Work Performance in Flexible Work Designs: The Limited Role of Work-Life Support and Boundary Management from a Job Demands-Resources Perspective

Building on the aim to conceptualize boundary management in ways that foster employees' well-being, life domain balance, and work performance, Paper 3 sought to contribute to the understanding of how job characteristics related to work-life support and boundary management are associated with employees' work performance. Drawing on JD-R theory and prior empirical research, we conceptualized work-life supportive leadership and boundary control as job resources, and integration norms and norm ambiguity as job demands. We hypothesized that these job resources and demands would influence work performance indirectly via work engagement and emotional exhaustion, respectively. These hypotheses were tested in a three-wave longitudinal study among employees engaged in flexible work designs in Switzerland and Germany. Structural equation modeling was used to test indirect effects on employees' self-rated performance (T1: $N = 1019$; T2: $N = 840$; T3: $N = 329$) and supervisor-rated work performance (T1: $N = 486$; T2: $N = 428$; T3: $N = 386$). The findings provided limited support for the proposed model. Indirect effects via work engagement were observed only for work-life supportive leadership, whereas boundary control, integration norms, and norm ambiguity did not show significant mediating effects. Further analyses revealed a direct positive effect of boundary control on contextual performance, while integration norms were positively associated with emotional exhaustion. Supervisor-rated performance was not predicted by any of the job characteristics examined. Overall, the results partially supported our hypotheses, but they were not sufficient to draw firm

conclusions about the relationship between job characteristics related to work-life support and boundary management and work performance, nor to derive clear actionable recommendations.

Paper 1. Always on – Grenzen Ziehen zwischen Arbeits- und Privatleben in der Digitalisierten Arbeitswelt

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Reference

Ott, I., Widler, J., Knecht, M., & Meier, L. L. (2021). *Always on – Grenzen ziehen zwischen Arbeits- und Privatleben in der digitalisierten Arbeitswelt*. In B. Badura, A. Ducki, H. Schröder, & M. Meyer (Eds.), *Fehlzeiten-Report 2021* (pp. 217–232). Springer. https://doi.org/10.1007/978-3-662-63722-7_13

Short Title:

Paper 1. Always on – Grenzen Ziehen

Zusammenfassung

Die technischen und kulturellen Entwicklungen der digitalen Transformation machen Arbeit quasi immer und überall verfügbar. Indem digitales Arbeiten flexibler wird, steigt die Integration unserer Lebensbereiche und die Grenzen zwischen Arbeits- und Privatleben beginnen zu verschwimmen. Digitale Arbeit kann in Abhängigkeit von der Informations- und Kommunikationstechnologie (IKT) und der Ausprägung der Integration der Lebensbereiche unterschiedliche Formen annehmen. Das neu entwickelte Modell der digitalen Arbeitsformen beschreibt diese und zeigt auf, warum segmentierendes und initiiertes digitales Arbeiten förderlicher für die Gesundheit, die Leistungsfähigkeit und die Vereinbarkeit von Arbeits- und Privatleben ist als integrierendes und responsives digitales Arbeiten. Es zeigt, wie konkrete Handlungsempfehlungen für Individuen, Führungskräfte und Teams aussehen können, damit es gelingt, vorteilhafte digitale Arbeit aktiv zu gestalten.

1. Digitales Arbeiten als Zukunftstrend mit Chancen und Risiken

Die digitale Transformation verändert unsere Arbeitswelt in rasantem Tempo. Sogenannte New Ways of Working (NWW) zeichnen sich durch moderne IKT aus, die es ermöglichen, unmittelbar und quasi zu jeder Zeit und an jedem Ort zu arbeiten (Demerouti et al., 2014). 2019 lag der Anteil der erwerbstätigen Personen in Deutschland, die wenigstens gelegentlich im Homeoffice arbeiteten, bei 13 % (Statistisches Bundesamt [Destatis], 2021). Während des ersten Lockdowns in der Corona-Pandemie verdreifachte sich der Anteil fast auf 35 % (Schröder et al., 2020). Die COVID-19 Pandemie sorgte für einen „unfassbaren Schub in Bezug auf Digitalisierung“ (Meyer & Hofmann, 2021), wobei die Konnektivität auch für die kommenden Jahre als „Megatrend“ gehandelt wird (Papasabbas & Pfuderer, 2021). Gleichzeitig gehen NWW auch mit zahlreichen Veränderungen der Arbeitskultur und -gestaltung einher (Kingma, 2019; Wang et al., 2020). Kommunikationsprozesse beschleunigen sich, Kollaboration gewinnt an Bedeutung und ergebnisorientierte Formen der Leistungssteuerung sowie vertrauensbasierte Regelungen zur Arbeitszeit nehmen zu (Kingma, 2019; Krause et al., 2015b; Spreitzer et al., 2017). Diese Entwicklung bringt einen hohen Grad an Flexibilisierung für Arbeitende mit sich, gleichzeitig verlagert sich damit auch die Verantwortung für die Arbeitsgestaltung hin zum Arbeitenden (Kingma, 2019). So hat etwa jeder vierte Deutsche den Eindruck, es werde oft oder sehr häufig von ihm erwartet, außerhalb der normalen Arbeitszeiten erreichbar zu sein (Institut DGB-Index

Gute Arbeit, 2015) zudem arbeiten 15 % mehrmals pro Monat oder häufiger in ihrer Freizeit, um die Arbeitsanforderungen zu erfüllen (Eurofound, 2020). Doch was bedeutet es für Arbeitende, wenn durch den Laptop die Arbeit abends zuverlässig neben einem auf der Couch liegt und die Kollegen durch das Smartphone in der Hosentasche ständig mit dabei sind? Der digitale Wandel und die damit verbundene Integration der Lebensbereiche werden in der Forschung in ihren Auswirkungen als paradox beschrieben (Day et al., 2019). Während erhöhte Flexibilität und Vereinbarkeit von Familie und Beruf als Chance gehandelt werden (Allen et al., 2015; Demerouti et al., 2014; Towers et al., 2006), sieht man in der „Always-on“- Mentalität (Derks et al., 2015; McDowall & Kinman, 2017), dem „Technostress“ und dem „Telepressure“ (Ayyagari et al., 2011; Barber & Santuzzi, 2015) eine Gefahr für die Gesundheit der Betroffenen. Um möglichst viele Vorteile nutzen und die Risiken minimieren zu können, ist es daher wichtig, die verschiedenen Formen des digitalen Arbeitens und ihre Auswirkungen auf die Gesundheit, die Leistungsfähigkeit und die Vereinbarkeit von Arbeits- und Privatleben im Detail zu verstehen. In diesem Beitrag wird, aufbauend auf bisheriger Forschung, ein neues Modell eingeführt, das verschiedene Formen des digitalen Arbeitens beschreibt, eine systematische Einordnung bisheriger empirischer Ergebnisse zulässt und dabei unterschiedliche – sowohl positive als auch negative – Folgen der verschiedenen Formen des digitalen Arbeitens aufzeigt. Darauf aufbauend werden konkrete Handlungsempfehlungen für verschiedene Zielgruppen abgeleitet.

2. Digitale Transformation und die Abgrenzung von Arbeits- und Privatleben

Das digitale Arbeiten wird in diesem Beitrag als das Arbeiten mit IKT definiert. IKT sind „Technologien oder elektronische Geräte, die Informationen empfangen, verarbeiten, speichern und versenden können“ (Steinmueller, 2000, S. 361), z. B. Laptops, Smartphones oder Tablets bzw. E-Mail-Clients, Messenger-Apps oder Dienste zum Kalendermanagement. In Anlehnung an die NWW kann die Arbeit dabei zu flexibler Zeit an einem flexiblen Ort (z. B. abends im Homeoffice) verrichtet werden oder entsprechend klassischer Arbeitsformen zu geregelten Zeiten an einem festen Arbeitsort stattfinden (z. B. Kernarbeitszeit im Büro). Die digitale Transformation verändert sowohl das Nutzungsverhalten von IKT als auch das Verhältnis von Arbeits- und Privatleben. Aufgrund der arbeitskulturellen und technischen Veränderungen laufen asynchrone Kommunikationsprozesse annähernd synchron ab (z. B. Instant Messaging). Funktionen von Hard- und Software (z.B. akustische

oder visuelle Signale, die auf Instant-Messages aufmerksam machen) unterbrechen den Empfänger und animieren ihn dazu, Nachrichten sofort zu lesen und zu beantworten. Arbeitende können zudem von überall und jederzeit arbeiten. Fehlende Regelungen zum Umgang mit IKT und eine Erreichbarkeitskultur verstärken diese Anforderungen (Derks & Bakker, 2010; Wilkes et al., 2017), sodass ohne aktives Gegensteuern die Grenzen zwischen Arbeits- und Privatleben leicht verschwimmen können. Um Chancen und Risiken des digitalen Arbeitens differenziert abzubilden und um Veränderungen der digitalen Transformation sichtbar zu machen, wird das digitale Arbeiten in diesem Beitrag unter zwei theoretischen Perspektiven betrachtet. Die erste Perspektive beschreibt das Nutzungsverhalten von IKT und die zweite das Verhältnis von Arbeits- und Privatleben beim digitalen Arbeiten. Die wesentliche Funktion von IKT liegt in der Aufgabenbearbeitung in Verbindung mit Kommunikationsprozessen (Wang et al., 2020), wobei man zwischen initiiender und responsiver IKT-Nutzung differenzieren kann (Rennecker & Godwin, 2005). Kontaktiert eine Person eine andere, so nutzt sie ihre IKT initiiierend (z. B. eine Chat-Nachricht schicken). Ist eine Person mittels IKT erreichbar und reagiert sie auf Kontaktanfragen oder Nachrichten, so nutzt sie ihre IKT responsiv (z. B. eine Chat-Nachricht beantworten) (Derks & Bakker, 2010; Rennecker & Godwin, 2005). Ein initiiierendes Verhalten einer Person kann bei einer anderen Person responsives Verhalten erzeugen. Die Boundary Theory (Ashforth et al., 2000) stellt auf einem Segmentations-Integrations-Kontinuum dar, wie groß der Abstand zwischen verschiedenen Lebensbereichen – hier zwischen Arbeits- und Privatleben – ist. Ein hohes Maß an Segmentation bedeutet eine klare Trennung. Je näher sich Arbeit und Privatleben sind bzw. je mehr sich beides überschneidet, desto stärker ist die Integration ausgeprägt. Die Flexibilität und die Permeabilität sind zwei Parameter, die die Stärke der Grenzen zwischen den Lebensbereichen bestimmen (Ashforth et al., 2000). Eine hohe Flexibilität lässt zu, dass die Arbeitsrolle auch im Privaten einfach eingenommen werden kann. Sie wird häufig durch die Arbeitsbedingungen bestimmt (z. B. Möglichkeit zum Homeoffice) (Allen et al., 2014). Ist die Permeabilität hoch, so sind die Grenzen zwischen Arbeits- und Privatleben durchlässig (z. B. Erhalten von arbeitsbezogenen Nachrichten in der Freizeit) (Ashforth et al., 2000). Aus der Arbeitssituation ergeben sich Integrationsanforderungen, die auf Arbeitende einwirken. Integrationsanforderungen werden in diesem Beitrag als Arbeitsbedingungen definiert, die dazu führen, dass die Integration von Arbeits- und

Privatleben bei Arbeitenden steigt. In Anlehnung an Kossek (2016a) werden dabei formelle Integrationsanforderungen, die sich aus festen Regeln und organisationalen Strukturen ergeben (z. B. Stellen eines Firmenhandys), und informelle Integrationsanforderungen, die aus sozialen Normen entstehen (z. B. übliche Erreichbarkeit außerhalb der Arbeitszeit im Team), unterschieden. Boundary Management (Ashforth et al., 2000) beschreibt, wie Menschen auf Integrationsanforderungen reagieren und die Grenzen zwischen verschiedenen Lebensbereichen herstellen und aufrechterhalten. Menschen wenden dazu unterschiedliche Segmentationsstrategien an (Kreiner et al., 2009). Im Rahmen der digitalen Transformation können viele der persönlichen Segmentationsstrategien (z. B. den Computer im Büro „hinter sich“ lassen) nicht mehr angewendet und müssen angepasst oder neu entwickelt werden (z.B. Laptop nach dem Arbeitstag aus dem Sichtfeld entfernen, getrennte Apps für Geschäftliches und Privates auf dem Smartphone nutzen).

3. Modell der digitalen Arbeitsformen und deren Auswirkungen auf Gesundheit, Leistungsfähigkeit und die Vereinbarkeit von Arbeits- und Privatleben

Ziel ist es, die Chancen und Risiken des digitalen Arbeitens einzuordnen und zu verstehen, wo Interventionen zur Vereinbarkeit von Arbeits- und Privatleben ansetzen können. Dazu werden die Wechselwirkungen zwischen dem Ausmaß an Integration bzw. Segmentation und der IKT-Nutzung berücksichtigt. Die IKT-Nutzung ist meistens eine Mischung aus responsivem und initiiertem Verhalten, die jedoch je nach Tätigkeit einen größeren Schwerpunkt in eine Richtung aufweisen kann. Das *Modell der digitalen Arbeitsformen* betrachtet die IKT-Nutzung in Abhängigkeit von der Ausprägung der Integration bzw. Segmentation. Daraus ergeben sich vier Formen des digitalen Arbeitens (Abbildung 1), die im Folgenden erläutert und hinsichtlich ihrer Chancen und Risiken beschrieben werden.

3.1. Segmentierend-responsives digitales Arbeiten

Ein(e) Angestellte(r) mit viel Kundenkontakt und Koordinationsaufgaben befindet sich hauptsächlich im responsiven digitalen Arbeiten. Durch viele Unterbrechungen, häufige Wechsel zwischen Aufgaben und dem zeitigen Beantworten von Nachrichten kommt es zu Rollenwechseln innerhalb der Arbeitsrolle und einer eingeschränkten Autonomie in der Planung des Arbeitsablaufs (Rennecker & Godwin, 2005; Wilkes et al., 2017). Wenn durch klare Erreichbarkeitszeiten oder eine

Übergabe nach Schichtende die Arbeit begrenzt wird, kann nach Beenden der Arbeit in die Privatrolle gewechselt werden. Die Integrationsanforderungen bleiben trotz hoher Responsivität gering, was als segmentierend-responsives digitales Arbeiten bezeichnet wird. Die Ereignisse innerhalb der Arbeit selbst werden jedoch von Mitarbeitenden als negativ empfunden (Braukmann et al., 2017) und sind mit Beanspruchung verbunden. So kann es zu Verzögerungen bei der Bearbeitung von Aufgaben und zu wahrgenommener Überlastung kommen (Derks & Bakker, 2010; O'Driscoll et al., 2010; Brummelhuis et al., 2012). Kann man die IKT-Nutzung nicht selbst steuern und sich seine Zeit nicht selbst einteilen (z. B. durch hereinkommende Anrufe oder Aufgaben), führt dies zu Stress und emotionaler Erschöpfung (Day et al., 2012; Dettmers et al., 2016a; Kattenbach et al., 2010).

3.2. Integrierend-responsives digitales Arbeiten

Auch beim integrierend-responsiven digitalen Arbeiten finden Unterbrechungen durch die responsive IKT-Nutzung statt. Anders als beim segmentierend-responsiven digitalen Arbeiten überschreitet hier die Arbeit die Grenze zum Privatleben, indem Arbeitende mittels IKT für arbeitsbezogene Dinge erreichbar sind und Anrufe oder Nachrichten empfangen und beantworten. Dies kann beispielsweise bei einer Assistentin/einem Assistenten der Fall sein, die/der persönlich für eine Führungskraft zuständig ist, die sich häufig erst zu Randzeiten meldet. Dabei finden unkontrollierte Rollenwechsel vom Privatleben in die Arbeitsrolle statt und es kann zu einem Verschwimmen der Rollen kommen (Matthews et al., 2010; Middleton & Cukier, 2006). Das Phänomen der arbeitsbezogenen erweiterten Erreichbarkeit (Dettmers et al., 2016a) weist große Überschneidungen mit dem integrierend-responsiven digitalen Arbeiten auf und ist häufig mit negativen Folgen verbunden. Bereits die gedankliche Antizipation von Kontaktierungen oder hereinkommenden Aufgaben verhindert, dass Betroffene sich von arbeitsbezogenen Gedanken und Gefühlen distanzieren können (Ruderman et al., 2016). Personen, die außerhalb ihrer regulären Arbeitszeit mittels IKT für berufliche Dinge erreichbar sind, haben eine höhere emotionale Erschöpfung und empfinden subjektiv höheren Stress als weniger erreichbare Menschen (Day et al., 2012; Dettmers et al., 2016b; Dettmers, 2017). Zudem sind sie öfters von psychosomatischen Beschwerden wie Kopfschmerzen und schlechterem Schlaf betroffen (Arlinghaus & Nachreiner, 2014; Braukmann et al., 2017; Hassler et al., 2016; Lanaj et al., 2014). Je stärker sich Arbeits- und Privatleben überschneiden, desto weniger Erholungsaktivitäten nehmen

Arbeitende auf (Derks et al., 2012). Dementsprechend können sie schlechter von der Arbeit abschalten und sich nicht so gut erholen (Barber & Santuzzi 2015; Derks et al., 2014; Hassler et al., 2016). Betroffene empfinden weniger Kontrolle über ihre Freizeitaktivitäten (Dettmers et al., 2016b). Erleben Menschen geringe Kontrolle über den eigenen Zeitplan und sind ihre Grenzen für Arbeitsbelange durchlässig, so können sie private Verpflichtungen schlechter erfüllen (Chen & Karahanna, 2014) und es kann zu Konflikten zwischen Arbeits- und Privatleben kommen (Allen et al., 2014; Amstad et al., 2011; Tausig & Fenwick, 2001).

3.3. Integrierend-initiierendes digitales Arbeiten

Unklarer ist die Situation im integrierend-initiierenden digitalen Arbeiten. Wie häufig bei Selbständigen oder Manager(inne)n mit unregelmäßigen Arbeitszeiten zu beobachten ist, werden Privat- und Arbeitsleben oft nicht mehr klar getrennt (Menz et al., 2016). Gleichzeitig erlaubt die initiierende IKT-Nutzung eine hohe Kontrolle über das Strukturieren der Arbeit. Dieser Form des digitalen Arbeitens können unterschiedliche persönliche Einstellungen und Arbeitsbedingungen zugrunde liegen, wie z. B. eine hohe Integrationspräferenz oder viele Wechsel zwischen Privat- und Arbeitsleben vollzogen werden und die Abgrenzung der Rollen nicht immer klar ist. Das integrierend-initiierende digitale Arbeiten ist sowohl mit Chancen als auch Risiken verbunden. Das wird zum Beispiel daran erkennbar, dass die gleiche Tätigkeit, nämlich „eine arbeitsbezogene Aufgabe zu Hause zu bearbeiten“, sowohl positiv als auch negativ bewertet werden kann (Braukmann et al., 2017). Für Personen, die Freude am digitalen Arbeiten haben oder einen Sinn darin sehen (autonome Motivation), zeigt sich ein positiver Zusammenhang zur Stimmung und zur Fähigkeit abzuschalten (Ohly & Latour, 2014). Positiv verstärkend kommt hinzu, dass Menschen mit autonomer Arbeitsmotivation im Vergleich zu anderen weniger stark abschalten müssen, um sich wohl zu fühlen (Olafsen & Bentzen, 2020). Fühlen sich Menschen zum digitalen Arbeiten z. B. durch Vorgaben oder die Erwartungshaltung anderer verpflichtet (kontrollierte Motivation), so kann dies mit erhöhter Beanspruchung und verminderter Leistung verbunden sein (Cooper & Lu, 2019; Ohly & Latour, 2014). Allein das Vorhandensein von arbeitsbezogenen IKT kann Menschen dazu bewegen, diese auch zu nutzen und z. B. im Privatleben regelmäßig E-Mails zu checken und gedanklich mit der Arbeit verbunden zu bleiben (Fenner & Renn, 2004; Jarvenpää & Lang, 2005), was zu schlechter Erholung führt (Park et al., 2011). Im Gegensatz zu

responsiver IKT-Nutzung ist die initiiierende IKT-Nutzung mit Kontrolle über die eigene Zeit und die Kontakte verbunden (Derks & Bakker, 2010), was die negativen Effekte des integrierenden digitalen Arbeitens auf das Befinden abpuffern kann (Dettmers et al., 2016a). Dies könnte erklären, warum Mitarbeitende das Arbeiten außerhalb der Arbeitszeit kurzfristig als Entlastungsstrategie wahrnehmen (Menz et al., 2016). Zu erwähnen ist jedoch, dass integrierend-initiiierendes digitales Arbeiten häufig aufgrund von hoher Arbeitslast stattfindet (Braukmann et al., 2017) und so zu einer Ausdehnung der Arbeitszeiten (Cooper & Lu, 2019; Fenner & Renn, 2004) und damit verbunden zu schlechtem Abschalten und mehr Konflikten zwischen Arbeit und Privatleben (Byron, 2005) führt. Bewertet man also das integrierend-initiiierende digitale Arbeiten positiv und hat man genug Handlungsspielraum, so können sich daraus kurzfristig Vorteile ergeben. Fühlt man sich fremdbestimmt, so ist von negativen Folgen auszugehen.

3.4. Segmentierend-initiiierendes digitales Arbeiten

Zuletzt beschreibt das segmentierend-initiiierende digitale Arbeiten eine Kombination aus selbstgesteuertem digitalem Arbeiten und klaren, abgegrenzten Rollen. Das Elternteil, das am Nachmittag die Arbeit geplant beendet, um die Kinderbetreuung zu übernehmen und die Arbeit dafür abends im Homeoffice zu Ende führt, kann mit wenigen Unterbrechungen und Rollenwechseln einen flexiblen Ablauf gestalten. Anders als beim integrierenden Arbeiten sorgen Arbeitende durch die selbstbestimmte und klare Einteilung von Arbeitszeiten, durch das Setzen von Zielen und Prioritäten dafür, dass die arbeitsbezogene IKT-Nutzung klar begrenzt wird und sich die Lebensbereiche nicht unkontrolliert überlagern. Segmentierend-initiiierendes digitales Arbeiten geht deshalb oft mit positiven Folgen einher. So können Arbeitende die Vorteile der Möglichkeit zum flexiblen Arbeiten nutzen, um sowohl private als auch berufliche Dinge entsprechend den eigenen Bedürfnissen in den Tagesablauf zu integrieren (Parasuraman & Greenhaus, 2002). Dies ist mit besserem Abschalten (Park et al., 2011), höherer Produktivität und Zufriedenheit (Baltes et al., 1999) sowie weniger Konflikten zwischen Arbeit und Privatleben verbunden (Fenner & Renn, 2010; Matthews & Barnes-Farrell, 2010; Matthews et al., 2010). Zudem profitieren Arbeitende von Übertragungseffekten zwischen den Rollen, indem sie z. B. Kompetenzen aus dem Arbeitsbereich auch im Privatleben anwenden können (Barnett & Hyde, 2001; Wiese et al., 2010). Studien zeigen, dass ein moderates Maß an Homeoffice mit hoher

Arbeitszufriedenheit, hoher Bindung, guter Leistung, geringer Erschöpfung und weniger Konflikten zwischen Arbeit und Privatleben assoziiert ist (Allen et al., 2015). Das segmentierend-initiierende digitale Arbeiten erlaubt also, die positiven Effekte von initiierender IKT-Nutzung, wie z. B. vereinfachte Koordination, Kommunikation und Zusammenarbeit sowie Produktivität zu nutzen (Braukmann et al., 2017; Day et al., 2019), ohne die möglichen Risiken der Integration einzugehen.

3.5. Zusammenfassung

Es lässt sich sagen, dass ein hohes Maß an responsiver IKT-Nutzung sowie ein hohes Maß an Integration Risiken für Arbeitende mit sich bringen, auch wenn persönliche Faktoren, wie z. B. die Segmentationspräferenz (Kreiner, 2006) oder wahrgenommene Vorteile (Dettmers & Biemelt, 2018) negative Effekte abschwächen können. Responsive IKT-Nutzung geht meist mit Stress und emotionaler Erschöpfung einher (Day et al., 2012; Dettmers et al., 2016a; Kattenbach et al., 2010), während Integration die Grenze zum Privatleben schwächt (Barber & Santuzzi, 2015; Derks et al., 2014; Hassler et al., 2016). Deshalb liegt in den Bereichen des integrierend-responsiven und des integrierend-initiierenden digitalen Arbeitens der höchste Handlungsbedarf. Das segmentierend-initiierende digitale Arbeiten scheint hingegen eher positive Folgen für Arbeitende mit sich zu bringen, sodass diese Form gefördert werden sollte. Eine empirische Gegenüberstellung der neu beschriebenen vier Formen des digitalen Arbeitens und deren Auswirkungen haben die Autoren bereits gestartet. Erste Ergebnisse und evaluierte Handlungsempfehlungen werden für das Jahr 2022 erwartet.

4. Digitales Arbeiten aktiv gestalten – Handlungsempfehlungen

Interventionen zum Boundary Management haben zum Ziel, responsive IKT-Nutzung zu reduzieren sowie übermäßigen Integrationsanforderungen entgegenzuwirken. Es wird also tendenziell eine Verlagerung von integrierend-responsivem zu segmentierend-initiierendem digitalem Arbeiten angestrebt, da initiierende IKT-Nutzung mit mehr Autonomie und Kontrollgefühl einhergeht (Derks & Bakker, 2010) und Segmentation die Grenze zwischen Arbeits- und Privatleben bewahrt (Wepfer et al., 2018). Dies kann durch die Gestaltung der formellen und informellen Integrationsanforderungen und durch die Anwendung von Segmentationsstrategien umgesetzt werden. Im Folgenden werden Handlungsempfehlungen und Interventionsansätze für die Zielgruppen Arbeitende, Führungskräfte und Teams beschrieben. Dieser Ansatz stimmt mit Ansätzen aus der Anwendungsforschung überein

(Kossek, 2016b). Die Forschung zeigt, dass das individuelle Boundary Management zu großen Teilen durch die Rahmenbedingungen der Arbeit beeinflusst wird (Kossek, 2016a). Dabei kann insbesondere die von den NWW beeinflusste Arbeitsgestaltung eine Hürde darstellen. Hat die eigene Abgrenzung z.B. zur Folge, dass persönliche berufliche Ziele nicht erreicht werden können, oder ergeben sich daraus negative Konsequenzen für das Team, kann dies davon abhalten, individuelle Segmentationsstrategien umzusetzen (Krause et al., 2015a). Interventionen auf Ebene von Führungskräften und Teams können hier einen Anstoß geben, den Umgang mit den NWW zu reflektieren und die Möglichkeiten innerhalb des eigenen Einflussbereichs gemeinsam auszuschöpfen. Zudem fällt es vielen Menschen schwer, das Verhalten, das sie sich vorgenommen haben, tatsächlich langfristig im Alltag umzusetzen (Hagger & Luszczynska, 2014). Führungskräfte und Teams stellen für einzelne Mitarbeitende einen Teil der Verhältnisse dar, agieren jedoch gleichzeitig selbst als Individuen (Derks et al., 2015; Koch & Binnewies, 2015). Die vorgestellten Handlungsempfehlungen sollten deshalb in Interventionen zur Verhaltensänderung eingebettet werden. In einem Kooperationsprojekt der Fachhochschule Nordwestschweiz und der Universität Neuenburg werden spezifische Interventionen für alle drei Zielgruppen entwickelt und evaluiert.

4.1. Das Individuum als handlungsfähiger Akteur

Zentraler Ansatzpunkt für Individuen ist das Anwenden von Segmentationsstrategien, um mit bestehenden Integrationsanforderungen umzugehen. Die Anwendung von Segmentationsstrategien ist sowohl für responsiv als auch für initiierend digital arbeitende Menschen relevant, da klare Grenzen zwischen Arbeits- und Privatleben vor Beanspruchung schützen. Menschen, die einer responsiven IKT-Nutzung unterliegen, haben jedoch ein höheres Risiko für negative Folgen, da Belastungen aus dem Arbeitsleben förmlich in das Privatleben vordringen. Ein Firmenhandy ist also dann ein großes Problem, wenn es auch außerhalb der Arbeitszeit ständig läutet, also responsive IKT-Nutzung von anderen eingefordert wird. Deshalb ist es für diese Gruppe besonders wichtig, Segmentationsstrategien anzuwenden. Aber auch bei einer initiierenden IKT-Nutzung sind Segmentationsstrategien sinnvoll, um z. B. der Verleitung zu widerstehen, abends nochmal die Mails zu checken. Allerdings spielen hier auch andere Handlungsmotive eine Rolle und die höhere Autonomie reduziert ebenfalls die negativen Effekte. Insgesamt ist davon auszugehen, dass etwas Segmentation für alle positive Folgen hat (Wepfer

et al., 2018), für responsiv Arbeitende aber deutlich stärker als für initiiierend Arbeitende. Kreiner et al. (2009) beschreiben verschiedene Typen von Segmentationsstrategien, die dazu dienen, individuelle Grenzen zwischen der Arbeit und dem Privatleben zu ziehen oder aufrecht zu erhalten. Die Strategien helfen dabei Rollenklarheit zu schaffen sowie den Umgang mit unterschiedlichen Rollen zu erleichtern (Ashforth et al., 2000). Die Strategien zeigen sich in einzelnen alltäglichen Verhaltensweisen, die von Mensch zu Mensch unterschiedlich sein können (Kreiner et al., 2009). Aus dem Modell der digitalen Arbeitsformen geht hervor, dass für das digitale Arbeiten spezifische Segmentationsstrategien notwendig sein können. Deshalb werden die Segmentationsstrategien von Kreiner et al. (2009) und Kossek (2016b) für das digitale Arbeiten adaptiert und ergänzt (Tabelle 1). Die Umsetzung in der Praxis erfolgt in zwei Schritten:

1. Status-Check. Die/der Arbeitende setzt sich zunächst bewusst mit seiner aktuellen Situation auseinander, um seinen Handlungsbedarf zu ermitteln. Dabei kann er auch reflektieren, von welchen Vorteilen er durch das aktuelle Ausmaß an Integration profitiert.
2. Umsetzung von Segmentationsstrategien. Erlebt die/der Arbeitende eine Inkongruenz zwischen gewünschter und realer Integration bzw. Segmentation, kann er zum einen bestehende Strategien bewusst festigen und sich zum anderen neue Strategien aneignen.

4.2. Die Führungskraft als Möglichmacher

Die Führungskraft wirkt auf zweierlei Arten auf das digitale Arbeiten: einerseits durch das eigene Verhalten, durch Segmentationsstrategien und IKT-Nutzung und andererseits durch die Integrationsanforderungen in Form von Vorgaben und Erwartungen (Franke et al., 2014; Hammer et al., 2009). Eine Führungskraft, die selbst wenig auf die Vereinbarkeit von Arbeits- und Privatleben achtet und dieser keinen hohen Wert zumisst, beeinflusst durch ihre Vorbildfunktion und die entstehenden Normen das Verhalten der Mitarbeitenden negativ (Derks et al. 2015). Auch das IKT-Nutzungsverhalten der Führungskraft kann den Mitarbeitenden den Eindruck vermitteln es sei üblich und zu erwarten, am Wochenende E-Mails zu verschicken oder kontaktiert zu werden. Darüber hinaus macht die Führungskraft Vorgaben über die eingesetzten IKT sowie über den Handlungsspielraum, den die Mitarbeitenden erhalten, um ihre Arbeitsaufgaben und deren Organisation auszuführen. Dabei werden Anforderungen aus dem Arbeitsleben oft durch Einschränkungen in anderen Lebensbereichen

kompensiert (Knecht et al., 2016). Tabelle 2 beschreibt Handlungsempfehlungen für Führungskräfte für die Gestaltung des digitalen Arbeitens.

4.3. Das Team als Gestalter

Ein zentraler Ansatzpunkt im Team ist die Gestaltung von Integrationsanforderungen. Dabei spielen soziale Normen in Sinne von informellen Integrationsanforderungen eine zentrale Rolle, da sie das Verhalten der/des Einzelnen wesentlich beeinflussen. Sie werden als gemeinsame Verhaltensstandards definiert, die durch das Verhalten von Mitgliedern innerhalb einer Gruppe geprägt werden und für diese gelten (Cialdini & Trost, 1998). Dabei sind sowohl Führungskräfte (siehe 4.2) als auch die Teammitglieder von Bedeutung. Je stärker die Normen ausgeprägt sind, desto geringer wird der Einfluss des Individuums auf die Gestaltung seiner Grenzen (Ashforth et al., 2000). So hängt die IKT-Nutzung und das Segmentationsverhalten von Mitarbeitenden maßgeblich davon ab, wie sich die anderen Teammitglieder verhalten (deskriptive Norm), welche Erwartungen die Mitarbeitenden wahrnehmen (subjektive Norm) und ob Segmentationsverhalten mit negativen Folgen assoziiert wird (injunktive Norm) (Koch & Binnewies, 2015; Derks et al., 2015, 2014; Park et al., 2011). Soziale Normen bestimmen auch, ob strukturelle Rahmenbedingungen zur besseren Vereinbarkeit von Arbeits- und Privatleben in Unternehmen von den Mitarbeitenden in Anspruch genommen werden (z. B. ein Teamklima, das Mitarbeitende darin unterstützt, flexible Arbeitszeiten zu nutzen, ohne dafür sanktioniert zu werden) (Kossek, 2016a). Die Intervention sollte als allgemeine Intervention zur Arbeitsgestaltung eingeführt und mit den Unternehmenszielen verknüpft werden, um die Akzeptanz der Maßnahme zu erhöhen (Kossek, 2016a). Zunächst werden im Team kritische Situationen ermittelt, die eine hohe Responsivität erfordern und in denen eine hohe Integration von Arbeits- und Privatleben stattfindet. Insbesondere Situationen, in denen andere durch initiiierende IKT-Nutzung Teammitglieder zu Respondern machen, können hier thematisiert werden. In Bezug auf diese Situationen wird Klarheit über strukturelle Rahmenbedingungen geschaffen und bestehende Normen werden explizit gemacht. Dies bedeutet abzugleichen, welches Verhalten in den betreffenden Situationen üblich ist, welche Erwartungen die Teammitglieder verspüren und an die anderen Teammitglieder haben und welche Konsequenzen drohen, falls von der Norm abgewichen wird. Bei diesem Schritt kann es sinnvoll sein, gemeinsam zu hinterfragen, welche Werte den aktuellen Normen zugrunde liegen. Im nächsten Schritt

werden im Team gewünschte Verhaltensweisen erarbeitet. Dabei können auch bestehende Regeln angepasst und gemeinsame Segmentationsstrategien entwickelt werden. Das Team hält diese in einer gemeinsamen Etikette zum digitalen Arbeiten (Day et al., 2019) explizit fest. Damit die Etikette ihre Wirkung in Form von veränderten sozialen Normen entfaltet, ist es wichtig, dass die Teammitglieder und insbesondere die Führungskraft diese in ihren Alltag transferieren und in Form von regelmäßigen Retrospektiven zum Thema machen. Das Team kann an folgenden Punkten zur Reduktion der Integrationsanforderungen und Unterstützung der idiosynkratischen Segmentationsstrategien ansetzen (in Anlehnung an Day et al., 2019).

Die Inhalte orientieren sich dabei an den Empfehlungen der Abschnitte 4.1 und 4.2:

- Klare Regelung von Arbeitszeiten
- Klärung von Kommunikationswegen und -kanälen
- Regelungen zum Umgang mit hoher Arbeitslast
- Transparenz von An- und Abwesenheiten
- Regelungen zu responsiver IKT-Nutzung während der Arbeitszeit
- Regelungen zu responsiver und initiiender IKT-Nutzung im Privatleben

5. Vielleicht nicht immer „Always on“?

Das vorgestellte Modell der digitalen Arbeitsformen vereint etablierte Theorien des Boundary Managements mit dem Nutzungsverhalten von IKT und zeigt damit deren komplexe Wechselwirkungen vor dem Hintergrund der digitalen Transformation auf. Dabei zeigt sich, dass sowohl die Art der IKT-Nutzung als auch die Integration der Lebensbereiche eine Rolle bei der Realisierung der Chancen und Risiken des digitalen Arbeitens spielen. Die präsentierten verschiedenen Formen des digitalen Arbeitens lassen eine differenzierte Einordnung der bestehenden Forschungsergebnisse zu und helfen dabei, das Paradox der NWW aufzulösen. Die Organisation und das Management von digitaler Arbeit liegen nicht nur in der Verantwortung der Mitarbeitenden, sondern auch in der der Unternehmen (Kossek, 2016a). Werden Vernetzung und Flexibilität vorausgesetzt, ist es notwendig, die Mitarbeitenden auch dahingehend auszustatten, zu schulen und zu begleiten. Die beschriebenen Handlungsempfehlungen berücksichtigen diesen Aspekt mit Interventionsansätzen auf verschiedenen Ebenen: das aktive, positive Verhalten durch Segmentationsstrategien zu verstärken und gleichzeitig die Integrationsanforderungen

zu reduzieren. Dadurch können Maßnahmen für die persönliche Entwicklung sowie die Entwicklung von Führungskräften und Teams abgeleitet werden, die jeweils präventiv oder auch als Intervention eingesetzt werden können. Im Zuge der Digitalisierung können Unternehmen mit ihren Führungskräften und Teams, aber auch Individuen präventiv darauf achten, die Grenzen zwischen Arbeit und Privatem aktiv und bewusst zu gestalten. Durch das Erlernen von Segmentationsstrategien werden zum einen individuelle Gesundheitskompetenzen gefördert. Zum anderen wird es mit der zunehmenden zeitlichen und örtlichen Flexibilität wichtig, dass es klare Regelungen zu Erreichbarkeitsnotwendigkeiten gibt, damit Mitarbeitende gar nicht erst unter Druck geraten, außerhalb ihrer Arbeitszeiten verfügbar zu sein. Transparenz über Arbeitsroutinen und Austausch über Erwartungen geben Mitarbeitenden Struktur und tragen so ebenfalls zur Reduktion von Integrationsanforderungen bei. So kann auf Ebene der Verhältnisse der Beanspruchung von Mitarbeitenden vorgebeugt werden. Wir erleben, dass die digitale Transformation die Türe zwischen unserer Arbeit und unserem Privatleben weit öffnet, sodass die Arbeit entsprechend leicht in unser Privates vordringen kann. Das Modell der digitalen Arbeitsgrenzen eröffnet Perspektiven für Einzelpersonen und Organisationen, wie sie ihre „Online“-Arbeitszeit bewusst und aktiv gestalten können.

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Tabellen

Tabelle 1

Segmentationsstrategien im digitalen Arbeiten, adaptiert und erweitert nach Kreiner et al. (2009) und Kossek (2016b)

Themenfeld	Segmentationsstrategien und ausgewählte Beispiele
IKT-Nutzung	Eigene Responsivität steuern - Endgeräte abschalten - NotificationManager einrichten - Erreichbarkeits-Filter setzen, um nur für bestimmte Personen außerhalb der Arbeitszeit erreichbar zu sein
	Initiierende IKT-Nutzung steuern - Wenn der Bedarf besteht, aus dem Privatleben heraus in die Arbeitsrolle zu wechseln, ein klares Zeitfenster mit Ziel setzen (Timeboxing) - Eigene Zeiterfassung oder Bildschirmzeiten dokumentieren, um ein Ausdehnen von Arbeitszeiten zu vermeiden
Physisch	Arbeit und Privates räumlich voneinander trennen, (metaphorische) Distanz schaffen - Festgelegter Arbeitsplatz im Homeoffice, der nicht für Privates genutzt wird - Getrennte Endgeräte und Apps für Privates und Arbeit, arbeitsbezogene Apps in einen separaten Ordner auf dem Smartphone ablegen
Zeitlich	Klare Zeiten für Arbeit und Privates planen, Zeiten für Erholung einplanen - Zeiten für Arbeit und Privates flexibel gestalten, jedoch klar einteilen - „Auszeiten“ von der Arbeit und für Zeit mit Freunden, der Familie und Hobbies einplanen
Kommunikation	Eigene Grenzen vorab kommunizieren und Störungen ansprechen - An- und Abwesenheiten sichtbar für andere in den Kalender eintragen - Statusmeldung in Kommunikationssoftware nutzen
	Sich mit Arbeitskontakten (Führungskraft, Team) abstimmen - Mit der Führungskraft und dem Team über Bedürfnisse zur Vereinbarkeit von Arbeit und Privatleben sprechen
Verhalten	Sich Unterstützung suchen - Vertretungsregelungen einrichten - Mit Freunden/Familienmitgliedern Absprachen treffen und sich daran erinnern lassen

Tabelle 1

Fortsetzung

Themenfeld	Segmentationsstrategien und ausgewählte Beispiele
Verhalten	Prioritäten setzen
	- Mentale Prioritätenlisten definieren, welche arbeitsbezogenen und privaten Verpflichtungen zentral sind
	Routinen zum Übergang zwischen Privat- und Arbeitsleben
	- klarer Einstieg und klarer Ausstieg mittels symbolhafter Routinen, z.B.: Laptop und Smartphone bewusst an- bzw. ausschalten - Etwas Trinken, Kleidung wechseln

Tabelle 2

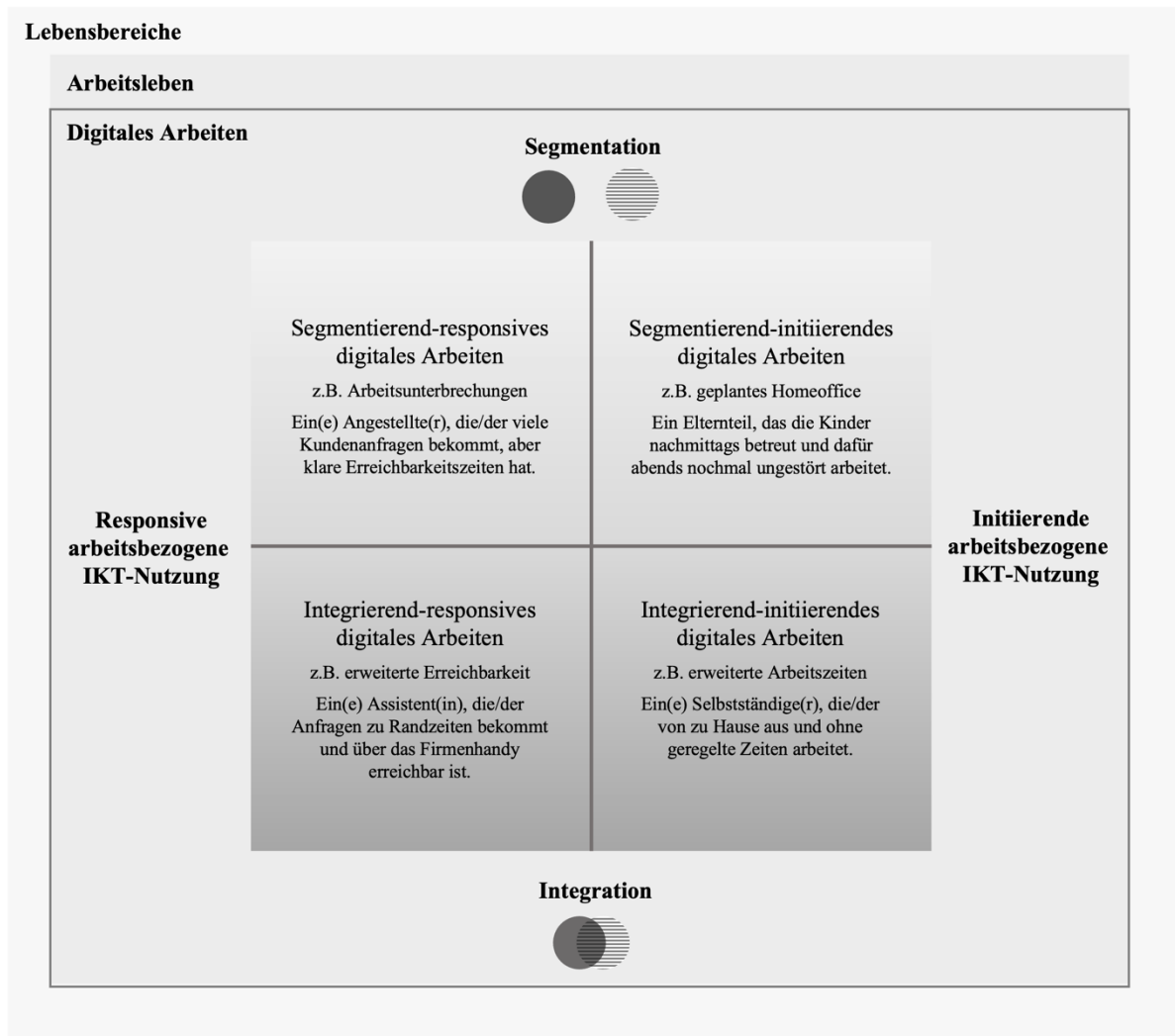
Handlungsempfehlungen für Führungskräfte (In Anlehnung an Straub, 2012 und Crain & Stevens, 2018)

Themenfeld	Handlungsempfehlungen und ausgewählte Beispiele
Gesundheitsorientierung	Verständnis für die Chancen und Risiken der verschiedenen Formen des digitalen Arbeitens sowie deren Auswirkungen auf Gesundheit, Wohlbefinden und Leistung schaffen - Bewusstsein für eigenes IKT-, Integrations- und Segmentationsverhalten bilden - Vorbildfunktion wahrnehmen - Gesundheitsorientiert führen
Vorgaben & Erwartungen kommunizieren	Individuelle Bedürfnisse der Mitarbeitenden verstehen und eine gemeinsame, abgestimmte und transparente Arbeitsweise bilden - Arbeitszeiten und -flexibilität regeln - Abwesenheiten respektieren - Transparenz durch geteilte Kalender erhöhen - IKT-Nutzung klären (keine private Hard- oder Softwarenutzung) - Reaktionszeiten besprechen - Verhalten für Notfälle vereinbaren
Unterstützung geben	Emotionale sowie instrumentelle Unterstützung zum digitalen Arbeiten bieten - Interesse und Verständnis für die persönliche Situation des Mitarbeitenden zeigen - Zum Abschalten ermutigen - Arbeitslast thematisieren - Vertretungsregelungen schaffen - Kompetenz zur Anwendung von IKT schaffen - Unterstützung beim Einrichten und Umsetzen des Homeoffice bieten - Erreichbarkeitszeiten intern und extern kommunizieren
Autonomieunterstützung	Handlungsspielraum einräumen, um eine Verlagerung zu positiveren Formen des digitalen Arbeitens zu erreichen - Höhere Entscheidungskompetenz einräumen - Kontrolle über die Organisation des Arbeitsalltags geben - Gestaltungsfreiraum über die Vollständigkeit und Gestaltung der Aufgaben erlauben

Abbildung

Abbildung 1

Das Modell der digitalen Arbeitsformen (eigene Darstellung)



Paper 2. A Longitudinal Study Evaluating the Effects of a Boundary Management Workshop for Teams

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Reference

Ott, I., Knecht, M., Kuhn, S., & Meier, L. L. (2025). *Boundary management for teams: A longitudinal study on workshop effects and implementation* [Manuscript submitted for publication].

Short Title:

Paper 2. Boundary Management Workshop for Teams

A Longitudinal Study Evaluating the Effects of a Boundary Management Workshop for Teams

Blurring boundaries between work and private life pose significant challenges for individuals in the digital workplace, where constant connectivity enables working from anywhere at any time. Grounded in boundary theory (Ashforth et al., 2000), this study evaluated a team workshop aimed at enhancing boundary management among individuals working in teams. A quasi-experimental longitudinal design was employed, with an intervention group (IG, $N = 432$ participants across 52 teams) attending a half-day workshop (online or on-site), and a control group (CG, $N = 792$). Data were collected at baseline and at one, two, and six months after the workshop in the IG, and at comparable time points in the CG. Multilevel analyses showed improvements in work-family boundary management tactics, norm clarity, family-supportive team behavior, and boundary control in the IG compared to the CG, sustaining for up to six months. Contrary to expectations, integration norms did not decline. The more positively participants appraised the workshop and their action plans, the more they reported a decrease in integration norms and integration enactment. No significant differences emerged between delivery formats. Findings highlight the workshop's effectiveness in sustainably improving boundary management through an individual and team-level approach. It provides practical guidance for organizations seeking to support individuals navigating their work-life boundaries.

Keywords: boundary management, team workshop, organizational intervention, implementation process, new ways of working

Introduction

Technological advancements and cultural changes linked to new ways of working (Demerouti et al., 2014) have enabled individuals to work from almost anywhere and at any time. At the same time, teamwork has gained in importance and increasingly takes place under these flexible conditions (Kaplan et al., 2016). Consequently, individuals tend to integrate their work into their private lives and the boundaries between work and private life become increasingly blurred (Eurofound, 2024). The flexibility of integrating different life domains offers many advantages (Day et al., 2019). However, it is also associated with negative effects, e.g. on recovery, well-being and life domain balance (Allen et al., 2014; Thörel et al., 2022). Therefore, the ability to actively manage the boundaries between work and private life emerges as a key competency for individuals working in teams. Boundary management

is influenced not only by individual behavior, such as work-family boundary management tactics (Haun et al., 2022; Kreiner et al., 2009) but also by social norms regarding the integration of life domains (Palm et al., 2020; Reinke & Gerlach, 2022) and by social support among colleagues regarding nonwork roles (Hammer et al., 2009; Kossek et al., 2021). Therefore, research calls for organizational interventions to strengthen boundary management among individuals working in teams (e.g., Althammer et al., 2024; Reinke & Gerlach, 2022). Beyond determinants influencing boundary management, insights from intervention research underscore the importance of addressing both the individual and the team level in interventions (Aust et al., 2023). However, little is known about how boundary management can be improved in the organizational context as few intervention studies exist at the individual level (e.g., Althammer et al., 2024; Rexroth et al., 2016) or the supervisor level (Heissler et al., 2024) and, to our knowledge, no intervention studies have been conducted at the team level. Therefore, based on theory and previous research, we developed a team workshop to improve boundary management, considering both the individual and the team approach. As the implementation process may affect intervention effectiveness (Nielsen et al., 2023), we additionally examined how specific aspects of the implementation process influenced the outcomes.

The study makes several contributions to the literature. First, we contribute to the boundary management literature by developing a team intervention that considers crucial factors influencing boundary management in the workplace at both the individual and team perspective. This multilevel approach also aligns with recommendations from intervention research (Aust et al., 2023; Nielsen et al., 2023). Second, the study contributes to intervention research by examining specifically the outcomes targeted for change. This approach promotes the understanding of how determinants of boundary management can be changed, thereby contributing to the development of future interventions (Fridrich et al., 2015; Nielsen, et al., 2023). Third, the longitudinal control group design, spanning a period of up to six months after the intervention, allows for a clearer assessment of whether observed changes can be attributed to the intervention and provides insight into its long-term sustainability (Shadish et al., 2002). Fourth, by examining the impact of specific aspects of the implementation process on the workshop effects, the study enhances understanding of for whom and under which circumstances the intervention is effective. This contributes to closing the gap between research and the implementation of

interventions in organizations (Kossek, 2016) and creates the prerequisites for the practical application of the intervention (Aust et al., 2023; Nielsen et al., 2023).

Boundary Management: Theory and Interventions

Boundary Management Theory

Driven by technologies that allow constant availability, new ways of working (Demerouti et al., 2014) facilitate the integration of work into private life and lead to frequent, often unplanned transitions between private and work-related activities (Eurofound, 2024; Kossek et al., 2012). Consequently, individuals must consciously establish and sustain boundaries between their roles and life domains to reduce complexity and create a sense of structure in managing their life domains (Ashforth et al., 2000). People manage these boundaries on a continuum: Segmentation implies that different life domains, e.g., work and private life, are distinctly separated with no or minimal overlap, while integration involves weak boundaries between life domains, and allows overlapping roles across time and place.

How individuals manage boundaries between work and private life is reflected in their integration enactment and boundary control (Cobb et al., 2022). Integration enactment describes the extent to which people integrate their roles or life domains in daily life (Ashforth et al., 2000; Kossek et al., 2012), while boundary control refers to the perceived control over the “timing, frequency, and direction of boundary crossings” (Kossek et al., 2012, p. 115). Evidence suggests that integration enactment and boundary control are distinct constructs (Kossek et al., 2012; Reinke & Gerlach, 2022), as perceived control may not align with actual behavior (Palm et al., 2020). For instance, someone may choose to answer work messages in the evening after spending time with their children, reflecting a high level of boundary control despite a high level of integration enactment. In contrast, feeling obliged to be available outside of regular working hours might indicate high integration enactment but low boundary control. While a high level of integration enactment is associated with negative consequences, such as reduced well-being and higher work-family conflict (Thörel et al., 2022), a high level of boundary control is associated with positive consequences, such as increased well-being and reduced work-family conflict (Park et al., 2020; Piszcek, 2017). Since we were interested in changes in individuals’ boundary management following our intervention, we focused on both constructs as intermediate outcomes or “second-level targets” (Fridrich et al., 2015, p. 7). As proximate outcomes, or

“first-level targets” (Fridrich et al., 2015, p. 7), we addressed relevant factors influencing boundary management, such as work-family boundary management tactics, integration norms, and family-supportive team behavior, which are described further below.

Boundary Management Interventions

Against the background of work-life interventions (Kossek et al., 2016), we define boundary management interventions as interventions designed to help people navigate work-life boundaries, to reduce work-family conflict, and to promote well-being and performance in their life domains. We categorise them as health interventions in the workplace, that “aim to improve individual, group and/or organisational outcomes by mitigating or preventing problems, or by promoting positive outcomes” (von Thiele Schwarz et al., 2020, p. 1). Like other health interventions, they can be implemented at different levels, such as individual, supervisor, group or organisational (Nielsen et al., 2017). Their format can vary, with workshops being one possible approach. Evidence from organisational health intervention research (Aust et al., 2023; Nielsen et al., 2023), as well as several design and implementation considerations of work-life interventions (Kossek, 2016) suggest that multilevel approaches to boundary management interventions might be more effective than single-level approaches. Below, we describe the individual and team approaches to boundary management addressed in our study, which also encompass our proximate outcomes, relevant factors influencing boundary management.

Individual Approach to Boundary Management

At the individual level, we targeted work-family boundary management tactics, defined as goal-oriented behaviors intended to strengthen between life domains and reduce unintentional transitions between these domains (Kossek et al., 2006; Kreiner et al., 2009). For example, people change clothes before and after work when working from home or set filters on their smartphones to control usage times and app notifications (Cho et al., 2025). In line with theory, research demonstrates that using work-family boundary management tactics positively influences boundary management, as reflected in increased boundary control (Haun, 2022; Rexroth et al., 2017), as well as distal outcomes such as the balance between work and nonwork, recovery, and emotional exhaustion (Allen et al., 2021; Haun et al., 2022). Overall, there are few specific boundary management intervention studies at the individual

level (e.g., Althammer et al., 2024; Rexroth et al., 2016; Rexroth et al., 2017; Schlachter, 2017). After the interventions participants used more work-family boundary management tactics (Rexroth et al., 2016), reduced integration of work into private life (Schlachter, 2017), and reported enhanced feelings of control over boundaries (Althammer et al., 2024; Rexroth et al., 2017). These findings suggest that an individual approach is an important element in the design of boundary management interventions. Accordingly, we aimed to strengthen participants' work-family boundary management tactics and propose the following hypothesis.

Hypothesis 1: Participants in the IG will report a higher use of work-family boundary management tactics at follow-up (one, two, and six months after the workshop) compared to baseline, whereas no such change is expected in the CG.

However, the findings of previous intervention studies remain inconclusive, suggesting that an individual approach to designing boundary management interventions may not be sufficient. Some studies have reported no significant changes in participants' integration enactment or boundary control (Rexroth et al., 2016; Schlachter, 2017). One study even indicated a deterioration in control during leisure time (Rexroth et al., 2016). Therefore, we argue that incorporating the work context, particularly by adopting a team-level approach, may enhance the effectiveness of boundary management interventions.

Team Approach to Boundary Management

According to boundary theory, supervisors' and co-workers' behavior can support employees' boundary management (Ashfort et al., 2000; Cobb et al., 2022). Two aspects are particularly relevant for interventions at the team level and are addressed as proximate outcomes: integration norms, including the clarity of those norms, and family-supportive behavior within the team.

Integration Norms and Norm Clarity

Integration norms can be defined as common behavioral standards defined by and applied within a social group regarding work-life integration, to which individuals align their behavior (Cialdini & Trost, 1998; Derks et al., 2015). Descriptive integration norms refer to perceptions of how others typically behave in a given situation (Cialdini et al., 1990). For example, it could be common for team members to check and reply to work-related messages via smartphone in the evening. Normative

pressure sums up the perception of what others expect one to do and the perception of what behavior is rewarded or sanctioned within a group (Derks et al., 2015; Palm et al., 2020). For example, team members might feel the expectation to complete work tasks over the weekend, fearing negative feedback if they do not. Research indicates that both descriptive integration norms and normative pressure influence individuals' boundary management. First, the more colleagues integrate work into their private lives, the more likely individuals are to follow their example, for instance by engaging in work-related information and communication technology (ICT) use at home or after hours (Palm et al., 2020; Schlachter, 2017). Second, high availability and response expectations from co-workers, supervisors, or employers are associated with increased integration behavior, such as more frequent work-related ICT use during nonwork hours (Palm et al., 2020; Reinke & Gerlach, 2022). These expectations also negatively affect boundary control and control over off-job activities (Piszczek, 2017; Park et al., 2020). Third, in line with this evidence, support for segmentation from the work environment, such as through colleagues or formal workplace policies, can reduce work-related ICT use in private life (Wang et al., 2023).

Beyond integration norms, clarity about these norms (Wagemann et al., 2005) is relevant. The new ways of working, such as remote work, may lead to situations where behavioral standards regarding the integration of work and private life have not yet been established or where expectations within the team are unclear. In such unfamiliar situations, people tend to mimic others' behavior (Cialdini & Trost, 1998), thus leading to the unintentional formation of integration norms. For example, employees working remotely may hesitate to take breaks when others appear constantly available. Over time, this behavior can become a self-reinforcing pattern, even without explicit expectations. By clarifying mutual expectations within the team, availability ambiguity can be reduced (Heissler et al., 2024) and clear guidelines can be established (Day et al., 2019; Palm et al., 2020), allowing team members to align their behavior accordingly. In this way, norm clarity may help improve boundary management.

Reserach highlights the need for team-level boundary management interventions (e.g., Althammer et al., 2024; Reinke & Gerlach 2022). It is recommended to reduce integration norms, clarify expectations about work and availability outside regular working hours, and develop team policies on boundary management. However, to our knowledge, only one intervention targeting supervisors has

successfully clarified availability expectations and reduced availability ambiguity (Heissler et al., 2024), and no theory-based interventions at the team level have been evaluated to date. Based on theory and research, we aimed to reduce integration norms and increase norm clarity among employees and propose the following hypotheses.

Hypothesis 2: Employees in the IG will perceive lower integration norms at follow-up (one, two, and six months after the workshop) compared to baseline. More specifically, the perception of (a) descriptive integration norms of the team and (b) the supervisor as well as the (c) normative pressure will decrease. No such change is expected in the CG.

Hypothesis 3: Employees in the IG will experience a higher level of norm clarity at follow-up (one, two, and six months after the workshop) compared to baseline, whereas no such change is expected in the CG.

Family-Supportive Team Behavior

People manage boundaries through interactions at work, where colleagues can support each other in maintaining boundaries between work and private life (Ashforth et al., 2000; Clark, 2000). Accordingly, the workshop addressed family-supportive team behavior (FSTB), drawing on the concept of family-supportive supervisor behavior (FSSB; Hammer et al., 2009; Hammer et al., 2013). Beyond role model behavior, which aligns with the concept of descriptive norms, this concept encompasses several dimensions of supervisor behavior that support employees' nonwork roles (Hammer et al., 2009; Kossek et al., 2023). Transferring the dimensions of FSSB to boundary management in teams, emotional support may involve creating an environment where team members feel comfortable discussing conflicts between work and private life, thereby promoting acceptance for segmentation. By offering instrumental support (e.g., help during periods of high workload) and creative support (e.g., clear coverage arrangements), team members can reduce the need to work or stay available during leisure time. There are several reasons supporting this transfer of FSSB to teams. First, the importance of collaboration among team members has grown (Kaplan et al., 2016). Second, theory and research on workplace social support suggests that support can originate from various sources, not only from supervisors but also from co-workers (Crain & Stevens, 2018; Kossek et al., 2011). Third, results from a study on boundary adaptation during the Covid-19 pandemic highlight the importance of team support in boundary

management, identifying social support from co-workers and supervisors as a key strategy for dealing with blurring boundaries (Kossek et al., 2021). Research indicates that FSSB positively influences boundary management. For instance, it is associated with greater boundary control (Park, 2020; Hammer et al., 2009) and less integration enactment (Koch & Binnewies, 2015). Furthermore, FSSB can be promoted through interventions (Allen & Martin, 2017; Crain & Stevens, 2018). Based on these findings and the theoretical reasoning, we assume that similar effects as those found for FSSB will occur among co-workers. Therefore, we aim to promote FSTB among employees working in teams and propose the following hypothesis.

Hypothesis 4: Employees of the IG will experience a higher level of FSTB at follow-up (one, two and six months after the workshop) compared to baseline, whereas no such change is expected in the CG.

Boundary Control and Integration Enactment

As outlined above, boundary control and integration enactment represent different aspects of boundary management. Based on their relation to the proximate outcomes, we propose the following hypotheses.

Hypothesis 5: Participants in the IG will report a higher level of boundary control at follow-up (one, two, and six months after the workshop) compared to baseline, whereas no such change is expected in the CG.

Hypothesis 6: Participants of the IG will integrate work less into their private lives at follow-up (one, two, and six months after the workshop) compared to baseline, whereas no such change is expected in the CG.

Evaluating the Implementation Process of Boundary Management Interventions

In addition to evaluating intervention effects, a process evaluation is recommended, as the effectiveness of workplace health interventions depends on the implementation process (Aust et al., 2023; Nielsen et al., 2023). Relevant aspects include the appraisal of intervention activities and satisfaction with the resulting action plans, both of which indicate intention formation and may facilitate the transfer of acquired skills and behaviors into daily work (Fridrich et al., 2015; Nielsen et al., 2023). Furthermore, when action plans are positively evaluated and meet participants' actual needs, their

implementation becomes more likely (Nielsen & Randall, 2013). To the best of our knowledge, in the field of boundary management, only one study has explored the potential influence of the implementation process on outcomes so far. Althammer et al. (2024) found that participants' level of engagement, measured by module completion and practicing daily tasks, partially predicted changes in outcomes, such as boundary management and satisfaction with work-life balance. However, the study did not examine the effect of participants' appraisal of the intervention. In other contexts, such as stress management research, a positive association has been demonstrated between a positive evaluation of an intervention and various outcomes, including stress, well-being, and satisfaction with the intervention (Fridrich et al., 2020; Füllemann et al., 2016; Jenny et al., 2015). Based on theoretical considerations and previous research on the implementation process of health interventions in the workplace, we propose the following hypotheses.

Hypothesis 7: The process evaluation of the intervention by the study participants moderates the effect of the intervention. More specifically, the effects will be stronger **(7a)** when the satisfaction with the intervention activities in terms of workshop-appraisal and **(7b)** when the satisfaction with the developed action plans are high.

The workshop was conducted online and on-site to suit participants' preferences. For this reason, we investigated whether the workshop format moderated the effects. Regarding boundary management interventions, we found no studies comparing different formats. Reviews suggest that online and on-site interventions yield similar effects, which may also apply to group formats (Ebner & Gegenfurtner, 2019; Rafieifar et al., 2024). Since it remains uncertain whether the findings are transferable to boundary management interventions, we formulate a research question to address this issue.

Research Question: Does the format (online vs. on-site) affect the effectiveness of the intervention?

Overview

Based on boundary theory (Ashforth et al., 2000), this study investigated the effects of a team workshop on boundary management. To address our research question, we conducted a quasi-experimental field study with a longitudinal control group design. This approach allowed us to track

changes in the IG over time and compare these changes with those observed in a CG. Additionally, the analysis of moderating effects related to aspects of the implementation process (Fridrich et al., 2015; Nielsen et al., 2023) provided insights into which participants benefited more from the workshop.

Method

Procedure

Figure 1 provides an overview of the study design. Eligible participants were individuals with flexible work arrangements, such as working remotely or outside regular hours using mobile devices. All participants were recruited in the German-speaking part of Switzerland and Germany. The IG consisted of teams of at least three employees and their supervisor, all of whom participated in the team workshop. Recruitment for the IG took place via social media, direct contacts with companies, and informational events. A 30-minute briefing with a designated team representative (typically the supervisor) was held to review inclusion criteria and ensure alignment between team needs and intervention content (Nielsen & Randall, 2013). In contrast, participants in the CG were recruited via the panel provider Bilendi.

Data collection for the IG took place online, between April 2022 and January 2024, and for the CG between March 2024 and March 2025. Teams in the IG were registered by their supervisors on the survey platform two weeks prior to the workshop, which triggered the baseline measurement (T1). The workshop took place during working hours, and teams were encouraged to attend the workshop as fully as possible. It concluded with the evaluation of the implementation process (Tx), and a debriefing with the supervisor was held during the following week. Participants in the IG completed follow-up surveys at one, two, and six months after the workshop (T2, T3, T4). In the CG, data collection started with the baseline survey, followed by a second survey (T2) after an eight-week interval. This interval corresponds to the average time between T1 and T2 in the IG, ensuring that both groups were assessed at comparable time points. Additional follow-ups in the CG were conducted three (T3) and seven months (T4) after baseline to align with the IG timing. No institutional procedure for ethical approval for questionnaire studies existed; however, the study followed the APA ethics policy regarding the treatment of participants, and data was handled in accordance with European guidelines (General Data Protection Regulation).

Participants

Total sample. A total of 1,224 individuals (IG: $N = 432 / 35\%$, CG: $N = 792 / 65\%$) participated in at least the first assessment of the study. Five hundred seventy-one (47%) participants were female. The participants' ages were grouped as follows: up to 19 years ($N = 14 / 1\%$), 20–29 years ($N = 204 / 17\%$), 30–39 years ($N = 325 / 27\%$), 40–49 years ($N = 319 / 26\%$), 50–59 years ($N = 247 / 20\%$), and 60 years or older ($N = 88 / 7\%$). Regarding the level of education, 53 (4%) participants had completed only the compulsory years of schooling (~ 9 years), 563 (46%) had completed secondary education (~ 12 years), 243 (20%) had a bachelor's degree, and 338 (28%) had a master's or doctoral degree. Some participants did not indicate their gender ($N = 27 / 2\%$), their age ($N = 27 / 2\%$), or their level of education ($N = 27 / 2\%$). The participants worked in various sectors, including financial and insurance services, IT services, and logistics and transport. On average, participants were employed at $M = 86.00\%$ ($SD = 22.00\%$, range: 10 - 100%) of a full-time position and had an average of $M = 3.00$ ($SD = 2.00$, range: 1 - 7) days per week with the opportunity to work flexibly.

Specific data of the intervention group. A total of 52 teams participated in the intervention with an average team size of 8.31 members ($SD = 3.89$, range: 3 - 18). Of these teams, 31 (60%) of the teams took part in the on-site workshop, representing 261 (60%) participants in the IG. Some participants did not attend the workshop, mainly due to illness or vacation ($N = 65 / 15\%$).

Valid cases. In the IG, data were available for 52 (100%) supervisors and for 380 (100%) employees at T1, 45 (87%) supervisors and 352 (93%) employees at T2, 45 (87%) supervisors and 327 (86%) employees at T3, and 43 (83%) supervisors and 323 (85%) employees at T4. Fifty (96%) supervisors and 302 (79%) employees took part in the evaluation of the implementation process (Tx).

In the CG, data were available for 275 (100%) supervisors and for 517 (100%) employees at T1, 200 (73%) supervisors and 369 (71%) employees at T2, 181 (66%) supervisors and 345 (67%) employees at T3, and 133 (48%) supervisors and 245 (47%) employees at T4.

Comparability of groups. T-tests and χ^2 tests were conducted to compare the IG and the CG at baseline. The IG included a higher proportion of women ($\chi^2(df) = 26.193, p \leq .001$, Cramér's $V = 0.148$), slightly tended to be younger ($\chi^2(df) = 29.714, p \leq .001$, Cramér's $V = 0.158$) and had a higher proportion of participants with higher education levels ($\chi^2(df) = 79.097, p \leq .001$, Cramér's $V = 0.257$). Participants

in the IG had a higher average employment percentage ($t(df) = 2.785, p = .005, M_{IG} = 87.53, SD_{IG} = 17.88, M_{CG} = 83.76, SD_{CG} = 23.81$, Cohen's $d = 0.172$) and reported a higher number of days per week with the opportunity to work flexibly ($t(df) = 9.849, p \leq .001, M_{IG} = 3.11, SD_{IG} = 1.38, M_{CG} = 2.24, SD_{CG} = 1.43$, Cohen's $d = 0.614$). Overall, despite the statistically significant results, most observed differences were small. Therefore, the two groups can be considered comparable at baseline.

Intervention

The intervention consisted of a half-day workshop and was delivered both online and on-site. The content, methods, and material of the workshop were standardized. However, for the on-site workshop, an additional hour was allocated for exercises and breaks (four hours online, five hours on-site). Behavior change techniques (BCTs) were used to implement the content. BCTs are specific, theory-based elements of an intervention aimed at promoting behavioral change (Michie et al., 2013).

A detailed description of the workshop design is presented in Appendix A. The complete workshop materials are available on OSF ([Link](#)). At the beginning, participants were made aware of the impact of digitalization on the boundaries between work and private life. The use of work-family boundary management tactics was promoted through exercises and theoretical input. Afterwards, participants reflected on the alignment between their current integration enactment and their individual preferences. This enabled them to adapt their own work-family boundary management tactics. This exercise allowed participants to explore the diversity within the team and cultivate mutual understanding for the varied needs and behaviors of team members, whereby FSTB was addressed. They acknowledged the interplay of behaviors among team members and began to identify initial strategies for addressing challenges or establishing common behavioral standards. The last part focused on clarifying and reducing integration norms. Participants identified and worked on "pain points" at the workplace that made it difficult to separate work and private life. This included various aspects, such as clarifying mutual expectations, optimizing work processes or formulating behavioral recommendations. Concrete action plans were devised for the most important pain points. Addressing specific team challenges was prioritized over developing a general team charter to enhance both participation and the fit of the intervention (Nielsen & Randall, 2013). It was recommended to evaluate the implementation of the action plans into daily work during a retrospective (Nielsen et al., 2023). The workshops were led by

trainers from the research group, all of whom held degrees in psychology and had experience in workshop facilitation. To ensure standardization and promote the exchange of experiences, the study management organized two peer consultations during the implementation period.

Measures

All outcomes were measured in both groups. Outcomes related to the implementation process were assessed only in the IG, as the CG did not receive the intervention. All items were presented in German, and we applied Brislin's (1970) back-translation method. Unless otherwise noted, participants rated their agreement with the items using a 5-point response scale ranging from 1 (*do not agree at all / completely disagree*) to 5 (*completely agree*). The values of McDonald's Omega (ω) are presented in Table 1.

Work-family boundary management tactics were assessed using the eight-item scale from Cho et al. (2025). A sample item is "After work, I create physical distance from my work-related tasks. For example, by commuting home, taking a walk first, or consciously closing the door to my home office."

Integration norms were assessed using an eight-item scale.¹ The items were adapted from Derks et al. (2015). *Descriptive integration norms among the employees* were assessed with three items. A sample item is "In our team, most people respond to work-related messages even during their leisure time." *Descriptive integration norms of the supervisor* were assessed with three items. A sample item is "My supervisor regularly completes work tasks outside of their working hours." *The normative pressure* was assessed with two items. A sample item is "My work colleagues expect me to be available for work-related matters outside of regular working hours."

Norm clarity was assessed using a three-item scale. The items were based on Wageman et al. (2005) and were adapted for boundary management. A sample item is "In this team, there are explicit standards for managing the boundaries between work and personal life."

Family-supportive team behavior was assessed using a three-item scale. The items were based on the family-supportive supervisor behavior short-form questionnaire (Hammer et al., 2013) and were adapted for teams. They covered emotional and instrumental support as well as creative work-family

¹ Due to a technical problem in the online survey, not all items were displayed to the sample of employees until about halfway through the data collection. The problem occurred among 168 employees (47.59%) at time 1, 123 (44.09%) employees at time 2, 102 (41.63%) employees at time 3 and 21 employees (10.40%) at time 4.

management. A sample item is “I can talk to my colleagues about conflicts between work and non-work.”. Due to the similarity of role modeling and descriptive norms, this dimension was not included in the analysis.

Boundary control was assessed using the three-item scale from Kossek et al. (2012). A sample item is “I control whether I am able to keep my work and personal life separate”.

Integration enactment was assessed using a six-item scale. The items assessed working on tasks and responsiveness outside of working hours and were adapted from Dettmers et al. (2016a) and Wang et al. (2020). A sample item is “In my free time / outside my working hours ... my work colleagues can contact me”.

Workshop appraisal was assessed using a ten-item scale from Fridrich et al. (2020). Participants were asked to rate their personal perception of the workshop by marking the point that best corresponded with their feelings between the respective adjective pairs. The answers were given in a five-point semantic differential format, ranging from 1 (*very*) to 5 (*very*). A sample adjective pair is “very insignificant” and “very relevant”. A high score corresponds to a positive workshop appraisal.

Satisfaction with the action plans was assessed with the single item from Nielsen et al. (2023) “The workshop and the measures developed have addressed important problems relating to the boundaries between work and private life.”.

Concerning the *workshop format*, it was documented whether the workshop took place online or on-site (0 = on-site, 1 = online).

Statistical Analysis

Data and the analysis code can be found at the OSF ([Link](#)). The analysis included descriptive statistics and workshop effects over time and between groups and examined the moderating effect of the implementation process within the IG. All outcome measures were based on person-level data, with no team-level aggregation. The analyses relating to the outcomes work-family boundary management tactics, boundary control, and integration enactment were carried out with the entire sample (supervisors and employees), while the analyses relating to the descriptive integration norms of the supervisor and the team, normative pressure, norm clarity, and FSTB were carried out with the employee subsample.

Confirmatory factor analyses (CFA) and tests of measurement invariance were conducted for all latent variables to evaluate the equivalence of measurement across the four time points (Schmitt & Kuljanin, 2008). For each outcome, a series of increasingly restrictive models was estimated, testing configural, metric, and scalar invariance. Model fit was evaluated using the Comparative Fit Index (CFI), the Tucker–Lewis Index (TLI), and the Root Mean Square Error of Approximation (RMSEA), following the guidelines provided by Hu and Bentler (1999) and MacCallum and Austin (2000). A good fit is indicated by CFI and TLI values of 0.95 or higher, and an RMSEA value of 0.06 or lower (Hu & Bentler, 1999). The level of measurement invariance was evaluated by comparing the nested models (configural, metric, and scalar) using chi-square difference tests. Each comparison tested whether the more constrained model differed significantly from the less constrained one; the p-value indicated whether the additional restrictions led to a significant decrease in model fit. In addition, the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC) were reported as indicators of model comparison, with lower values reflecting a better relative fit between competing models (Mackinnon et al., 2020).

Multilevel analyses were conducted to test the hypotheses and the research question. Multilevel models are appropriate for handling nested and partially missing data (Lischezke et al., 2015). First, to test hypotheses 1 to 6, models were specified to examine changes over time (baseline vs. 1, 2, and 6 months post-intervention) and whether these changes differed between the IG and CG (group $\times$ time interaction effects). Second, to test the potential moderation effect of the implementation process (Hypothesis 7 and the research question), each factor was included individually as an interaction term with measurement time points. Workshop appraisal and satisfaction with the action plans were grand mean centered to facilitate interpretation of intercepts and interactions. In this analysis, for outcomes covering the full sample, supervisor status was included as a Level 2 predictor to assess group differences. All models were set up as slope-as-outcome models and accounted for random effects regarding individuals. As the hypotheses were directional, p-values (except for the intercept) were adjusted for one-tailed testing. For the research question, p-values were retained as two-tailed, as no specific directional expectation was formulated.

Results

Table 1 presents the means, standard deviations, correlations, and McDonald's Omega of the outcomes. Table 2 shows the results of the CFAs and measurement invariance analysis across time for the full sample. Across all outcomes, the configural models and metric models demonstrated good model fit (CFI = .979–.996, TLI = .970–.992, RMSEA = .023–.030), indicating that the proposed factor structures were stable over time. Non-significant differences between configural and metric models supported metric invariance for all outcomes. However, for some outcomes (work-family boundary management tactics, norm clarity, FSTB, and integration enactment), the scalar invariance model differed significantly from the metric invariance model, suggesting that full scalar invariance was not achieved for these outcomes. Nonetheless, the fit indices of these models demonstrated good fit (CFI = .979–.995, TLI = .971–.993, RMSEA = .023–.035). Additionally, for these outcomes, BIC values for the scalar models were lower than those for the metric models, providing support for the overall fit. These findings indicate the outcomes were generally measured in a consistent manner across the four time points, allowing for longitudinal interpretation of the data (Mackinnon et al., 2022).

Results from the multilevel analysis, testing Hypotheses 1 to 6 are presented in Table 3. In Table 3, the intercept represents the estimated mean of the outcome at baseline (T1) for the IG, and the predictor “Control Group” indicates whether the CG differs from it at that time point. The Δ coefficients for each follow-up time point (T2 = one month, T3 = two months, T4 = six months) indicate how much the outcome changes from baseline within the IG. Finally, the interaction terms between time and group show whether the change in the outcome differs between the two groups at the respective measurement points, indicating whether the intervention is associated with a greater (or smaller) change compared to the CG. Significant interaction effects of group over time are displayed in Figure 2. Non-significant interaction effects of group over time are displayed in Appendix B.

In line with Hypothesis 1, individuals in the IG reported greater use of work–family boundary management tactics one month (+0.18), two months (+0.16), and six months (+0.14) after the intervention. These changes were stronger in the IG compared to the CG, as indicated by the significant

interaction effects². Contrary to Hypotheses 2a to 2c, employees' perception of integration norms, including those regarding their supervisor, their team, and the normative pressure they experienced, did not change significantly compared to baseline. Additionally, employees in the IG did not differ from those in the CG in how they perceived these norms, neither one, two, nor six months after the workshop. In line with Hypothesis 3, employees in the IG reported greater norm clarity one, two, and six months after the workshop. They perceived greater clarity regarding integration norms compared to participants in the CG, as reflected in significant interaction effects across all follow-up measurements. Concerning Hypothesis 4, employees in the IG experienced more FSTB two and six months after the workshop, compared to the CG, while no differences were reported one month after the workshop. However, only at the two-month mark participants reported a significant increase in FSTB compared to before the workshop. Thus Hypothesis 4 was partially supported. Regarding Hypothesis 5, individuals in the IG perceived more control over their boundaries between work and private life two and six months after the workshop, compared to the CG. One month after the workshop, no significant differences were reported. However, only at the six-month mark participants reported a significant increase in boundary control compared to before the workshop. Thus, Hypothesis 5 was partially supported. Concerning hypothesis 6, individuals in the IG reported a decreased integration enactment across all follow-up points after the workshop. However, a similar pattern was also observed in the CG. This means that the effect cannot be clearly assigned to the IG. Thus hypothesis 6 was only partially supported.

Results from the multilevel analysis testing Hypothesis 7 and the research question are presented in Table 4. To examine potential moderation effects of the implementation process, three separate models per outcome tested whether main effects varied over time depending on workshop appraisal, satisfaction with action plans, and workshop format. The intercept represents the estimated mean of an outcome at baseline (T1) for participants attending an on-site workshop (coded as 0 = on-site, 1 = online) with average scores on the moderator. For models including the supervisor sample, the variable Is Supervisor (coded as 0 = team member, 1 = supervisor) accounts for baseline differences between roles.

² As expected, individuals in the control group showed little change in their use of boundary management tactics across follow-up assessments compared to baseline (e.g., $-0.01 [0.18 + 1 \times -0.19]$ at T2).

As for the other analyses, changes in the outcome over time are represented by Δ coefficients for each follow-up time point (T2, T3, and T4) indicating mean changes from baseline. Interaction terms (e.g., Δ after 1 month $\times$ moderator) indicate whether changes over time vary depending on the level of the moderator or in comparison to the reference group (in the case of workshop format).

Regarding the impact of the implementation process, participants who evaluated the workshop more positively showed stronger changes in integration norms and integration enactment. Specifically, they reported lower descriptive integration norms of the team one month after the workshop and felt less normative pressure across all follow-ups after the workshop. Moreover, they described a greater decrease in their own integration enactment one and two months after the workshop, compared to those participants who evaluated the workshop less positively. Additionally, participants who were more satisfied with the action plans also reported stronger changes in integration norms and integration enactment, compared to those participants who were less satisfied. Specifically, they reported lower descriptive integration norms of the supervisor and the team one month after the workshop, and lower normative pressure two and six months after the workshop. Moreover, they described a greater decrease in their own integration enactment, two and six months after the workshop. In summary, more positive evaluations of the workshop and the action plans were linked to stronger reductions in perceived integration norms and in the extent to which participants integrated work and private life. Thus, Hypotheses 7a and 7b were partially supported. The way the workshop was delivered (online or on-site) had no significant impact on how participants experienced changes in the outcomes.

Discussion

In the context of new ways of working, actively managing the boundaries between work and private life is an essential competency, particularly given the potential risks of blurred boundaries for health and work–life balance. To address this, we developed and evaluated a workshop aimed at enhancing boundary management among individuals working in teams and compared its effects with a CG. The results indicate sustainable improvements in boundary management, while the implementation process showed limited influence on the workshop’s effectiveness.

Workshop Effects

The findings regarding work-family boundary management tactics - our first proximate outcome - align with positive effects reported in previous intervention studies. In line with Rexroth et al. (2016), we observed an increase in work-family boundary management tactics in the IG compared to the CG. Beyond these results, the two intermediate outcomes, boundary control and integration enactment, both of which are similarly self-directed, also showed positive developments. Six months after the workshop, participants reported a stronger sense of control over their boundaries between work and private life. At the same time, they described engaging less often in integration enactment compared with before the workshop, although this reduction was similar in both the intervention and the CG. These changes contradict previous negative or inconclusive findings (Rexroth, 2016; Schlachter, 2017) and support earlier findings on boundary control (Schlachter, 2017; Rexroth et al., 2017) and integration enactment (Schlachter, 2017). In sum, the workshop effectively promoted self-directed outcomes - both the directly targeted, proximate one and the broader, intermediate ones - that reflect boundary management.

Our results contribute to the existing literature on boundary management interventions in three important ways. First, our findings highlight that even a brief intervention, such as a half-day workshop, can be effective, whereas previous interventions typically required longer durations ranging from two days to six weeks (Althammer et al., 2024; Rexroth et al., 2016). Second, the findings indicate that our intervention has a sustained positive impact for at least six months post-intervention. In contrast, follow-up assessments in previous studies typically spanned shorter time periods (e.g., two to four weeks) after the intervention (Althammer et al., 2024; Rexroth et al., 2016). Third, in addition to previous interventions that took place in the individual setting (e.g., Althammer, 2024; Rexroth et al., 2016), our study demonstrated that an organizational intervention can positively impact boundary management. One explanation is that changes in workplace dynamics may facilitate adjustments in individual boundary management practices and vice versa (Gadeyne et al., 2018; Palm et al., 2020).

To our knowledge, we were the first to follow the recommendation to develop and evaluate a boundary management intervention specifically designed for teams and addressing team-directed outcomes (Day et al., 2019; Reinke & Gerlach, 2022). Three key aspects emerge from our findings. First, previous research suggests that strong integration norms significantly increase integration within

teams (e.g., Palm et al., 2020; Reinke & Gerlach, 2022). Therefore, we addressed these norms in the workshop. Although the participants reported a stronger segmentation between work and private life in terms of work-family boundary management tactics and integration enactment, these norms, i.e. perceived common behavioral standards in the team, did not significantly change. This might be attributed to changes in individual behavior not being readily observable to colleagues. One possible explanation for this might be that work-family boundary management tactics often involve small, subtle actions (e.g., turning off work notifications during personal time). Additionally, people might use these tactics in situations where it is not directly observable by colleagues, such as when working from home, during weekends, or on vacations. As a result, behavioral changes may go unnoticed. To make behavioral changes visible and establish common behavioral standards, participants might benefit from sharing their learnings with their team sometime after the workshop, for example during a retrospective.

Second, contrary to what previous literature suggests (Palm et al., 2020; Schlachter, 2017), study participants reported a stronger segmentation between work and private life, even though they did not perceive any changes in their colleagues' behavior. This raises the question of under what circumstances team members can change their behavior independently of integration norms. One explanation could be that clarifying norms encourages participants to segment more even without altered descriptive norms. In many workshops, participants indicated that they benefited from flexible work arrangements (e.g., working in the evening to free up time for family in the afternoon). Such arrangements can create the impression among colleagues that their team members are always available, which may explain the high values observed in descriptive norms. However, many participants reported that they do not expect one another to be available or to address work-related matters outside of regular working hours. The consistently low levels of normative pressure support this assumption, with the IG showing significantly lower levels of integration norms compared to the CG at baseline. That said, despite the low perceived normative pressure, some teams were unsure whether their perceptions were accurate. Therefore, they benefited from openly discussing their individual preferences and confirming each other's openness to different styles of boundary management. This is reflected in the significant increase in norm clarity after the workshop. In this way, the clarification of norms may have facilitated greater segmentation independently of integration norms. This observation aligns with the intervention study by Heissler et

al. (2024), in which a supervisor training contributed to a reduction in availability ambiguity, independent of availability expectations. Consequently, contrary to some recommendations in the literature, a standardized ICT etiquette in the form of uniform rules (Day et al., 2019) may not be essential. Rather, it may be more important to clarify mutual, possibly absent, expectations. Future research might therefore focus on assessing teams' norm clarity and openness to diverse approaches to boundary management, as well as the underlying mechanisms related to boundary management, such as boundary control and integration enactment.

Third, building on evidence that social support from the team empowers employees to manage boundaries between work and private life (Kossek et al., 2021), we specifically targeted FSTB as one of the proximate outcomes. Compared to the CG, FSTB increased significantly at two and six months post-workshop. These findings are consistent with Kossek et al. (2021), who emphasized the importance of mutual support within teams when dealing with blurring boundaries, as well as with previous supervisor-focused interventions that reported increases in FSTB after the intervention (e.g., Kelly et al., 2014; Odle-Dusseau et al., 2016). In practical terms, this suggests that jointly reflecting on personal boundary management and challenges at the team level may help foster FSTB.

Implementation Process

Contrary to the existing literature (Fridrich et al., 2020; Füllemann et al., 2016; Jenny et al., 2015), workshop appraisal and satisfaction with action plans showed rather limited moderating effects on workshop outcomes. However, the results provide an initial indication that the workshop was more effective when participants evaluated it more positively. Specifically, stronger reductions in integration norms and a greater decline in integration enactment were observed among those participants who rated the workshop and action plans more favorably. This is particularly relevant given the non-significant group differences over time in integration enactment, as it offers insight into who benefited from the intervention. The generally limited moderation effects may be explained by the relatively high mean values and low standard deviations in workshop appraisal and satisfaction with action plans. These results suggest that key design criteria for organizational interventions, such as comprehensibility, participatory approach, relevance to team members, and alignment with team needs, were largely met across all teams during the workshop implementation (Fridrich et al., 2020; Nielsen & Randall, 2013).

Consistent with findings from related fields (Ebner & Gegenfurtner, 2019; Rafieifar et al., 2024), the workshop format, whether delivered online or on-site, did not significantly impact the outcomes. Both delivery formats appear to have equally facilitated active engagement with the topic. This suggests that teams can choose the workshop format that best suits their specific needs without compromising its effectiveness.

Limitations and Future Research

The study also has some methodological limitations. The first limitation relates to the time lag in data collection, with data from the CG collected several months after that from the IG. Employing a control group allows for attributing changes in the IG to the intervention rather than to naturally occurring temporal fluctuations, including seasonal variations in well-being during summer or shifts in occupational demands (Shadish et al., 2002). Therefore, the time lag between the IG and CG limits the temporal comparability of both groups and may weaken the validity of the results. However, this limitation is mitigated by the fact that the teams of the IG did not all enter the study at the same point in time. The staggered start reduces the likelihood that the observed effects can be explained solely by time-bound factors such as seasonal influences. Second, scalar measurement invariance of several outcomes was not achieved. This suggests that the results should be interpreted with caution. While it is possible that the effects of the intervention have been overestimated, there is also a possibility that they have been underestimated. Third, as the study sample was highly selective, specific characteristics of the sample and the intervention must be considered when interpreting the results. One relevant aspect is that participants voluntarily engaged in the study and were motivated to reflect on the topic of boundary management. Supporting this assumption, the IG reported lower levels of norm clarity compared to the CG at baseline, possibly indicating a higher need for the intervention. This may have increased the intention of implementing action plans (Nielsen & Randall, 2013). Moreover, in most cases, participation was initiated by supervisors who had already been sensitized to the topic prior to the intervention. This suggests strong managerial support for the intervention itself and may also have facilitated the implementation of action plans (Nielsen & Randall, 2013). Another important aspect regarding the sample is that the teams were often part of organizations that actively promoted favorable working conditions and prioritized employee well-being. This is reflected in the data, as the IG showed

more favorable baseline values on several outcomes compared to the CG (e.g., descriptive integration norms of the supervisor, normative pressure, FSTB, boundary control, and integration enactment). This observation aligns with existing literature, which notes that many interventions are conducted with healthy individuals (Aust et al., 2023). On the one hand, this could limit the generalizability of the results to teams in less supportive organizational environments. On the other hand, the favorable baseline levels, however, might have constrained the potential impact of the intervention, as teams with already positive conditions might experience less pronounced benefits from the intervention. The evidence on this matter is mixed. Some studies suggest that individuals with less favorable baseline levels benefit more from interventions, while those with more favorable baseline levels “only” tend to maintain their level (Jenny et al., 2015; Sieder et al., 2024). In contrast, other research indicates that individuals with more favorable baseline levels are better able to implement interventions and thus gain greater benefits (Nielsen & Randall, 2012; von Thiele Schwarz et al., 2017). Future research should explore whether greater effects could be achieved by involving teams with less favorable initial conditions, such as higher availability expectations and lower levels of social support.

This paper deliberately examined the proximate and intermediate outcomes that the workshop was designed to directly influence, to determine the extent to which it affected participants’ boundary management. Future analyses could broaden this scope by additionally examining the effects of the intervention on distal outcomes, such as well-being, life domain balance, and performance, as these are key indicators for both individuals and organizations.

Practical Implications and Conclusion

The workshop represents a concise intervention at the individual and team level within an organizational context, designed to equip individuals and teams with boundary management skills for navigating flexible work arrangements. The intervention promotes boundary management and can be delivered in both online and on-site formats. Based on the results, we recommend fostering an open atmosphere during the workshop, allowing team members to familiarize themselves with one another and discuss their individual needs and preferences regarding boundary management. It is essential to clarify any existing, or non-existing expectations and to encourage openness to diverse approaches to boundary management. Furthermore, we recommend reflecting on the individual behavior changes after

the workshop, ensuring that these changes are visible to colleagues. Our study provides practical value by offering a detailed manual, empowering organizations to implement the intervention effectively. In turn, this enhances boundary management regarding self-directed and team-directed outcomes.

Acknowledgements

The authors thank Julia Widler for her support in the project.

Disclosure statement

We have no known conflict of interest to disclose.

Funding

This research was supported by the Swiss National Science Foundation Grant (407740_187515) to Michaela Knecht and Laurenz L. Meier.

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Tables

Table 1*Means, Standard Deviations, Correlations, and Reliabilites (McDonald's Omega) of the Outcomes*

	Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
1.	WFBMT T1	3.58	0.72																																				
2.	WFBMT T2	3.64	0.70	.66																																			
3.	WFBMT T3	3.63	0.70	.66	.74																																		
4.	WFBMT T4	3.65	0.69	.65	.70	.69																																	
5.	INDS T1	3.40	0.99	-.03	-.06	-.03	-.08																																
6.	INDS T2	3.40	0.98	-.02	-.02	-.07	-.06	.60																															
7.	INDS T3	3.32	0.99	-.05	-.08	-.02	-.03	.59	.63																														
8.	INDS T4	3.24	0.95	-.03	-.05	-.09	-.02	.49	.55	.58																													
9.	INDT T1	2.83	0.99	-.19	-.18	-.20	-.21	.39	.33	.28	.27																												
11.	INDT T2	2.81	0.97	-.18	-.25	-.26	-.19	.33	.39	.34	.31	.56																											
12.	INDT T3	2.79	0.97	-.23	-.28	-.27	-.29	.34	.27	.40	.29	.56	.65																										
13.	INDT T4	2.76	0.98	-.19	-.24	-.24	-.26	.31	.32	.29	.43	.55	.58	.64																									
14.	INNP T1	2.20	1.05	-.21	-.28	-.30	-.24	.28	.30	.26	.26	.53	.39	.40	.44																								
15.	INNP T2	2.16	1.06	-.15	-.24	-.27	-.19	.20	.35	.28	.25	.38	.54	.40	.40	.60																							
16.	INNP T3	2.21	1.04	-.20	-.28	-.24	-.26	.23	.29	.38	.28	.38	.46	.54	.43	.57	.67																						
17.	INNP T4	2.15	1.06	-.22	-.32	-.28	-.26	.24	.30	.27	.38	.35	.37	.36	.56	.56	.59	.63																					
18.	NOCL T1	3.19	0.89	.34	.26	.27	.27	-.05	-.01	-.02	.05	-.15	-.16	-.18	-.10	-.09	-.10	-.12	-.10	-.12																			
19.	NOCL T2	3.41	0.83	.20	.32	.25	.28	-.01	.02	-.07	-.07	-.12	-.11	-.12	-.09	-.14	-.10	-.16	-.15	.41																			
20.	NOCL T3	3.37	0.83	.22	.24	.30	.25	-.03	-.03	-.05	-.12	-.03	-.02	-.05	-.08	-.17	-.10	-.14	-.15	.34	.52																		
21.	NOCL T4	3.41	0.93	.25	.29	.27	.36	-.04	.00	-.06	-.01	-.08	-.20	-.16	-.10	-.13	-.13	-.21	-.15	.37	.55	.50																	
22.	FSTB T1	3.66	0.81	.30	.28	.19	.26	.07	.08	.02	.07	-.04	-.04	-.09	.02	-.19	-.12	-.21	-.15	.30	.31	.31	.37																
23.	FSTB T2	3.68	0.80	.28	.32	.26	.32	.10	.06	-.00	.01	.00	-.04	-.09	-.06	-.16	-.12	-.21	-.16	.19	.33	.31	.34	.60															

Table 1*Continued*

	Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36													
24.	FSTB T3	3.67	0.81	.25	.33	.31	.33	.10	.08	.07	-.01	-.01	-.06	-.10	-.05	-.21	-.20	-.22	-.22	.22	.30	.38	.41	.58	.62	(80)																										
25.	FSTB T4	3.62	0.80	.24	.32	.25	.38	.07	.11	.09	.11	-.01	-.05	-.14	-.07	-.18	-.16	-.24	-.23	.28	.39	.30	.45	.53	.63	.63	(79)																									
26.	BC T1	4.00	0.78	.42	.37	.36	.36	.03	-.03	.00	-.03	-.12	-.13	-.16	-.08	-.27	-.19	-.23	-.14	.19	.16	.09	.19	.37	.29	.30	.26	(81)																								
27.	BC T2	4.01	0.81	.32	.41	.38	.37	-.04	-.06	-.05	-.07	-.14	-.16	-.16	-.14	-.26	-.28	-.28	-.24	.17	.22	.10	.20	.25	.33	.26	.26	.55	(84)																							
28.	BC T3	3.99	0.79	.38	.41	.45	.41	-.01	-.06	.01	-.11	-.14	-.13	-.17	-.20	-.26	-.27	-.25	-.25	.15	.16	.14	.22	.27	.27	.26	.21	.54	.64	(85)																						
29.	BC T4	4.03	0.83	.35	.40	.39	.49	-.04	-.09	-.10	-.05	-.12	-.13	-.22	-.18	-.27	-.26	-.32	-.26	.12	.19	.11	.26	.22	.30	.24	.32	.55	.59	.61	(86)																					
30.	IE T1	2.85	0.97	-.37	-.37	-.35	-.37	.32	.27	.25	.19	.46	.41	.36	.37	.46	.45	.44	.40	-.02	.00	-.04	-.04	-.02	-.08	-.03	-.10	-.22	-.23	-.28	-.23	(93)																				
31.	IE T2	2.76	0.97	-.37	-.43	-.44	-.38	.26	.29	.20	.21	.38	.45	.39	.32	.39	.50	.47	.41	-.04	-.03	-.04	-.06	-.00	-.03	-.08	-.06	-.22	-.26	-.27	-.22	.71	(94)																			
32.	IE T3	2.80	0.99	-.40	-.44	-.42	-.39	.28	.19	.27	.20	.35	.41	.47	.36	.41	.45	.50	.44	-.09	-.05	.00	-.07	-.05	-.05	-.01	-.12	-.25	-.23	-.28	-.31	.72	.71	(94)																		
33.	IE T4	2.75	1.00	-.40	-.45	-.45	-.42	.30	.26	.26	.28	.37	.40	.42	.47	.45	.49	.50	.57	-.01	-.03	-.03	-.06	.04	-.04	-.05	-.07	-.21	-.21	-.30	-.25	.72	.71	.78	(94)																	
34.	WS appraisal Tx	4.16	0.51	.01	.06	.02	.06	.16	.16	.26	.07	.03	-.06	-.04	-.01	.08	-.06	-.16	-.10	.12	.07	.08	.12	.14	.09	.13	.17	-.02	-.02	-.05	-.00	.09	-.04	-.01	.09	(91)																
35.	WS satisfaction Tx	3.93	0.77	.05	.07	.00	.04	.16	.03	.28	.10	.04	-.04	.06	.08	.04	.00	-.13	-.02	.05	.10	.14	.09	.06	.06	.11	.10	.04	-.03	-.07	.00	.09	.01	.07	.09	.40	-															
36.	WS format Tx	0.40	0.49	-.04	-.01	-.04	.04	-.03	.06	.10	.12	-.02	.02	.03	-.00	.04	-.01	.13	-.03	-.07	-.03	-.06	.02	-.03	-.03	.08	.16	-.03	.00	-.00	.10	-.04	.02	-.01	-.06	-.12	-.10	-														
37.	Group IG/CG	0.65	0.48	.02	-.12	-.06	-.09	.13	.15	.17	.17	.01	.04	.02	.05	.34	.34	.35	.35	.06	-.17	-.17	-.16	-.16	-.19	-.22	-.24	-.11	-.17	-.17	-.23	.16	.18	.18	.23	-	-	-														

Note. Omega reliabilities are reported on the diagonal. Statistically significant correlations (two-tailed tests, $p < .05$) are shown in bold. No correlations

between WS_appraisal, WS_satisfaction, WS_format, and Group_IG_CG were calculated, as the WS variables were assessed only in the intervention group.

The variable “Group” is coded as 0 = intervention group, 1 = control group. Abbreviations: BC = boundary control; FSTB = family-supportive team behavior;

IE = integration enactment; INDS = descriptive integration norms of the supervisor; INDT = descriptive integration norms of the team; INNP = normative

pressure; NOCL = norm clarity; T1–T4 = time points of measurement (T1 = baseline, T2 = 1 month, T3 = 2 months, T4 = 6 months, Tx = directly after the

workshop); WFBMT = work–family boundary management tactics; WS_appraisal = workshop appraisal; WS_format = workshop format; WS_satisfaction =

satisfaction with action plans.

Table 2*Fit of Models and Measurement Invariance (Comparison Over Time)*

Model	χ^2	df	CFI	TLI	RMSEA	[90% CI]	AIC	BIC
Work-family boundary management tactics								
1. Configural invariance	509.03	296	.982	.971	.024	[.021 .028]	72152.57	73497.01
2. Metric invariance	533.17	320	.982	.973	.024	[.020 .027]	72128.71	73350.93
3. Scalar invariance	589.97*	344	.980	.971	.024	[.021 .028]	72137.51	73237.51
Integration norms (descriptive team, descriptive supervisor, normative pressure)								
1. Configural invariance	608.94	350	.979	.970	.029	[.025 .033]	45234.04	46236.87
2. Metric invariance	635.00	374	.979	.972	.028	[.024 .032]	45212.09	46100.31
3. Scalar invariance	654.06	398	.979	.974	.027	[.023 .031]	45183.16	45956.77
Norm clarity								
1. Configural invariance	43.55	30	.996	.992	.023	[.000 .037]	17941.17	18227.70
2. Metric invariance	60.29	39	.994	.990	.025	[.011 .037]	17939.92	18183.46
3. Scalar invariance	98.87*	48	.986	.981	.035	[.025 .045]	17960.50	18161.06
Family supportive team behavior								
1. Configural invariance	49.61	30	.994	.987	.027	[.012 .040]	17770.62	18057.21
2. Metric invariance	62.72	39	.993	.988	.026	[.013 .038]	17765.72	18009.32
3. Scalar invariance	80.38*	48	.991	.987	.028	[.017 .038]	17765.38	17966.00
Boundary control								
1. Configural invariance	62.03	30	.995	.988	.030	[.019 .040]	22457.41	22763.01
2. Metric invariance	73.52	39	.994	.990	.027	[.017 .037]	22450.90	22710.66
3. Scalar invariance	78.20	48	.995	.993	.023	[.013 .032]	22437.58	22651.50
Integration enactment								
1. Configural invariance	373.99	188	.990	.986	.029	[.024 .033]	48436.31	49128.90
2. Metric invariance	379.85	206	.991	.988	.026	[.022 .031]	48406.17	49007.10
3. Scalar invariance	435.04*	224	.989	.986	.028	[.024 .032]	48425.36	48934.62

Note. Abbreviations: AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; CFI = Comparative Fit Index; CI = Confidence Interval; df = degrees of freedom; RMSEA = Root Mean Square Error of Approximation; TLI = Tucker-Lewis Index; χ^2 = chi-square. * $p < .05$.

Table 3

Multilevel Analyses Predicting Proximate and Intermediate Outcomes 1, 2, and 6 Months After the Workshop: Interaction Effects of Group Over Time

Work-family boundary management tactics						
		Value	SE	df	t-value	p-value
Intercept	(T1)	3.55	0.03	2295	102.14	<.01*
Control Group		0.04	0.04	1201	0.86	.20
Δ after 1 month	(T2)	0.18	0.03	2295	5.74	.00*
Δ after 2 months	(T3)	0.16	0.03	2295	4.89	.00*
Δ after 6 months	(T4)	0.14	0.03	2295	4.26	.00*
Interaction with time point						
Δ after 1 month x group	(T2)	-0.19	0.04	2295	-4.98	.00*
Δ after 2 months x group	(T3)	-0.16	0.04	2295	-4.06	.00*
Δ after 6 months x group	(T4)	-0.10	0.04	2295	-2.32	.00*
Descriptive integration norms of the supervisor						
		Value	SE	df	t-value	p-value
Intercept	(T1)	3.23	0.06	1912	53.64	.00*
Is ControlGroup		0.28	0.07	1128	3.98	.00*
Δ after 1 month	(T2)	-0.07	0.07	1912	-0.98	.16
Δ after 2 months	(T3)	-0.09	0.07	1912	-1.32	.09
Δ after 6 months	(T4)	-0.06	0.07	1912	-0.94	.17
Interaction with time point						
Δ after 1 month: group	(T2)	0.07	0.08	1912	0.85	.20
Δ after 2 months: group	(T3)	0.07	0.08	1912	0.82	.21
Δ after 6 months: group	(T4)	0.01	0.08	1912	0.14	.44
Descriptive integration norms of the team						
		Value	SE	df	t-value	p-value
Intercept	(T1)	2.78	0.05	1778	57.24	.00*
Is ControlGroup		0.06	0.06	926	0.86	.20
Δ after 1 month	(T2)	-0.05	0.05	1778	-1.06	.14
Δ after 2 months	(T3)	-0.03	0.05	1778	-0.53	.30
Δ after 6 months	(T4)	-0.06	0.05	1778	-1.05	.15
Interaction with time point						
Δ after 1 month: group	(T2)	0.07	0.07	1778	1.03	.15
Δ after 2 months: group	(T3)	0.04	0.07	1778	0.57	.29
Δ after 6 months: group	(T4)	0.05	0.07	1778	0.64	.26

Table 3*Continued*

Normative pressure						
		Value	SE	df	t-value	p-value
Intercept	(T1)	1.81	0.05	2293	33.64	.00*
Is ControlGroup		0.86	0.07	1201	13.01	.00*
Δ after 1 month	(T2)	-0.03	0.06	2293	-0.60	.27
Δ after 2 months	(T3)	-0.01	0.06	2293	-0.14	.45
Δ after 6 months	(T4)	0.01	0.06	2293	0.16	.44
Interaction with time point						
Δ after 1 month: group	(T2)	0.02	0.07	2293	0.31	.38
Δ after 2 months: group	(T3)	0.07	0.07	2293	1.02	.15
Δ after 6 months: group	(T4)	0.03	0.08	2293	0.32	.37
Norm clarity						
		Value	SE	df	t-value	p-value
Intercept	(T1)	3.13	0.04	1777	73.38	.00*
Is ControlGroup		0.11	0.06	926	1.92	.00*
Δ after 1 month	(T2)	0.44	0.05	1777	8.99	.00*
Δ after 2 months	(T3)	0.46	0.05	1777	8.98	.00*
Δ after 6 months	(T4)	0.41	0.05	1777	7.49	.00*
Interaction with time point						
Δ after 1 month: group	(T2)	-0.40	0.07	1777	-6.05	.00*
Δ after 2 months: group	(T3)	-0.47	0.07	1777	-6.75	.00*
Δ after 6 months: group	(T4)	-0.38	0.08	1777	-5.00	.00*
Family-supportive team behavior						
		Value	SE	df	t-value	p-value
Intercept	(T1)	3.82	0.04	1667	91.00	.00*
Is ControlGroup		-0.26	0.05	875	-4.83	.00*
Δ after 1 month	(T2)	0.02	0.04	1667	0.58	.28
Δ after 2 months	(T3)	0.07	0.04	1667	1.67	.05*
Δ after 6 months	(T4)	0.00	0.05	1667	0.06	.48
Interaction with time point						
Δ after 1 month: group	(T2)	-0.04	0.06	1667	-0.66	.25
Δ after 2 months: group	(T3)	-0.13	0.06	1667	-2.16	.00*
Δ after 6 months: group	(T4)	-0.11	0.06	1667	-1.74	.00*

Table 3*Continued*

Boundary control						
		Value	SE	df	t-value	p-value
Intercept	(T1)	4.12	0.04	2309	105.45	.00*
Is ControlGroup		-0.17	0.05	1202	-3.61	.00*
Δ after 1 month	(T2)	0.05	0.04	2309	1.36	.09
Δ after 2 months	(T3)	0.05	0.04	2309	1.09	.14
Δ after 6 months	(T4)	0.12	0.04	2309	2.69	.00*
Interaction with time point						
Δ after 1 month: group	(T2)	-0.08	0.05	2309	-1.54	.06
Δ after 2 months: group	(T3)	-0.09	0.05	2309	-1.76	.00*
Δ after 6 months: group	(T4)	-0.17	0.06	2309	-3.00	.00*
Integration enactment						
		Value	SE	df	t-value	p-value
Intercept	(T1)	2.62	0.05	2294	55.19	.00*
Is ControlGroup		0.34	0.06	1201	5.80	.00*
Δ after 1 month	(T2)	-0.10	0.04	2294	-2.35	.00*
Δ after 2 months	(T3)	-0.08	0.04	2294	-1.84	.00*
Δ after 6 months	(T4)	-0.10	0.05	2294	-2.19	.00*
Interaction with time point						
Δ after 1 month: group	(T2)	0.04	0.05	2294	0.71	.24
Δ after 2 months: group	(T3)	0.05	0.05	2294	0.99	.16
Δ after 6 months: group	(T4)	0.05	0.06	2294	0.92	.18

Note. Abbreviations: df = degrees of freedom; SE = standard error; T1–T4 = time points of measurement (T1 = baseline, T2 = 1 month, T3 = 2 months, T4 = 6 months); Δ = change from baseline. The variable “Is ControlGroup” is coded as 0 = intervention group, 1 = control group. Interaction terms represent group differences in change over time. * $p < .05$.

Table 4

Multilevel Analyses Predicting Proximate and Intermediate Outcomes 1, 2, and 6 Months After the Workshop: Interaction Effects of Moderator $\times$ Time for Workshop Appraisal, Satisfaction with the Action Plans, and Workshop Format

Work-family boundary management tactics		Workshop appraisal					Satisfaction with action plans					Workshop format				
		Value	SE	df	t-value	p-value	Value	SE	df	t-value	p-value	Value	SE	df	t-value	p-value
Intercept	(T1)	3.61	0.04	760	91.65	.00*	3.61	0.04	757	92.09	.00*	3.61	0.05	822	79.08	.00*
Is supervisor		-0.36	0.10	347	-3.68	.00*	-0.35	0.09	346	-3.64	.00*	-0.31	0.09	408	-3.35	.00*
Δ after 1 month	(T2)	0.18	0.03	760	6.23	.00*	0.18	0.03	757	6.33	.00*	0.17	0.04	822	4.78	.00*
Δ after 2 months	(T3)	0.17	0.03	760	5.57	.00*	0.17	0.03	757	5.56	.00*	0.18	0.04	822	4.71	.00*
Δ after 6 months	(T4)	0.14	0.03	760	4.37	.00*	0.15	0.03	757	4.53	.00*	0.14	0.04	822	3.52	.00*
Moderator (WSA / SAP / FORM)		0.06	0.07	347	0.76	.22	0.06	0.05	346	1.23	.11	-0.04	0.07	408	-0.64	.52
Interaction with time point																
Δ after 1 month: moderator	(T2)	0.09	0.06	760	1.54	.06	0.02	0.04	757	0.42	.34	0.01	0.06	822	0.13	.90
Δ after 2 months: moderator	(T3)	0.05	0.06	760	0.80	.21	-0.02	0.04	757	-0.55	.29	-0.05	0.06	822	-0.80	.42
Δ after 6 months: moderator	(T4)	0.07	0.07	760	1.00	.16	-0.01	0.04	757	-0.19	.42	0.01	0.06	822	0.20	.84
Descriptive integration norms of the supervisor																
		Workshop appraisal					Satisfaction with action plans					Workshop format				
		Value	SE	df	t-value	p-value	Value	SE	df	t-value	p-value	Value	SE	df	t-value	p-value
Intercept	(T1)	3.25	0.07	412	48.03	.00*	3.26	0.07	412	49	.00*	3.19	0.07	439	44.23	.00*
Δ after 1 month	(T2)	-0.09	0.07	412	-1.19	.12	-0.09	0.07	412	-1.24	.11	-0.07	0.08	439	-0.94	.35
Δ after 2 months	(T3)	-0.11	0.08	412	-1.47	.07	-0.09	0.07	412	-1.22	.11	-0.15	0.08	439	-1.77	.08
Δ after 6 months	(T4)	-0.05	0.07	412	-0.72	.24	-0.06	0.07	412	-0.84	.20	-0.09	0.08	439	-1.16	.25
Moderator (WSA / SAP / FORM)		0.38	0.14	286	2.63	.00*	0.25	0.09	285	2.92	.00*	0.11	0.13	336	0.82	.41
Interaction with time point																
Δ after 1 month: moderator	(T2)	-0.12	0.15	412	-0.8	.21	-0.22	0.09	412	-2.56	.00*	0.02	0.14	439	0.13	.90
Δ after 2 months: moderator	(T3)	0.05	0.16	412	0.28	.39	-0.02	0.09	412	-0.18	.43	0.15	0.15	439	1.03	.30
Δ after 6 months: moderator	(T4)	-0.15	0.15	412	-1.00	.16	-0.14	0.09	412	-1.62	.05	0.09	0.14	439	0.60	.55

Table 4*Continued*

Descriptive integration norms of the team																
		Workshop appraisal					Satisfaction with action plans					Workshop format				
		Value	SE	df	t-value	p-value	Value	SE	df	t-value	p-value	Value	SE	df	t-value	p-value
Intercept	(T1)	2.77	0.05	759	58.5	.00*	2.76	0.05	756	58.41	.00*	2.81	0.06	820	49.24	.00*
Δ after 1 month	(T2)	-0.03	0.05	759	-0.58	.28	-0.03	0.05	756	-0.71	.24	-0.1	0.06	820	-1.7	.09
Δ after 2 months	(T3)	-0.03	0.05	759	-0.53	.30	-0.02	0.05	756	-0.48	.32	-0.06	0.06	820	-1.02	.31
Δ after 6 months	(T4)	-0.04	0.05	759	-0.68	.25	-0.03	0.05	756	-0.65	.26	-0.11	0.07	820	-1.62	.10
Moderator (WSA / SAP / FORM)		0.05	0.09	348	0.52	.30	0.06	0.06	347	0.96	.17	-0.08	0.09	409	-0.9	.37
Interaction with time point																
Δ after 1 month: moderator	(T2)	-0.24	0.10	759	-2.49	.00*	-0.11	0.06	756	-1.76	.00*	0.12	0.09	820	1.27	.20
Δ after 2 months: moderator	(T3)	-0.13	0.10	759	-1.31	.10	0.01	0.06	756	0.13	.45	0.08	0.1	820	0.89	.37
Δ after 6 months: moderator	(T4)	-0.08	0.11	759	-0.77	.22	0.03	0.07	756	0.44	.33	0.12	0.1	820	1.14	.25
Normative pressure																
		Workshop appraisal					Satisfaction with action plans					Workshop format				
		Value	SE	df	t-value	p-value	Value	SE	df	t-value	p-value	Value	SE	df	t-value	p-value
Intercept	(T1)	1.81	0.05	758	37.65	.00*	1.80	0.05	755	37.47	.00*	1.76	0.06	820	30.68	.00*
Δ after 1 month	(T2)	-0.03	0.05	758	-0.56	.29	-0.03	0.05	755	-0.56	.29	0.00	0.07	820	-0.01	.99
Δ after 2 months	(T3)	0.00	0.05	758	-0.07	.47	-0.01	0.05	755	-0.14	.45	-0.06	0.07	820	-0.91	.36
Δ after 6 months	(T4)	0.00	0.06	758	-0.01	.49	-0.01	0.06	755	-0.1	.46	0.04	0.07	820	0.60	.55
Moderator (WSA / SAP / FORM)		0.15	0.09	348	1.64	.05	0.08	0.06	347	1.32	.09	0.12	0.09	409	1.33	.19
Interaction with time point																
Δ after 1 month: moderator	(T2)	-0.29	0.11	758	-2.74	.00*	-0.08	0.07	755	-1.22	.11	-0.08	0.10	820	-0.79	.43
Δ after 2 months: moderator	(T3)	-0.32	0.11	758	-2.98	.00*	-0.20	0.07	755	-2.78	.00*	0.12	0.10	820	1.10	.27
Δ after 6 months: moderator	(T4)	-0.27	0.12	758	-2.34	.00*	-0.13	0.07	755	-1.75	.00*	-0.09	0.11	820	-0.83	.41

Table 4*Continued*

Norm clarity		Workshop appraisal					Satisfaction with action plans					Workshop format				
		Value	SE	df	t-value	p-value	Value	SE	df	t-value	p-value	Value	SE	df	t-value	p-value
Intercept	(T1)	3.18	0.04	759	74.87	.00*	3.18	0.04	756	74.87	.00*	3.18	0.05	819	59.58	.00*
Δ after 1 month	(T2)	0.45	0.05	759	8.79	.00*	0.45	0.05	756	8.82	.00*	0.43	0.06	819	6.73	.00*
Δ after 2 months	(T3)	0.46	0.05	759	8.67	.00*	0.47	0.05	756	8.76	.00*	0.46	0.07	819	6.74	.00*
Δ after 6 months	(T4)	0.40	0.06	759	7.18	.00*	0.41	0.06	756	7.34	.00*	0.37	0.07	819	5.26	.00*
Moderator (WSA / SAP / FORM)		0.15	0.08	348	1.84	.00*	0.03	0.05	347	0.61	.27	-0.12	0.08	409	-1.47	.14
Interaction with time point																
Δ after 1 month: moderator	(T2)	0.01	0.10	759	0.13	.45	0.03	0.07	756	0.52	.30	0.03	0.10	819	0.31	.76
Δ after 2 months: moderator	(T3)	-0.01	0.10	759	-0.07	.47	0.11	0.07	756	1.55	.06	0.02	0.10	819	0.18	.86
Δ after 6 months: moderator	(T4)	0.05	0.11	759	0.47	.32	0.03	0.07	756	0.48	.32	0.1	0.11	819	0.88	.38
Family-supportive team behavior																
		Value	SE	df	t-value	p-value	Value	SE	df	t-value	p-value	Value	SE	df	t-value	p-value
Intercept	(T1)	3.83	0.04	647	95.29	.00*	3.83	0.04	644	96.03	.00*	3.83	0.05	709	79.74	.00*
Δ after 1 month	(T2)	0.01	0.04	647	0.35	.36	0.02	0.04	644	0.42	.34	0.05	0.05	709	0.96	.34
Δ after 2 months	(T3)	0.07	0.04	647	1.62	.05	0.07	0.04	644	1.75	.00*	0.03	0.05	709	0.64	.52
Δ after 6 months	(T4)	0.00	0.04	647	0.03	.49	0.01	0.04	644	0.13	.45	-0.07	0.05	709	-1.20	.23
Moderator (WSA / SAP / FORM)		0.19	0.08	298	2.48	.00*	0.06	0.05	297	1.20	.12	-0.03	0.08	358	-0.44	.66
Interaction with time point																
Δ after 1 month: moderator	(T2)	-0.06	0.08	647	-0.82	.21	0.00	0.05	644	-0.02	.49	-0.05	0.07	709	-0.67	.50
Δ after 2 months: moderator	(T3)	-0.06	0.08	647	-0.77	.22	0.02	0.05	644	0.31	.38	0.09	0.08	709	1.19	.23
Δ after 6 months: moderator	(T4)	-0.05	0.08	647	-0.59	.28	0.01	0.06	644	0.16	.44	0.16	0.08	709	1.88	.06

Table 4*Continued*

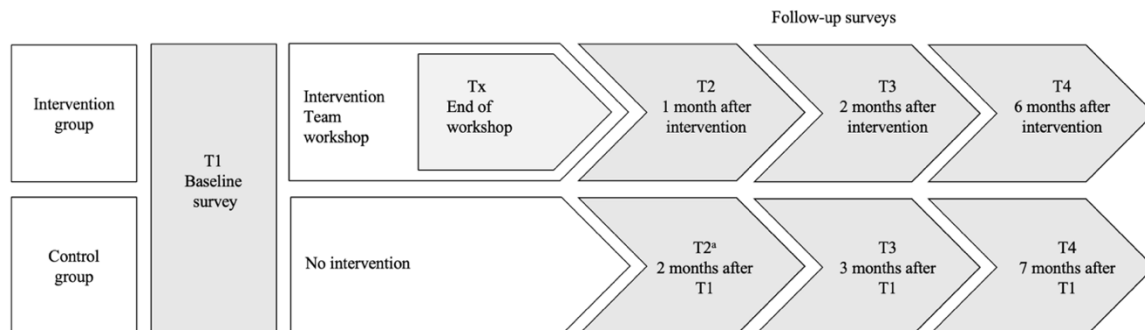
Boundary control		Workshop appraisal					Satisfaction with action plans					Workshop format				
		Value	SE	df	t-value	p-value	Value	SE	df	t-value	p-value	Value	SE	df	t-value	p-value
Intercept	(T1)	4.13	0.04	772	106.99	.00*	4.13	0.04	769	107.2	.00*	4.14	0.05	836	91.9	.00*
Is supervisor		-0.10	0.09	347	-1.17	.12	-0.11	0.09	346	-1.28	.10	-0.09	0.08	409	-1.01	.31
Δ after 1 month	(T2)	0.06	0.04	772	1.61	.05	0.07	0.04	769	1.78	.00*	0.05	0.05	836	1.16	.25
Δ after 2 months	(T3)	0.04	0.04	772	1.06	.14	0.03	0.04	769	0.91	.18	0.05	0.05	836	1.04	.30
Δ after 6 months	(T4)	0.13	0.04	772	3.27	.00*	0.13	0.04	769	3.16	.00*	0.09	0.05	836	1.8	.07
Moderator (WSA / SAP / FORM)		-0.02	0.07	347	-0.32	.38	0.04	0.05	346	0.79	.21	-0.03	0.07	409	-0.42	.67
Interaction with time point																
Δ after 1 month: moderator	(T2)	0.01	0.08	772	0.07	.47	-0.05	0.05	769	-1.08	.14	0.01	0.07	836	0.07	.94
Δ after 2 months: moderator	(T3)	-0.02	0.08	772	-0.31	.38	-0.07	0.05	769	-1.44	.08	-0.01	0.07	836	-0.11	.91
Δ after 6 months: moderator	(T4)	-0.03	0.08	772	-0.34	.37	-0.04	0.05	769	-0.85	.20	0.07	0.08	836	0.93	.35
Integration enactment																
		Workshop appraisal					Satisfaction with action plans					Workshop format				
		Value	SE	df	t-value	p-value	Value	SE	df	t-value	p-value	Value	SE	df	t-value	p-value
Intercept	(T1)	2.55	0.05	759	51.01	.00*	2.55	0.05	756	50.92	.00*	2.59	0.06	821	44.95	.00*
Is supervisor		0.51	0.12	347	4.14	.00*	0.51	0.12	346	4.11	.00*	0.52	0.12	408	4.42	.00*
Δ after 1 month	(T2)	-0.09	0.03	759	-2.64	.00*	-0.10	0.04	756	-2.76	.00*	-0.14	0.04	821	-3.07	.00*
Δ after 2 months	(T3)	-0.08	0.04	759	-2.24	.00*	-0.08	0.04	756	-2.31	.00*	-0.11	0.05	821	-2.27	.00*
Δ after 6 months	(T4)	-0.11	0.04	759	-2.9	.00*	-0.11	0.04	756	-2.91	.00*	-0.12	0.05	821	-2.51	.00*
Moderator (WSA / SAP / FORM)		0.10	0.09	347	1.06	.15	0.08	0.06	346	1.28	.10	-0.08	0.09	408	-0.88	.38
Interaction with time point																
Δ after 1 month: moderator	(T2)	-0.24	0.07	759	-3.38	.00*	-0.09	0.05	756	-1.94	.00*	0.10	0.07	821	1.4	.16
Δ after 2 months: moderator	(T3)	-0.19	0.07	759	-2.65	.00*	-0.08	0.05	756	-1.78	.00*	0.06	0.07	821	0.86	.39
Δ after 6 months: moderator	(T4)	-0.08	0.08	759	-1.03	.15	-0.05	0.05	756	-0.98	.16	0.06	0.08	821	0.74	.46

Note. Abbreviations: df = degrees of freedom; SE = standard error; T1–T4 = time points of measurement (T1 = baseline, T2 = 1 month, T3 = 2 months, T4 = 6 months); Δ = change from baseline. The variable “Is supervisor” is coded as 0 = team member, 1 = supervisor. The workshop format is coded as 0 = on site, 1 = online. Moderator variables represent (1) workshop appraisal, (2) satisfaction with action plans, and (3) workshop format. Interaction terms indicate differences in change over time depending on the level of the respective moderator. * $p < .05$. For hypotheses testing, p-values (except for the intercept) were adjusted for one-tailed testing. For the research question, p-values were retained as two-tailed.

Figures

Figure 1

Study Design

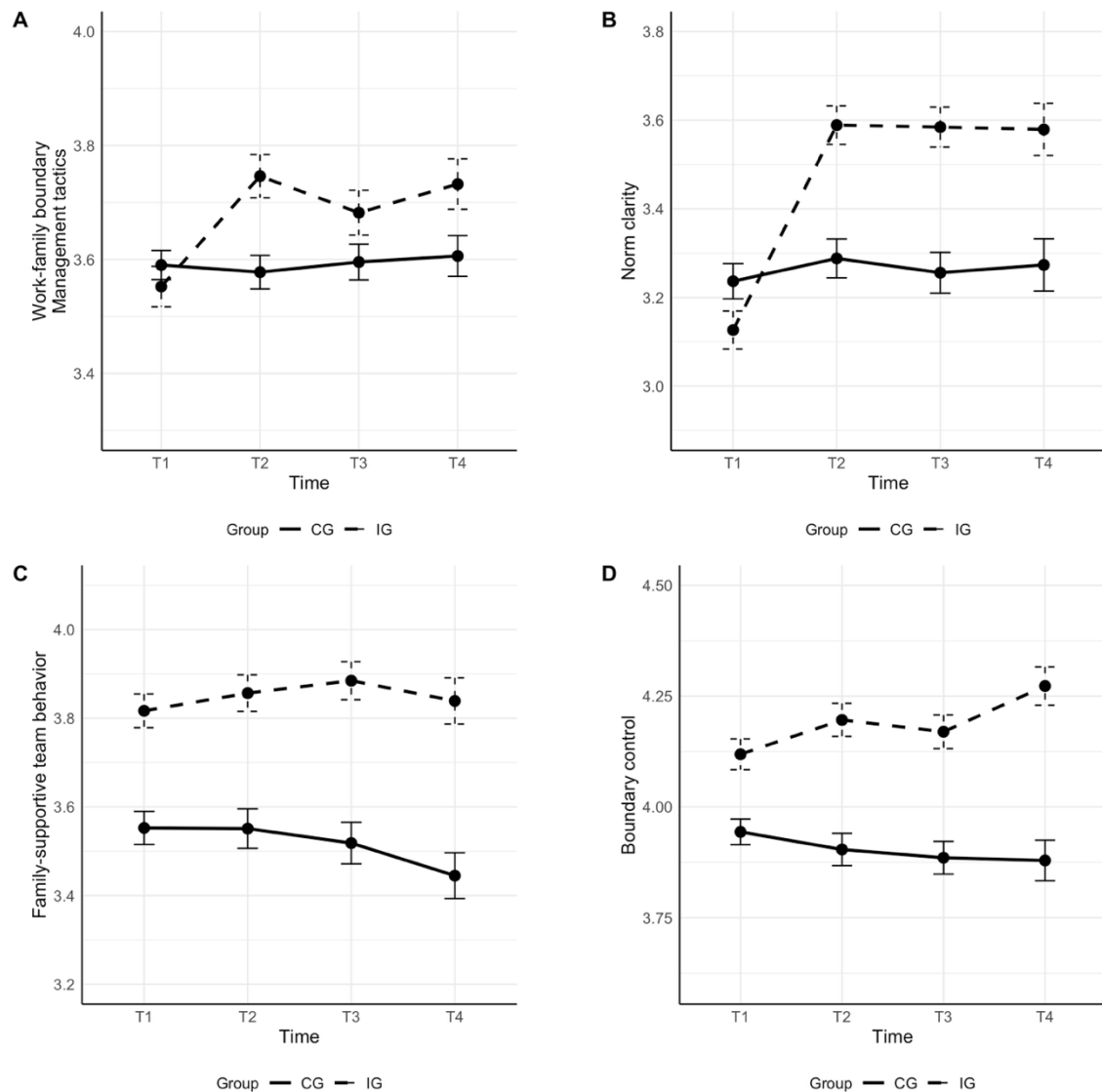


Note. T1-T4 refer to time points of measurement: T1 = baseline; Tx = immediately after the workshop; T2-T4 = follow-up surveys, representing the time elapsed since baseline (control group) or intervention (intervention group).

^a This time frame corresponds to the interval between T1 and T2 in the intervention group, ensuring that data in the control group were collected at equivalent time points.

Figure 2

Multilevel Analyses Predicting Proximate and Intermediate Outcomes 1, 2, and 6 Months After the Workshop: Significant Interaction Effects of Group Over Time



Note. A: Work-family boundary management tactics, B: Norm clarity. C: Family-supportive team behavior, D: Boundary control. Abbreviations: CG = Control group; IG = Intervention group; T1–T4 = Time points of measurement (T1 = baseline, T2 = 1 month, T3 = 2 months, T4 = 6 months). Dots show mean values. Error bars show standard errors. For A, B, C, and D high values represent favorable states.

Appendix

Appendix A

Design of the Workshop and the Retrospective: Description of the Proximate Outcomes, Their Implementation During the Workshop, and the Applied Behavior Change Techniques (according to Michie et al., 2013)

Workshop		
Proximate outcome/target	Implementation during the workshop	Behavior change technique
Increased use of work-family boundary management tactics	Introduction to the topic of boundary management	
	- The concept of New Ways of Working and its implications for the boundaries between work and private life are explained to the participants.	4.2 Information about antecedents
	- The importance of boundary management as a competence for individuals working in teams is emphasised.	5.1 Information about health consequences
	- Associations between boundary management and well-being, life balance, and performance are revealed.	5.3 Information about social and environmental consequences
		5.6 Information about emotional consequences
	Promoting the use of work-family boundary management tactics (WFBMT)	
	- The participants introduce themselves with an WFBMT that they already use successfully in their everyday lives and discuss about these tactics.	10.4 Social reward 15.3 Focus on past success
	- Relevant insights about the definition, types and mechanisms of WFBMT are provided.	4.1 Instruction on how to perform the behavior 5.1 Information about Health consequences 5.3 Information about social and environmental consequences 5.6 Information about emotional consequences
	- The participants select at least one WFBMT that they are going to implement as a new routine during the period between the workshop and a retrospective meeting.	1.1 Goal setting (behavior) 1.4 Action planning

Appendix A

Continued

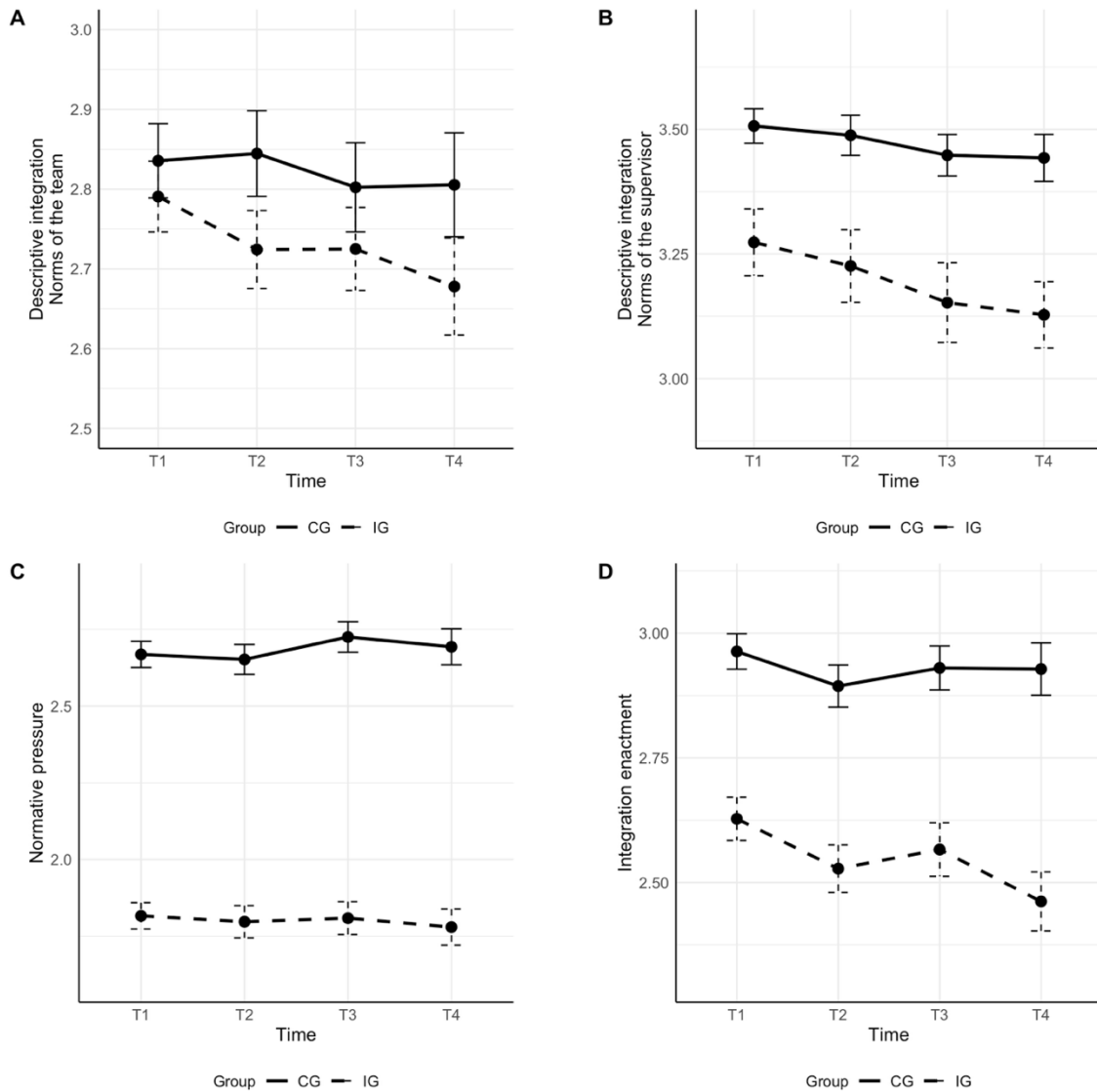
Proximate outcome / target	Implementation during the workshop	Behavior change technique
Enhancement of family-supportive team behavior	Promoting mutual understanding and support within the team for achieving work-life balance and effective boundary management	
	- Participants gain insight into the concepts of boundary preference and integration enactment.	
	- They engage in discussions regarding their individual boundary preference and integration enactment in their daily lives.	1.6 Discrepancy between current behavior and goal
	- Specific everyday scenarios are explored, allowing participants to reflect on the alignment or misalignment between their current behavior and their preference.	
	- Participants explore the diversity within the team and cultivate mutual understanding and respect for the varied needs and behaviors of team members.	3.3 Social support (emotional)
	- They acknowledge the interplay of behaviors among team members and begin to identify initial strategies for addressing challenges or establishing common behavioral standards.	6.2 Social comparison
		6.3 Information about others approval
Reduction of integration norms, improvement of norm clarity	Fostering social norms conducive to work-life segmentation and recognizing work-life fit as an integral aspect of the working environment.	
	- Participants engage in discussions regarding perceived current integration norms, drawing from suggested topics.	3.2 Social support (practical)
	- The potential misalignment between existing structures and social norms within the team is addressed and explored.	3.3 Social support (emotional)
		6.2 Social comparison
		6.3 Information about others approval
		9.1 Credible Source
		14.10 Remove punishment

Appendix A*Continued*

Proximate outcome / target	Implementation during the workshop	Behavior change technique
Reduction of integration norms, improvement of norm clarity	- Participants identify "pain points" for which they seek solutions. - These may include various aspects, such as: clarifying mutual expectations, establishing behavioral standards, optimizing work processes, formulating policies. - Concrete action plans are devised for each identified pain point. - It is recommended to evaluate the implementation of these measures during a retrospective.	1.2 Problem solving 1.4 Action planning
Retrospective on the workshop		
Proximate outcome / target	Implementation during the retrospective	Behavior change technique
Increased use of work-family boundary management tactics, enhancement of family-supportive team behavior	Check-in	
	- The participants reflect on the changes of their personal boundary management since the workshop. - They engage in discussions regarding their experiences with the implementation of WFBMTs and receive positive reinforcement from their colleagues.	1.5 Review behavior goal(s) 10.4 Social reward 15.3 Focus on past success
Reduction of integration norms, improvement of norm clarity	Main section	
	- The participants assess the implementation status of the planned measures within the team. - They deliberate on the remaining tasks requiring implementation or modification.	1.5 Review behavior goal(s) 1.7 Review outcome goal(s)
-	Check-out	
	- The participants rate how useful they found the retrospective.	1.7 Review outcome goal(s)

Appendix B

Multilevel Analyses Predicting Proximate and Intermediate Outcomes 1, 2, and 6 Months After the Workshop: Non-Significant Interaction Effects of Group Over Time



Note. A: Descriptive integration norms of the team, B: Descriptive integration norms of the supervisor.

C: Normative pressure, D: Integration enactment. Abbreviations: CG = Control group; IG = Intervention group; T1–T4 = Time points of measurement (T1 = baseline, T2 = 1 month, T3 = 2 months, T4 = 6 months). Dots show mean values. Error bars show standard errors. For A, B, and C, high values represent unfavorable states. For D high values denote favorable states.

Paper 3. Explaining Work Performance in Flexible Work Designs: The Limited Role of Work-Life Support and Boundary Management from a Job Demands-Resources Perspective

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Reference

Ott, I., Knecht, M., & Meier, L. L. (2025). *Explaining Work Performance in Flexible Work Designs: The Limited Role of Work-Life Support and Boundary Management from a Job Demands-Resources Perspective* [Manuscript submitted for publication].

Short Title :

Paper 3. Explaining Work Performance

Explaining Work Performance in Flexible Work Designs: The Limited Role of Work-Life**Support and Boundary Management from a Job Demands-Resources Perspective**

In light of digitalization, organizations increasingly adopt flexible work designs to enhance employees' work performance while promoting life domain balance. Yet such flexibility often blurs boundaries between work and private life, with potential negative consequences. Job characteristics related to work-life support and boundary management may therefore either facilitate or hinder employees' ability to perform effectively. Drawing on Job Demands-Resources theory, this study examines how work-life supportive leadership and boundary control as job resources, and integration norms and norm ambiguity as job demands, shape employees' work performance through work engagement and emotional exhaustion. A three-wave longitudinal study was conducted among employees with flexible work designs in Switzerland and Germany. Structural equation modeling tested indirect effects on employees' self-rated performance (T1: $N = 1019$; T2: $N = 840$; T3: $N = 329$) and supervisor-rated work performance (T1: $N = 486$; T2: $N = 428$; T3: $N = 386$). Findings provided limited support for the proposed model. Indirect effects via work engagement emerged for work-life supportive leadership, while boundary control, integration norms, and norm ambiguity showed no significant mediating effects. Further analyses revealed a direct positive effect of boundary control on contextual performance. Integration norms were positively associated with emotional exhaustion. These findings underscore the need for future research on how work-life support and boundary management influence performance, to investigate the effects of boundary management and work-life support on work performance, considering temporal dynamics and alternative explanatory mechanisms.

Keywords: boundary management, work-life supportive leadership, work performance, JD-R theory

Introduction

Organizations rely on employees' *work performance* as a key driver of success (Campbell & Wiernik, 2015). In the context of digitalization, one strategy of organizations to optimize performance while simultaneously promoting life domain balance is the implementation of flexible work designs (Casper et al., 2025; Kossek et al., 2023a). It is assumed that employees who can decide about the timing, the location, the work intensity and duration of work are better able to balance their life domains while maintaining the energy required for effective work performance (Kossek et al., 2023a). Previous

research has primarily focused on well-being and work-family outcomes of flexible work designs (Kossek et al., 2023b; Ohly & Venz 2025). However, as performance-related outcomes have been rarely considered in work-life and boundary management research (Campbell & Wiernik, 2015; Kossek et al., 2023b), little is known about the social context, specifically boundary management and work-life supportive workplace resources and demands linked to flexible work designs and their impact on work performance (Cooper & Lu, 2019; Kossek et al., 2023b). Accordingly, the present study aims to investigate the roles of boundary management and work-life support as job resources and demands, and their impact on employees' work performance. To achieve this goal, we conducted a longitudinal study among employees from various organizations with flexible work designs. Drawing on the *job demands-resources theory* (JD-R theory) (Bakker et al., 2023), we investigated the relationship between work-life supportive leadership and boundary control as job resources, integration norms and norm ambiguity as job demands, and work engagement and emotional exhaustion as predictors of work performance. Our approach aligns with theory on family-supportive organizational culture (Rofcanin et al., 2017; Thompson et al., 1999) and applies the JD-R theory to the work-life context in flexible work designs (Bakker et al., 2023; Demerouti et al., 2023).

This study makes several contributions to the literature. First, following the call for research regarding flexible work designs, we examine relevant factors influencing work performance in the context of work-life support and boundary management (Kossek et al., 2023b). Specifically, we strengthen the role of work-life support and boundary management research, by clarifying the extent to which specific aspects of these research fields, such as work-life supportive leadership and integration norms, function as a resource or a demand. Moreover, by examining the influence of specific aspects of boundary management in the workplace on work performance, we expand the limited existing research that has focused on the relationship between individual boundary management and work performance (Ren et al., 2023; Yeh et al., 2020). Additionally, we apply a performance measure that reflects contemporary criteria for work performance, such as independent and goal-oriented behavior, as well as showing initiative in problem-solving and personal development (Campbell & Wiernik, 2015; Koopmans et al., 2011). This allows us to offer valuable insights into how work performance manifests in today's workplace. Second, our study design makes a valuable contribution. By conducting a

longitudinal study, we address the call for research on longitudinal studies in work-life research and in the research on the JD-R theory (Crain & Stevens, 2018; Lesener et al., 2019). This design allows us to capture within-person changes over time and to draw more robust conclusions about temporal dynamics and potential causal relationships (Taris & Kompier, 2014). Third, our study offers practical value by exploring the potential links between work-life support, boundary management, and work performance, a relationship that is of increasing interest for organizations aiming to foster both employee well-being and productivity. In turn, these insights may provide valuable orientation for corporate health management and the strategic design of work.

Navigating Work and Private Life in Flexible Work Designs: A JD-R Perspective on Work Performance

Flexible work designs are associated with specific job characteristics that can affect how individuals balance their work and private life and manage the boundaries between these life domains (Demerouti et al., 2014). High autonomy regarding work time and location, combined with virtual collaboration, allows for better alignment between work and personal life (Allen et al., 2015), but can also lead to increased work intensification, role ambiguity, and demands on self-regulation (Bilotta et al., 2021; Ohly & Venz, 2025; Thörel et al., 2022; Troll et al., 2022). As a result, navigating work and private life becomes increasingly challenging (Allen & French, 2023). Research emphasizes that social job characteristics, such as supervisor support, behavioral standards within teams or perceived boundary control, play a central role in how individuals reconcile work and private life (Kossek et al., 2023a; Kossek, 2024). While early research approaches unified managerial sensitivity and support for employees' family responsibilities and social norms regarding the integration of work and private life under the concept of work-family culture theory (Thompson et al., 1999), these topics have since evolved into two distinct research streams: work-life supportive leadership (formerly family-supportive supervisor behavior) (Hammer et al., 2009; Kossek et al., 2023b) and boundary management (Ashforth et al., 2000). Referring to the original theory and its practical relevance, we reunite both research perspectives in this study within the JD-R theory.

The *JD-R theory* (Bakker et al., 2023) provides an integrative framework for analyzing how these job characteristics affect work performance in flexible work designs, as recent extensions of the

theory explicitly account for interactions and permeability between life domains (Bakker et al., 2023; Demerouti & Bakker, 2023). It differentiates job demands, referring to aspects of work that require sustained physical or psychological effort and may incur costs, and job resources, that facilitate achievement of work goals, buffer the impact of job demands and promote personal growth (Bakker et al., 2023). The motivational process links resources to increased work engagement enhancing performance, whereas the health impairment process explains how excessive demands may result in burnout reducing performance. By categorizing social job characteristics such as work-life support and boundary management as demands or resources, the JD-R theory provides a structured way to understand their influence on work performance.

While *work performance* generally refers to concrete activities that contribute to organizational goals (Campbell & Wiernik, 2015), the specific behaviors underlying its various dimensions continue to evolve in flexible work designs (Allen et al., 2024). Among these dimensions, task and contextual performance are the most established and empirically supported ones (Campbell & Wiernik, 2015; Marshall et al., 2024; Ohly & Venz, 2025). In flexible work designs, task performance reflects employees' ability to manage their time, set priorities, meet deadlines, and stay focused on tasks without interruptions (Allen et al., 2024; Koopmans et al., 2011). Contextual performance involves adapting to change, maintaining up-to-date skills, and showing initiative, for example by assuming additional responsibilities (Allen et al., 2024; Koopmans et al., 2011). Based on this conceptualization by Koopmans et al. (2011), the study examines task and contextual performance as key indicators of work performance.

Taken together, we argue that social job characteristics related to work-life support and boundary management in flexible work designs constitute specific job demands and resources for employees that, as framed by the JD-R theory, affect their work performance.

Work-Life Support and Boundary Management as Job Resources and Demands in the JD-R Theory

In the JD-R literature, social support within the organization, job control, and autonomy are considered as relevant job resources (Bakker et al., 2023). Against the background of the specific challenges that flexible work designs pose for reconciling work and private life, we argue that work-life

supportive leadership and boundary control operate through similar mechanisms and can therefore be understood as job resources.

Work-Life Supportive Leadership as Job Resource

There are good reasons to consider *work-life supportive leadership* as a job resource within the JD-R theory (Guo et al., 2024; Kossek et al., 2018; Kossek et al., 2024). Grounded in social support and resource-based theories (Kossek 2023b), work-life supportive leadership functions as a contextual resource embedded in the objective or psychosocial work environment (Ten Brummelhuis & Bakker 2012; Guo et al., 2024). Work-life supportive leadership can be defined as supervisor behaviors that “(a) prioritize actions to provide active support for employees’ needs and preferences for managing work, family, and personal life roles and (b) are experienced by subordinates as demonstrating such behaviors” (Kossek et al., 2023b, p. 186). The construct originates from research on family-supportive supervisor behavior (Hammer et al., 2009; Hammer et al., 2013) and has been expanded to include other non-work roles according to the societal changes in the last years (Casper et al., 2025; Kossek et al., 2023b). The underlying mechanism through which work-life supportive leadership operates as a job resource lies in supervisors offering various forms of support that help employees manage their private life and work-life interface (Kossek et al., 2018; Kossek et al., 2024). Central dimensions include emotional support, such as expressing understanding and concern for employees’ work-life balance, instrumental support, such as providing flexibility in work schedules, creative work-family management, such as finding innovative ways to accommodate employees’ non-work responsibilities, and role modeling behaviors, where supervisors demonstrate effective boundary management themselves (Hammer et al., 2009; Kossek et al., 2023b). Empirical research aligns with this theoretical mechanism. Several reviews have demonstrated a direct positive effect of work-life supportive leadership on work engagement (Crain & Stevens, 2018; Guo et al., 2024; Hao et al., 2025). Furthermore, work-life supportive leadership has been found to have a direct positive impact on employees’ work performance, encompassing various performance dimensions (Crain & Stevens, 2018; Guo et al., 2024; Hao et al., 2025). Specifically, studies by Odle-Dusseau et al. (2012, 2016) found positive effects on both task and contextual performance. Additionally, Rofcanin et al. (2017) identified an indirect effect of work-life supportive

leadership on work performance, mediated by work engagement. Still, drawing on the theoretical reasoning and the overall pattern in previous studies, we propose the following hypotheses.

Hypothesis 1: Work-life supportive leadership positively predicts future work performance via work engagement, with a positive relationship between work-life supportive leadership and work engagement.

Boundary Control as Job Resource

In addition to work-life supportive leadership, there are theoretical and empirical reasons to classify *boundary control* as a job resource within the JD-R theory. Boundary control, a concept originating from boundary management research, is conceptually grounded in job control theory (Karasek, 1979; Kossek et al., 2023a). It is defined as the extent to which individuals perceive that they can manage work-life boundaries in alignment with their identities and preferences within an organizational context (Kossek et al., 2012). The mechanism explaining why boundary control functions as a job resource relates to this perceived control over boundaries and to the autonomy to regulate these boundaries according to individual needs (Bilotta et al., 2021; Kossek et al., 2023a). For example, boundary control allows employees to schedule their work hours and locations in ways that align with their preferences (Kossek et al., 2012; Kossek et al., 2023a; Piszczek, 2017). Employees with high boundary control can flexibly switch between work and non-work tasks if they prefer an integration of life domains, or they can maintain strict separations between work and personal time if they prefer segmentation (Piszczek, 2017). This, in turn, gives employees the opportunity to efficiently allocate their work and non-work time (Kossek et al., 2012; Piszczek, 2017), manage energy across work and private roles (Kossek et al., 2023a), and support recovery and resource regeneration for the following workday (Piszczek, 2017). Despite the theoretical rationale, empirical research on the relationship between boundary control and distal outcomes, such as work performance, remains scarce (Kossek et al., 2023a). Initial findings suggest that boundary control operates as a job resource. Two studies indicate a direct positive relationship between boundary control (or temporal control) and work engagement (Giauque et al., 2022; Kossek 2023a). Additionally, a direct effect of boundary control on work performance has been demonstrated (Giauque et al., 2022). However, findings remain mixed. One study suggests that increased employee boundary control, when combined with family-supportive supervisor

behavior training for supervisors, enhances employees' family engagement but does not improve their work engagement (Kossek et al., 2024). Another study identifies a negative relationship between boundary control and emotional exhaustion, suggesting that a lack of boundary control may function as a job demand (Piszczyk, 2017). Nevertheless, evidence from a meta-analysis challenges the interpretation of boundary control as a job demand. Huth and Chung-Yan (2023) demonstrated that the overarching construct of boundary control, job control, does not consistently mitigate the negative impact of job demands but is predominantly classified as a job resource. This supports the classification of boundary control as a job resource rather than a job demand. In response to Kossek et al.'s (2023b) call for research, the present study builds upon these theoretical considerations and initial empirical findings to examine the role of boundary control in the context of work performance. Therefore, we propose the following hypotheses.

Hypothesis 2: Boundary control positively predicts future work performance via work engagement, with a positive relationship between boundary control and work engagement.

Integration Norms as Job Demand

With regard to job demands, prior research has often focused on stressors such as workload and time constraints (Bakker & Demerouti, 2017). Based on both theoretical considerations and empirical evidence, we argue that integration norms and the perceived ambiguity about these norms function as job demands that are particularly relevant in the context of flexible work designs.

First, based on the concept of social norms (Cialdini & Trost, 1998) and research on boundary management (Derks et al., 2014), *integration norms* can be defined as common behavioral standards within a social group about appropriate behaviors related to work-life integration in an organization, which guide and shape how individuals adjust their own behavior. Integration norms display how structural conditions for flexible work designs are implemented within a social context (Kossek et al., 2023a). Strong integration norms, particularly within teams, are associated with employees integrating work into their private life (Palm et al., 2020; Reinke & Gerlach, 2021). The mechanism through which integration norms function as a job demand can be described as follows. Integration norms create an internal pressure on employees, for example, to be constantly available or to complete work tasks from home outside of regular working hours. This often leads to an expansion of work hours or a constant

cognitive connection to work, even during non-work hours (Bilotta et al., 2021). Bakker et al. (2023) illustrate how even emails may turn into job demands through this mechanism. If employees perceive that segmentation of work and private life could negatively impact their career, this perception itself can become a demand, potentially leading to involuntary work-life integration and negative outcomes (Kossek et al., 2023a). Research has demonstrated associations between integration norms and various outcomes. Strong integration norms have been linked to impaired well-being, such as increased emotional exhaustion and conflicts between work and non-work domains (Derks et al., 2014; Haun et al., 2022; Reinke & Gerlach, 2022). So far, we have not identified any studies that specifically examine the direct relationship between integration norms and work performance, either directly or indirectly via burnout. Drawing on the theoretical rationale and the observed direct relationships, we propose the following hypotheses.

Hypothesis 3: Integration norms negatively predict future work performance via emotional exhaustion, with a positive relationship between integration norms and emotional exhaustion.

Norm Ambiguity as Job Demand

The concept of *norm ambiguity* is closely related to integration norms. We assume that norm ambiguity constitutes a job demand. Building on the definition of integration norms (Cialdini & Trost, 1998; Derks et al., 2014) and Wagemann et al. (2005), we define norm ambiguity as the extent to which existing integration norms are vague or insufficiently communicated, particularly with regard to behavioral standards and shared expectations within a team concerning work-life integration. Our concept of norm ambiguity closely aligns with the construct and definition of availability ambiguity (Heissler et al., 2024), which was developed in parallel to our research. The mechanism through which norm ambiguity functions as a job demand can be described as follows. The increasing flexibility enabled by digitalization, particularly remote work during the COVID-19 pandemic, has created situations where behavioral standards have yet to be established, or expectations regarding acceptable or desired behavior remain ambiguous (Heissler et al., 2024). In unfamiliar situations, individuals tend to adopt the behavior of others as a reference point (Cialdini & Trost, 1998). A similar pattern can be expected in flexible work settings (Heissler et al., 2024). Consequently, integration norms may emerge without team members aligning on or clearly communicating which behaviors they consider

appropriate. Moreover, employees may be prone to overestimating the expectations of their supervisors and colleagues (Giurge & Bohns, 2021). Uncertainty about behavioral standards concerning work-life boundaries, combined with a lack of clear information regarding expectations, can deplete cognitive resources and therefore function as a job demand (Bilotta et al., 2021; Demerouti & Bakker, 2023). Additionally, this uncertainty may reduce employees' sense of autonomy (Gadeyne et al., 2018). Golden (2021) notes that ambiguous norms may present challenges in applied work contexts. Creating a shared perception or agreement on behavioral standards and expectations could reduce strain and facilitate optimal work performance (Demerouti & Bakker, 2023). Despite its potential relevance, research on norm ambiguity remains scarce. An initial study by Heissler et al. (2024) demonstrated that ambiguity regarding availability expectations constitutes a distinct construct, separate from integration norms. Furthermore, this ambiguity was negatively associated with psychological detachment and positively associated with emotional exhaustion and work-home interference. Drawing on this early evidence and theoretical considerations, we propose the following hypotheses.

Hypothesis 4: Norm ambiguity negatively predicts future work performance via emotional exhaustion, with a positive relationship between norm ambiguity and emotional exhaustion.

Overview

This study investigated the relationship between job characteristics related to work-life support and boundary management and work performance. Drawing on the JD-R theory, we conceptualized the constructs work-life supportive leadership, and boundary control as job resources, and integration norms and norm ambiguity as job demands. We examined the extent to which they influence work performance via work engagement respectively emotional exhaustion. We conducted a longitudinal study in which participants completed surveys on the relevant outcomes over a period of three months. The longitudinal data not only enabled a differentiated interpretation of these associations but also offered insights into their temporal and potentially causal structure (Taris & Kompier, 2014). To test our hypotheses, we applied structural equation modeling, as it allows for the simultaneous estimation of multiple interrelated dependencies between latent and observed variables. This approach is particularly suitable for our study, as it accounts for measurement error and enables the integration of measurement models and structural paths (MacCallum & Austin, 2000).

Method

Procedure

We conducted a longitudinal study with participants from the German-speaking part of Switzerland and Germany, working under flexible work designs (e.g., the option to work remotely using mobile devices, and flexible working hours, such as evening or weekend hours). The overall sample consisted of three sub-samples from studies conducted within a larger project. The first sample (Sample 1) served as a control group within the project and consisted of employees who did not receive any intervention. Sample 2 and Sample 3 included participants who took part in an intervention study on boundary management. Sample 2 comprised teams of at least three employees and their supervisor. In these teams, the supervisor participated in an e-learning program, while the employees did not receive any intervention. Sample 3 consisted of teams of at least three employees and their supervisor, both of whom participated in a team workshop. For a subset of Sample 2 and Sample 3, regarding work performance, both self-ratings from employees and matched external ratings from their supervisors were available. Participants of Sample 2 and Sample 3 were recruited through social media platforms, direct contacts with companies, and informational events. Participants of the Sample 1 were recruited via the company “Bilendi”. Data collection for Sample 1 took place between March 2024 and December 2024, for Sample 2 between August 2022 and December 2023, and for Sample 3 between April 2022 and September 2023. All surveys were conducted online. Employees and supervisors in Sample 2 and Sample 3 took part in a baseline survey (T1) and were followed up online one and two months after the intervention (T2, T3). In the Sample 1, the eight-week period between T1 and T2 corresponded to the average time between the baseline survey (T1) and the first follow-up survey one month post-intervention (T2). An overview of the study design is presented in Figure 1.

Participants

A total of 1019 employees (Sample 1: $N = 517 / 51\%$, Sample 2: $N = 149 / 15\%$, Sample 3: $N = 353 / 35\%$) participated in the baseline assessment of the study T1. At the first follow-up T2, data were available for 840 participants (Sample 1: $N = 369 / 71\%$, Sample 2: $N = 142 / 95\%$, Sample 3: $N = 329 / 93\%$). At the second follow-up T3, data were available for 783 participants (Sample 1: $N = 345 / 67\%$, Sample 2: $N = 125 / 84\%$, Sample 3: $N = 313 / 89\%$). Supervisor ratings were available for 486

participants at the baseline assessment T1, for 428 (88%) participants at T2 and for 386 (79%) participants at T3. The participants' ages were grouped as follows: up to 19 years ($N = 14 / 1\%$), 20–29 years ($N = 189 / 19\%$), 30–39 years ($N = 279 / 27\%$), 40–49 years ($N = 256 / 25\%$), 50–59 years ($N = 211 / 21\%$), and 60 years or older ($N = 69 / 7\%$). A total of 556 (55%) participants were female. With regard to the level of education, 49 (5%) participants had completed only the compulsory years of schooling (~ 9 years), 519 (51%) had completed secondary education (~ 12 years), 188 (18%) had a bachelor's degree, and 262 (26%) had a master's or doctoral degree. The participants represented various sectors. The most frequently mentioned sectors were other ($N = 236 / 34\%$), logistics and transport ($N = 135 / 19\%$), financial and insurance services ($N = 134 / 19\%$), IT services ($N = 99 / 14\%$), and health and social work ($N = 91 / 13\%$). In average participants were employed at $M = 83.15\%$ of a full-time position ($SD = 22.49\%$, range: 10 – 100%) and had an average of $M = 2.62$ days per week with the opportunity to work flexibly ($SD = 1.44$, range: 1 - 7).

A total of 581 (57%) participants completed three time points (T1, T2, T3), while 223 (22%) participants took part in the baseline (T1) and at least one follow-up measurement (T2 or T3). Another 215 (21%) participants took part in the baseline (T1) but not in any follow-up measurement (T2, T3). T-tests and χ^2 -tests were conducted to compare completers, participants who took part in at least at one follow-up measurement, with dropouts, those who participated only at baseline, regarding sociodemographic variables. T-tests showed no significant group differences in employment status ($t(df) = 0.025, p = .980, M_{\text{completers}} = 82.89, SD_{\text{completers}} = 22.66, M_{\text{dropouts}} = 82.84, SD_{\text{dropouts}} = 23.32$, Cohen's $d = 0.002$) and in days per week with the opportunity to work flexibly ($t(df) = 0.704, p = .482, M_{\text{completers}} = 2.56, SD_{\text{completers}} = 1.47, M_{\text{dropouts}} = 2.49, SD_{\text{dropouts}} = 1.29$, Cohen's $d = 0.055$). The results of χ^2 tests indicated no significant differences in the distribution of gender ($\chi^2(2) = 0.834, p = .659$, Cramér's $V = 0.032$), no significant differences in age ($\chi^2(5) = 6.067, p = .300$, Cramér's $V = 0.087$), and no significant differences in level of education ($\chi^2(5) = 6.680, p = .246$, Cramér's $V = 0.091$). Therefore, both groups were considered comparable at baseline.

Measures

All items were presented in German, and we applied Brislin's (1970) back-translation method. Unless otherwise noted, participants rated their agreement with the items using a 5-point response scale

ranging from 1 (*do not agree at all / completely disagree*) to 5 (*completely agree*). The values of McDonald's Omega (ω) are presented in Table 1.

Work-life supportive leadership was assessed using the 14-item family-supportive supervisor scale developed by Hammer et al. (2009). It covers emotional (4 items) and instrumental (3 items) support as well as role modeling (3 items) and creative work-family management (4 items). Sample items are “My supervisor makes me feel comfortable talking to him or her about my conflicts between work and nonwork.”, “I can depend on my supervisor to help me with scheduling conflicts if I need it.”, “My supervisor is a good role model for work and nonwork balance.” and “My supervisor asks for suggestions to make it easier for employees to balance work and nonwork demands.”.

Boundary control was assessed using the three-item scale from Kossek et al. (2012). A sample item is “I control whether I am able to keep my work and personal life separate”.

Integration norms, operationalized as descriptive integration norms were assessed using a six-item scale. The items were adapted from Derks et al. (2015). Integration norms among the employees were assessed with three items. A sample item is “In our team, most people respond to work-related messages even during their leisure time.”. Integration norms with regard to the supervisor were assessed with three items. A sample item is “My supervisor regularly completes work tasks outside of their working hours.”.

Norm ambiguity was assessed using a three-item scale. The items were derived from Wageman et al.'s (2005) concept of norm clarity in teams and were adapted for boundary management. A sample item is “In this team, there are explicit standards for managing the boundaries between work and personal life.”. For analysis, the items were reverse coded so that higher scores indicate greater norm ambiguity.

Work Engagement was assessed with the UWES-3 questionnaire (Schaufeli et al., 2019), an ultra-short measure for work engagement consisting of three items. A sample items is “At my work, I feel bursting with energy.”.

Burnout was assessed via *emotional exhaustion* with four items of the Oldenburg Burnout Inventory (Demerouti et al., 2010). A sample item is “After my work, I usually feel worn out and weary.”.

Employees' work performance was assessed with the Individual Work Performance Questionnaire - IWPQ (Koopmans et al., 2012 in the version of Dåderman et al., 2020). Task performance was assessed with five items. A sample item is "I was able to carry out my work efficiently.". Contextual performance was assessed with eight items. A sample item is "I worked on keeping my work skills up-to-date.". Employees were asked to rate their performance on a five-point response scale ranging from 1 (seldom) to 5 (always), indicating how frequently the items reflected their work behavior over the past four weeks. Since each supervisor had to assess multiple employees within their team, they rated their employees' work performance using a shortened version of the IWPQ. The three items with the highest factor loadings from the IWPQ were selected and adapted as external ratings. Alongside the two aforementioned items, the item "[Employees' name] continually sought new challenges in my work." was included. The supervisors provided their responses using the same scale as the employees.

Statistical Analysis

Data and the analysis code can be found at the OSF ([Link](#)). The statistical analyses included descriptive statistics, structural equation modeling to test the hypothesized indirect effects of predictors on work performance. In the analyses, measures were examined as latent variables. To produce more reliable latent variables, we used three item parcels as indicators for the two dimensions of self-rated work performance according to Little (2013). To handle missing data, we applied full information maximum likelihood (FIML) estimation, which uses all available data to estimate model parameters and has been shown to yield less biased and more reliable results than traditional methods such as listwise or pairwise deletion (Newman, 2014).

Confirmatory factor analyses (CFA) and tests of measurement invariance were conducted for the latent constructs, which were analyzed across the three waves, to ensure that the measures were equivalent over time (Schmitt & Kuljanin, 2008). For each outcome, a series of increasingly restrictive models was estimated, testing configural and metric invariance. Model fit was evaluated using the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), the Root Mean Square Error of Approximation (RMSEA), and the Standardized Root Mean Square Residual (SRMR) following the guidelines provided by Hu and Bentler (1999) and MacCallum and Austin (2000). A good fit is indicated

by CFI and TLI values of .95 or higher, a RMSEA value of .06 or lower and a SRMR value of .08 or lower (Hu & Bentler, 1999). In addition, the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC) were reported as indicators of model comparison, with lower values reflecting a better relative fit between competing models (Mackinnon et al., 2020). The level of measurement invariance was evaluated by comparing the configural and metric models using chi-square difference tests. Each comparison tested whether the more constrained model differed significantly from the less constrained one. The p-value indicated whether the additional restrictions led to a significant decrease in model fit.

To examine the hypothesized indirect effects specified in Hypotheses 1 - 4, we conducted structural equation modeling (SEM) using the lavaan package in R (Rosseel, 2012). Four models were specified and analyzed (see Tables 4 - 7). First, we specified two separate models, one for self-rated and one for supervisor-rated work performance, which did not control for baseline levels, thereby estimating effects on the absolute levels of the outcomes at T3 (see Table 4 and Table 5). Second, we specified two separate models, one for self-rated and one for supervisor-rated work performance, that controlled for baseline levels of both the mediator and the outcome variables at T1, thereby allowing us to examine changes over time (see Table 6 and Table 7). The models for self-rated work performance included the full sample. To control for potential influence of participants' sample membership, we added two dummy-coded variables as covariates in those models including the full sample (see Table 4 and Table 6). We also reestimated these both models using only data from Sample 1, which did not receive any intervention (see Appendix A - C). This allowed us to examine whether the observed effects were attributable to the intervention implemented in Samples 2 and 3. As supervisor-ratings were only available in Sample 2 and Sample 3, these models were estimated exclusively using data from these subsamples and additional analyses were limited to self-rated performance.

Across all models, latent variables were specified for each measurement occasion. To account for shared indicator-specific variance over time, all models included residual covariances between indicators of latent constructs assessed at multiple time points, namely work engagement, emotional exhaustion, and self-rated work performance. Direct effects were estimated from predictors at T1 to mediators at T2, and from both predictors at T1 and mediators at T2 to outcomes at T3. Specific indirect

effects were estimated according to Hypotheses 1 - 4. Total effects were calculated as the sum of the direct effect and the corresponding specific indirect effect. Following the recommendation by Preacher et al. (2010), the statistical significance of the indirect effects was evaluated using bias-corrected bootstrap confidence intervals (95% CI) based on 5,000 bootstrap samples.

Results

Means, standard deviations, correlations, and McDonald's Omega of the measures are presented in Table 1. The results of the CFAs and measurement invariance analyses are shown in Table 2. Across all variables, the metric models did not differ significantly from the configural models (CFI = .982 - .999, TLI = .969 - .998, RMSEA = .016 - .055, SRMR = .012 - .047), indicating metric invariance for all constructs.

Fit indices for the structural equation models testing Hypotheses 1- 4 indicated acceptable to good model fit, with CFI and TLI consistently above .94, RMSEA ranging from .025 to .041, and SRMR between .041 and .067 (see Table 3). Standardized estimates for direct, indirect, and total effects of the Models 1 - 4 are summarized in Tables 4 - 7.

In a first step, we examined the associations between the absolute levels of job characteristics, work engagement, and emotional exhaustion, and work performance over time, *without controlling for baseline levels of these variables*. Specifically, we considered self-rated task and contextual performance (Table 4) as well as supervisor-rated performance (Table 5) as outcome variables. Hypothesis 1 predicted that work-life supportive leadership, as a job resource, would foster work engagement and, in turn, enhance future work performance. The results showed that employees who experienced more work-life support from their supervisors at T1 were more likely to feel engaged at T2 and consequently reported higher self-rated contextual and task performance at T3 (contextual performance: $\beta = .050$, 95% CI [.019, .076]; task performance: $\beta = .108$, 95% CI [.054, .142]; Table 4). In line with these indirect effects, employees who perceived more work-life support at T1 also reported feeling more engaged at T2 ($\beta = .246$, 95% CI [.123, .293], Table 4; $\beta = .259$, 95% CI [.144, .382], Table 5). No significant indirect effects were found for supervisor-rated work performance (Table 5). Thus, Hypothesis 1 was partially supported.

Hypothesis 2 predicted that boundary control, as a job resource, would foster work engagement and, in turn, enhance future work performance. The results showed that employees who felt more in control of the boundaries between their work and private life at T1 did not report higher work engagement at T2, nor did they report better work performance (self-rated or supervisor-rated) at T3 as a result of increased engagement. No indirect effects were found for either self-rated (Table 4) or supervisor-rated work performance (Table 5). Therefore, Hypothesis 2 was not supported. However, further analyses revealed that employees who experienced greater boundary control at T1 were more likely to report higher contextual performance at T3 ($\beta = .257$, 95% CI [.152, .325], Table 4). This direct effect was also reflected in the total effects ($\beta = .249$, 95% CI [.144, .317], Table 4), suggesting that a strong sense of boundary control had a direct positive effect on the absolute level of employees' contextual performance, rather than operating indirectly through work engagement.

Hypothesis 3 predicted that integration norms, as a job demand, would increase emotional exhaustion and, in turn, negatively affect future work performance. The results showed that employees who perceived stronger norms favoring the integration of work and private life at T1 did not experience higher emotional exhaustion at T2, nor did they report lower work performance (self-rated or supervisor-rated) at T3 as a result of increased exhaustion. No indirect effects were found for either self-rated (Table 4) or supervisor-rated work performance (Table 5). Therefore, Hypothesis 3 was not supported. However, further analyses showed that employees who perceived stronger integration norms at T1 reported higher levels of emotional exhaustion at T2 ($\beta = .131$, 95% CI [.018, .199], Table 5), indicating that strong expectations to blend work and nonwork roles may be associated with psychological strain.

Hypothesis 4 predicted that norm ambiguity, as a job demand, would increase emotional exhaustion and, in turn, negatively affect future work performance. The results showed that employees who felt uncertain about the expected behavior in their team at T1 did not report higher emotional exhaustion at T2, nor did emotional exhaustion mediate any effects on their subsequent self-rated or supervisor-rated work performance (Table 4 and Table 5). No direct effects were observed either. This suggests that uncertainty about expected behavior was not associated with later emotional exhaustion or work performance. Therefore, Hypothesis 4 was not supported.

In summary, the results indicate that work-life supportive leadership was associated with higher overall levels of work engagement and self-rated work performance, partially supporting Hypothesis 1. The other variables, namely boundary control, integration norms, and norm ambiguity, did not predict work performance indirectly via work engagement or emotional exhaustion. Notably, boundary control had a direct positive effect on contextual performance, and higher integration norms were associated with increased emotional exhaustion, suggesting that some job characteristics exerted direct or strain-related effects, even in the absence of indirect pathways.

In a second step, we examined whether job characteristics predicted changes over time in work performance, mediated by work engagement and emotional exhaustion, *while controlling for the baseline levels of all variables* (Table 6 and Table 7). Regarding Hypothesis 1, the indirect effect of work-life supportive leadership on self-rated work performance via work engagement was not confirmed. Employees who received more support from their supervisors at T1 did not report significant changes in work engagement, nor did they exhibit subsequent changes in task performance, contextual performance, or supervisor-rated performance mediated by work engagement over time. In fact, further analyses revealed that employees who perceived greater supervisor support at T1 later reported a decrease in contextual performance at T3 (direct effect: $\beta = -.115$, 95% CI $[-.181, -.024]$; total effect: $\beta = -.115$, 95% CI $[-.181, -.023]$, Table 6). Across Hypotheses 2 to 4, the results showed that none of the examined job characteristics - namely boundary control, integration norms, or norm ambiguity - predicted changes in work performance over time via work engagement or emotional exhaustion.

In a third step, we repeated the analyses with self-rated work performance (task and contextual performance), using *only data from Sample 1*, which did not receive any intervention. All significant results were replicated (Appendix A - C).

Taken together, these findings suggest that the motivational and health-impairment pathways outlined in the JD-R theory were only partially supported in the present data.

Discussion

This study investigated how job characteristics related to work-life support and boundary management are associated with work performance. Drawing on the JD-R theory, we conceptualized work-life supportive leadership and boundary control as job resources, and integration norms and norm

ambiguity as job demands. To examine their role, we tested the motivational pathway in relation to the resources, and the health-impairment pathway in relation to the demands. Overall, there was only limited support for the expected mechanisms. Notably, only the indirect pathway from work-life supportive leadership to self-rated task and contextual performance via work engagement was supported. Other results merely aligned with the hypothesized directions, while some were contrary to the hypotheses. These findings and their implications are discussed in the following sections.

Theoretical Implications

One finding confirmed the initial hypothesis and supports the expected mechanism. Employees who experienced higher levels of work-life supportive leadership reported greater work engagement at a later point in time, which in turn was associated with higher self-reported task and contextual performance. This finding aligns with previous research demonstrating a positive indirect effect of work-life supportive leadership on work performance through work engagement (Rofcanin et al., 2017). The result supports the role of work-life supportive leadership as a job resource that fosters the motivational process, as outlined in the JD-R theory. However, it remains unclear whether work-life supportive leadership actually contributes to performance gains, as the indirect effect was only observed in the model that did not control for prior levels of work engagement and work performance. This pattern may reflect stable individual differences: employees who are generally more engaged may also perceive their leaders as more supportive or may receive more support due to dispositional characteristics, ultimately reporting higher work performance. Future research should therefore continue to control for baseline values and examine reciprocal effects over time. Moreover, given the increasing interdependence within teams (Kaplan et al., 2016), for example in agile work environments (Junker et al., 2022), it would be worthwhile to explore how work-life support provided by team members affects work performance through the same motivational mechanism (Kossek et al., 2021).

A second result was not part of the initial hypotheses but still points in the expected direction. Participants who perceived higher levels of control over their boundaries between work and private life reported higher contextual performance, although the mechanism via work engagement was not confirmed. On the one hand, the absence of an indirect effect via work engagement contrasts with previous research showing positive associations between boundary control and work engagement

(Giauque et al., 2022; Kossek et al., 2023a). Recent findings by Kossek et al. (2024) offer a possible explanation, as increases in boundary control were associated not with work engagement, but with greater engagement in family life. This suggests that high boundary control may enable individuals to intentionally disengage from work and reinvest their energy in other life domains. On the other hand, the direct link between higher boundary control and higher levels of performance is consistent with previous research (Giauque et al., 2022) and aligns with the hypothesized role of boundary control as a job resource. Assuming that strong boundary control facilitates segmentation according to one's own needs (Mellner et al., 2015; Palm et al., 2020), it may allow employees to focus their energy on work areas where active involvement and problem-solving are needed. This interpretation is supported by research showing that the ability to efficiently manage one's own time and minimize interference between domains are is a key predictor of work performance (Allen et al., 2024; Härtel et al., 2023). Future studies should therefore consider assessing engagement and performance not only in the work domain but also in private life (e.g., family performance, leisure activities) to explore potential cross-domain effects of boundary control.

In contrast, two findings were not in line with the original assumptions and open up new perspectives. First, regarding work-life supportive leadership, employees who perceived high levels of supervisor support reported a decrease in their future contextual performance. This effect stands in contrast to prior research, which has consistently demonstrated positive associations between work-life supportive leadership and contextual performance (e.g., Guo et al., 2024; Hao et al., 2025; Odle-Dusseau et al., 2012, 2016). One possible explanation is that supervisor support becomes particularly salient during times of increased personal strain, periods when employees may lack the capacity to fully engage in discretionary, extra-role behaviors such as contextual performance. For instance, an employee caring for a seriously ill family member might receive strong support from their supervisor, which in turn enables the employee to focus on core tasks while stepping back from additional contributions at work. In this context, supervisor support may serve a protective function, allowing employees to maintain essential performance while scaling back on non-essential efforts. Future research is needed to determine whether this negative association can be replicated and to further explore the conditions under

which work-life supportive leadership may relate differently to various dimensions of work performance.

Second, our findings indicated that high integration norms are associated with increased exhaustion over time, a pattern which is consistent with previous literature (Derks et al., 2014; Haun et al., 2022; Reinke & Gerlach, 2022). However, neither integration norms nor norm ambiguity significantly affected work performance. This suggests that while integration norms may pose a health risk, employees might sustain their performance despite unfavorable boundary management conditions by mobilizing resources or employing coping strategies (Bakker et al., 2010). Work performance may therefore be less immediately responsive to these demands. Additionally, alternative mechanisms may explain the link between these job demands and work performance. Ohly and Venz (2025), for instance, argue that new ways of working may increase job complexity, requiring employees to navigate demands such as integration norms. While such complexity may initially enhance motivation and engagement, it may also impair work performance due to the cognitive effort involved in boundary regulation. Future research should explore potential further resources, coping strategies, and alternative mechanisms, as well as examine whether the mediating effect of exhaustion on work performance emerges at a later stage. Last, individual preferences may moderate the relationship between job demands and work performance. Prior research has demonstrated that employees with a strong preference for separating work and private life experience greater work–family conflict under extended availability (Gadeyne et al., 2018; Thörel et al., 2022), yet benefit more from restrictions on work-related communication outside working hours (Mueller et al., 2023). Consequently, segmentation-oriented employees may be more prone to declines in work performance than those with an integration preference. Future research should therefore consider the moderating role of such individual differences.

Limitations

This study has some limitations. First, while the longitudinal design represents a strength of the study, the examined job characteristics, such as work engagement, emotional exhaustion, and performance ratings, showed high temporal stability across measurement waves. This may have limited the variance available to be explained by the hypothesized predictors. It is possible that the chosen time intervals were not optimal to capture the assumed effects. As previously discussed, certain outcomes,

such as emotional exhaustion and performance impairment, may develop gradually and only become apparent over longer periods (Bakker et al., 2014). Our findings regarding integration norms point in this direction. At the same time, changes in work engagement may occur over shorter time frames (Bakker et al., 2014; Sonnentag et al., 2021). Future research may therefore benefit from examining both longer time periods, such as follow-up assessments conducted over several months, and shorter periods (Sonnentag et al., 2021), using methods such as diary studies or weekly reports (Sonnentag et al., 2021).

Second, a notable limitation concerns the assessment of supervisor-rated performance. Unlike previous studies reporting, for example, associations between employees' perceptions of supervisor support and supervisor-rated work performance (Ode-Dusseau et al., 2016; Rofcanin et al., 2017), none of the examined job characteristics predicted supervisor-rated work performance. This may be due to the limited measurement, as supervisor-rated performance was assessed with only three items, and each supervisor provided ratings for multiple employees. This may have resulted in less differentiated evaluations and reduced sensitivity to individual differences in performance (Goetz et al., 2013; Kilmen & Bulut, 2025). In addition, supervisor ratings were not collected for the non-intervention Sample 1 due to recruitment constraints, limiting the examination of potential group effects.

Practical Implications and Conclusion

Given that many organizations implement flexible work designs to enhance both employees' work performance and life domain balance, our findings provide initial support that these goals can be achieved when job characteristics related to work-life support and boundary management are shaped in a beneficial way.

First, employees who perceive their supervisors as work-life supportive tend to perform their tasks more effectively and engage more in extra-role behaviors, even if this reflects their general performance level rather than an actual improvement. Although the decrease in contextual performance under conditions of high work-life support requires further investigation, the findings suggest that work-life supportive leadership represents a resource for employees' work performance. This highlights the importance of equipping supervisors with the skills and awareness needed to recognize and respond to employees' work-life needs in a meaningful and timely manner. Second, although the underlying

mechanism remains unclear, the findings point to boundary control as a valuable job resource in flexible work contexts. Organizations should therefore foster a work environment in which employees feel empowered to manage the boundaries between work and private life according to their needs. The autonomy regarding when and where work is done, as typically embedded in flexible work designs, may contribute to higher contextual performance. However, structural flexibility may need to be complemented by a team culture that is attentive to boundary management in day-to-day practice (Kossek, 2016). Third, alignment with integration norms comes with a potential trade-off, as high integration may increase strain and exhaustion. Teams and organizations should therefore reflect on the implicit expectations and behavioral standards regarding the integration of work and private life. Short-term use of integration may be appropriate in critical phases (Braukmann et al., 2018), but employee well-being should be monitored to prevent long-term strain.

In summary, our findings offer initial insights into how job characteristics related to work-life support and boundary management may relate to work performance. While some patterns align with the theoretical pathways proposed in the JD-R-theory, our findings are not sufficiently conclusive to draw firm theoretical conclusions. Nevertheless, organizations adopting flexible work designs may benefit from considering work-life support and boundary management relevant to both employee well-being and work performance. Future research is needed to explore these relationships and their mechanisms to better understand how work-life support and boundary management impact work performance.

Acknowledgements

The authors thank Julia Widler for her support in the project.

Disclosure statement

We have no known conflict of interest to disclose.

Funding

This research was supported by the Swiss National Science Foundation Grant (407740_187515) to Michaela Knecht and Laurenz L. Meier.

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Tables

Table 1

Means, Standard Deviations, Correlations, and Reliabilities (McDonald's Omega) of the Variables

	Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.	WLSL T1	3.69	0.81	(.96)													
2.	BC T1	4.07	0.76	.34	(.81)												
3.	IN T1	2.98	0.87	.01	-.11	(.92)											
4.	NAMB T1	2.80	0.91	-.32	-.18	.13	(.84)										
5.	WE T1	3.10	0.88	.35	.13	.06	-.21	(.85)									
6.	WE T2	3.11	0.86	.28	.09	.07	-.14	.71	(.86)								
7.	EX T1	2.97	0.95	-.30	-.23	.15	.09	-.34	-.33	(.88)							
8.	EX T2	2.92	0.95	-.27	-.23	.10	.07	-.32	-.37	.65	(.88)						
9.	WP_self_task T1	3.18	0.81	.24	.15	.11	-.15	.49	.39	-.15	-.15	(.89)					
10.	WP_self_task T3	3.18	0.80	.11	.06	.11	-.10	.36	.40	-.12	-.15	.54	(.88)				
11.	WP_self_context T1	3.66	0.73	.28	.34	.00	-.18	.32	.18	-.26	-.22	.43	.26	(.86)			
12.	WP_self_context T3	3.66	0.71	.14	.26	.01	-.12	.29	.27	-.22	-.26	.29	.47	.58	(.87)		
13.	WP_sup T1	3.41	0.77	.06	.06	.06	.07	.07	.09	-.13	-.11	.06	.06	.11	.04	(.71)	
14.	WP_sup T3	3.35	0.84	.06	.05	.07	.00	.06	-.01	-.09	-.05	.13	.15	.10	.04	.64	(.78)

Note. Omega reliabilities are reported on the diagonal. Statistically significant correlations (two-tailed tests, $p < .05$) are shown in bold. Abbreviations: BC = boundary control; EX = emotional exhaustion; IN = integration norms of the supervisor and the team; NAMB = norm ambiguity; T1–T3 = time points 1 to 3; WE = work engagement; WLSL = work-life supportive leadership; WP_self_context = work performance self-rating - contextual performance; WP_self_task = work performance self-rating - task performance; WP_sup = work performance supervisor-rating.

Table 2*Fit of Models and Measurement Invariance (Comparison Over Time)*

Model	χ^2	df	CFI	TLI	RMSEA	[90% CI]	SRMR	AIC	BIC
Work engagement									
1. Configural invariance	17.17	15	1.000	.999	.012	[.000, .033]	.012	15300.36	15492.46
2. Metric invariance	26.42	21	.999	.998	.016	[.000, .033]	.026	15297.61	15460.15
Emotional exhaustion									
1. Configural invariance	101.01	39	.989	.982	.040	[.030, .049]	.023	23740.13	23991.33
2. Metric invariance	105.41	47	.990	.986	.035	[.026, .044]	.025	23728.53	23940.33
Work performance: employees' self rating									
1. Configural invariance	247.50	102	.985	.977	.037	[.032, .043]	.038	26573.78	27002.30
2. Metric invariance	252.79	114	.985	.980	.035	[.029, .040]	.041	26555.07	26924.49
Work performance: supervisor rating									
1. Configural invariance	46.37	15	.982	.957	.065	[.044, .087]	.035	9304.80	9468.70
2. Metric invariance	52.51	21	.982	.969	.055	[.037, .074]	.047	9298.93	9437.62

Note. Abbreviations: AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; CFI = Comparative Fit Index; CI = Confidence Interval; df = degrees of freedom; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual; TLI = Tucker-Lewis Index; χ^2 = chi-square.

Table 3*Overview and Model Fit Indices for Structural Equation Models for Model 1 - 4*

Model	χ^2 (df)	CFI	TLI	RMSEA	[90% CI]	SRMR
Model 1: Employee self-rating, controlled for sample	849.39 (311)	.954	.945	.041	[.038, .045]	.051
Model 2: Supervisor-rating, without control variables	327.87 (213)	.974	.969	.033	[.026, .040]	.056
Model 3: Employee self-rating, controlled for baseline and sample	1622.39 (693)	.955	.947	.036	[.034, .039]	.067
Model 4: Supervisor-rating, controlled for baseline	585.29 (448)	.981	.978	.025	[.019, .030]	.041

Note. Abbreviations: CFI = Comparative Fit Index; CI = Confidence Interval; df = degrees of freedom; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual; TLI = Tucker-Lewis Index; χ^2 = chi-square.

Table 4

*Model 1: Employees' Self-Rating of Work Performance - Effects from Structural Equation Modeling
Controlled for Sample*

Effect Type	Outcome	Predictor	β	SE	z	B	95% CI (boot)
Direct Effects							
WLSL T1		MEgroup2	.130*	.077	3.779	.290	[.139, .439]
		MEgroup3	.237*	.057	6.869	.393	[.282, .508]
BC T1		MEgroup2	.158*	.071	4.812	.342	[.201, .477]
		MEgroup3	.082*	.057	2.298	.131	[.017, .242]
IN T1		MEgroup2	-.208*	.073	-5.716	-.419	[-.563, -.279]
		MEgroup3	-.094*	.049	-2.842	-.140	[-.239, -.046]
NAMB T1		MEgroup2	.008	.081	0.203	.017	[-.141, .180]
		MEgroup3	.048	.055	1.390	.076	[-.028, .185]
WE T2		WLSL T1	.246*	.043	4.760	.203	[.123, .293]
		BC T1	-.042	.039	-0.908	-.035	[-.113, .040]
		MEgroup2	.023	.072	0.597	.043	[-.096, .183]
		MEgroup3	.068	.057	1.622	.092	[-.021, .200]
EX T2		IN T1	.058	.035	1.518	.053	[-.015, .122]
		NAMB T1	.081	.040	1.743	.070	[-.007, .151]
		MEgroup2	-.223*	.077	-5.301	-.410	[-.564, -.259]
		MEgroup3	-.251*	.056	-6.168	-.343	[-.454, -.237]
WP_self_context T3		WE T2	.204*	.054	4.053	.219	[.114, .330]
		EX T2	-.222*	.057	-4.161	-.238	[-.356, -.129]
		MEgroup2	-.187*	.099	-3.755	-.370	[-.569, -.178]
		MEgroup3	-.103*	.067	-2.281	-.152	[-.284, -.027]
WP_self_task T3		WLSL T1	-.016	.047	-0.307	-.014	[-.104, .081]
		BC T1	.257*	.044	5.327	.236	[.152, .325]
		IN T1	.029	.039	0.726	.028	[-.048, .104]
		NAMB T1	-.056	.044	-1.174	-.052	[-.141, .034]
		WE T2	.439*	.056	8.224	.464	[.355, .576]
		EX T2	-.017	.057	-0.319	-.018	[-.132, .091]
		MEgroup2	-.068	.092	-1.435	-.133	[-.320, .048]
		MEgroup3	-.004	.066	-0.086	-.006	[-.131, .128]
		WLSL T1	-.063	.046	-1.194	-.055	[-.145, .037]
		BC T1	.052	.042	1.120	.047	[-.033, .131]
		IN T1	.072	.039	1.776	.069	[-.008, .144]
		NAMB T1	-.082	.046	-1.644	-.075	[-.164, .016]
Indirect Effects							
WP_self_context T3		WLSL T1 → WE T2	.050*	.015	3.054	.044	[.019, .076]
		BC T1 → WE T2	-.008	.009	-0.861	-.008	[-.027, .009]
		IN T1 → EX T2	-.013	.009	-1.424	-.013	[-.032, .004]
		NAMB T1 → EX T2	-.018	.010	-1.609	-.017	[-.038, .002]
WP_self_task T3		WLSL T1 → WE T2	.108*	.023	4.132	.094	[.054, .142]
		BC T1 → WE T2	-.018	.018	-0.901	-.016	[-.054, .018]
		IN T1 → EX T2	-.001	.004	-0.265	-.001	[-.009, .006]
		NAMB T1 → EX T2	-.001	.005	-0.281	-.001	[-.011, .008]

Table 4*Continued*

Effect Type	Outcome	Predictor	β	SE	z	B	95% CI (boot)
Total Effects							
	WP_self_context T3	WSLS T1 (total)	.034	.046	0.649	.030	[-.060, .123]
		BC T1 (total)	.249*	.044	5.161	.228	[.144, .317]
		IN T1 (total)	.016	.040	0.390	.015	[-.063, .093]
		NAMB T1 (total)	-.074	.045	-1.515	-.069	[-.159, .019]
	WP_self_task T3	WSLS T1 (total)	.045	.048	0.819	.039	[-.052, .135]
		BC T1 (total)	.034	.043	0.707	.031	[-.053, .116]
		IN T1 (total)	.071	.039	1.751	.068	[-.009, .144]
		NAMB T1 (total)	-.083	.046	-1.652	-.076	[-.167, .016]

Note. Abbreviations: β = standardized coefficients; B = unstandardized coefficients; BC = boundary control; EX = emotional exhaustion; IN = integration norms of the supervisor and the team; NAMB = norm ambiguity; SE = standard error; T1–T3 = time points 1 to 3; WE = work engagement; WLSL = work-life supportive leadership; WP_self_context = work performance self-rating - contextual performance; WP_self_task = work performance self-rating - task performance; WP_sup = work performance supervisor-rating; z = z-value; 95% CI (boot) = lower and upper bound of bias-corrected 95% confidence interval with 5,000 bootstrap samples. * $p < .05$, two-tailed tests.

Table 5*Model 2: Supervisor-Ratings of Employees' Work Performance - Effects from Structural Equation**Modeling without any Control Variables*

Effect Type	Outcome	Predictor	β	SE	z	B	95% CI (boot)
Direct Effects							
	WE T2	WLSL T1	.259*	.062	4.266	.263	[.144, .382]
		BC T1	.010	.058	0.164	.009	[-.102, .123]
	EX T2	IN T1	.131*	.046	2.231	.102	[.018, .199]
		NAMB T1	.065	.052	1.035	.054	[-.049, .157]
	WP_sup T3	WE T2	-.038	.075	-0.441	-.033	[-.191, .105]
		EX T2	-.075	.077	-0.850	-.065	[-.213, .085]
		WLSL T1	.108	.069	1.363	.094	[-.040, .234]
		BC T1	.040	.055	0.582	.032	[-.077, .139]
		IN T1	.099	.041	1.655	.067	[-.010, .151]
		NAMB T1	.032	.051	0.442	.023	[-.080, .123]
Indirect Effects							
	WP_sup T3	WLSL T1 → WE T2	-.010	.021	-0.422	-.009	[-.056, .027]
		BC T1 → WE T2	-.000	.005	-0.062	-.000	[-.010, .012]
		IN T1 → EX T2	-.010	.009	-0.742	-.007	[-.027, .010]
		NAMB T1 → EX T2	-.005	.007	-0.516	-.004	[-.021, .006]
Total Effects							
	WP_sup T3	WSLS T1 (total)	.098	.065	1.312	.086	[-.045, .212]
		BC T1 (total)	.040	.055	0.578	.032	[-.075, .138]
		IN T1 (total)	.090	.040	1.532	.061	[-.015, .142]
		NAMB T1 (total)	.027	.051	0.377	.019	[-.083, .119]

Note. Abbreviations: β = standardized coefficients; B = unstandardized coefficients; BC = boundary control; EX = emotional exhaustion; IN = integration norms of the supervisor and the team; NAMB = norm ambiguity; SE = standard error; T1–T3 = time points 1 to 3; WE = work engagement; WLSL = work-life supportive leadership; WP_{self}_context = work performance self-rating - contextual performance; WP_{self}_task = work performance self-rating - task performance; WP_{sup} = work performance supervisor-rating; z = z-value; 95% CI (boot) = lower and upper bound of bias-corrected 95% confidence interval with 5,000 bootstrap samples. * $p < .05$, two-tailed tests.

Table 6

*Model 3: Employees' Self-Rating of Work Performance - Effects from Structural Equation Modeling
Controlled for Baseline and Sample*

Effect Type	Outcome	Predictor	β	SE	z	B	95% CI (boot)
Direct Effects							
WLSL T1		MEgroup2	.132*	.077	3.787	.290	[.139, .440]
		MEgroup3	.241*	.057	6.874	.394	[.282, .509]
BC T1		MEgroup2	.158*	.071	4.803	.340	[.200, .475]
		MEgroup3	.081*	.057	2.293	.130	[.017, .241]
IN T1		MEgroup2	-.211*	.075	-5.759	-.429	[-.577, -.286]
		MEgroup3	-.096*	.050	-2.905	-.146	[-.245, -.050]
NAMB T1		MEgroup2	.008	.081	0.206	.017	[-.141, .180]
		MEgroup3	.048	.055	1.392	.076	[-.028, .185]
WE T1		MEgroup2	.053	.054	1.652	.090	[-.018, .197]
		MEgroup3	.161*	.045	4.565	.204	[.113, .288]
EX T1		MEgroup2	-.160*	.062	-4.784	-.298	[-.422, -.176]
		MEgroup3	-.189*	.049	-5.334	-.261	[-.358, -.164]
WP_self_context T1		MEgroup2	-.045	.065	-1.377	-.089	[-.215, .042]
		MEgroup3	-.036	.056	-0.963	-.054	[-.164, .058]
WP_self_task T1		MEgroup2	-.063	.067	-1.865	-.124	[-.255, .010]
		MEgroup3	.033	.054	0.884	.048	[-.059, .155]
WLSL T1		MEgroup2	.132*	.077	3.787	.290	[.139, .440]
WE T2		WLSL T1	.001	.033	0.032	.001	[-.064, .066]
		BC T1	.002	.030	0.051	.002	[-.058, .061]
		WE T1	.761*	.054	15.120	.816	[.715, .926]
		MEgroup2	-.005	.056	-0.148	-.008	[-.116, .102]
		MEgroup3	.001	.040	0.022	.001	[-.077, .079]
EX T2		IN T1	-.006	.030	-0.176	-.005	[-.063, .053]
		NAMB T1	.022	.031	0.600	.019	[-.043, .080]
		EX T1	.681*	.056	11.961	.671	[.567, .786]
		MEgroup2	-.087*	.063	-2.541	-.160	[-.280, -.037]
		MEgroup3	-.116*	.045	-3.551	-.158	[-.246, -.071]
WP_self_context T3	WE T2	WE T2	.159*	.073	2.300	.169	[.021, .310]
		EX T2	-.192*	.070	-2.917	-.203	[-.350, -.074]
	WP_self_context T1	WP_self_context T1	.568*	.044	12.514	.553	[.467, .644]
		MEgroup2	-.094*	.088	-2.071	-.183	[-.360, -.013]
		MEgroup3	-.024	.056	-0.622	-.035	[-.146, .072]
		WLSL T1	-.115*	.040	-2.528	-.102	[-.181, -.024]
		BC T1	.082	.041	1.800	.074	[-.010, .154]
		WE T1	.006	.083	0.080	.007	[-.152, .170]
	IN T1	IN T1	.005	.035	0.123	.004	[-.067, .072]
		NAMB T1	-.051	.039	-1.178	-.046	[-.126, .032]
		EX T1	.086	.071	1.264	.090	[-.044, .236]

Table 6*Continued*

Effect Type	Outcome	Predictor	β	SE	z	B	95% CI (boot)
Direct Effects							
	WP_self_task T3	WE T2	.312*	.083	4.047	.334	[.173, .497]
		EX T2	-.063	.078	-0.865	-.067	[-.226, .081]
		WP_self_task T1	.528*	.048	10.862	.524	[.433, .624]
		MEgroup2	-.019	.086	-0.437	-.037	[-.211, .130]
		MEgroup3	.007	.055	0.192	.011	[-.099, .117]
		WLSL T1	-.094	.045	-1.863	-.083	[-.173, .003]
		BC T1	-.012	.038	-0.300	-.011	[-.083, .062]
		WE T1	-.104	.094	-1.267	-.119	[-.309, .061]
		IN T1	.026	.035	0.694	.025	[-.047, .094]
		NAMB T1	-.057	.042	-1.265	-.053	[-.136, .028]
	EX T1	.041	.076	0.559	.043	[-.102, .196]	
Indirect Effects							
	WP_self_context T3	WLSL T1 → WE T2	.000	.006	0.029	.000	[-.013, .012]
		BC T1 → WE T2	.000	.006	0.047	.000	[-.012, .012]
		IN T1 → EX T2	.001	.006	0.166	.001	[-.012, .015]
		NAMB T1 → EX T2	-.004	.007	-0.567	-.004	[-.018, .010]
	WP_self_task T3	WLSL T1 → WE T2	.000	.011	0.031	.000	[-.022, .024]
		BC T1 → WE T2	.001	.010	0.049	.001	[-.021, .021]
		IN T1 → EX T2	.000	.003	0.112	.000	[-.007, .007]
		NAMB T1 → EX T2	-.001	.003	-0.372	-.001	[-.009, .006]
Total Effects							
	WP_self_context T3	WLSL T1 (total)	-.115*	.040	-2.511	-.101	[-.181, -.023]
		BC T1 (total)	.082	.041	1.829	.074	[-.010, .153]
		IN T1 (total)	.006	.036	0.152	.005	[-.066, .073]
		NAMB T1 (total)	-.055	.039	-1.284	-.050	[-.130, .027]
	WP_self_task T3	WLSL T1 (total)	-.093	.045	-1.838	-.083	[-.173, .006]
		BC T1 (total)	-.012	.037	-0.291	-.011	[-.083, .062]
		IN T1 (total)	.026	.035	0.703	.025	[-.047, .094]
		NAMB T1 (total)	-.059	.042	-1.296	-.054	[-.137, .027]

Note. Abbreviations: β = standardized coefficients; B = unstandardized coefficients; BC = boundary control; EX = emotional exhaustion; IN = integration norms of the supervisor and the team; NAMB = norm ambiguity; SE = standard error; T1–T3 = time points 1 to 3; WE = work engagement; WLSL = work-life supportive leadership; WP_self_context = work performance self-rating - contextual performance; WP_self_task = work performance self-rating - task performance; WP_sup = work performance supervisor-rating; z = z-value; 95% CI (boot) = lower and upper bound of bias-corrected 95% confidence interval with 5,000 bootstrap samples. * $p < .05$, two-tailed tests.

Table 7

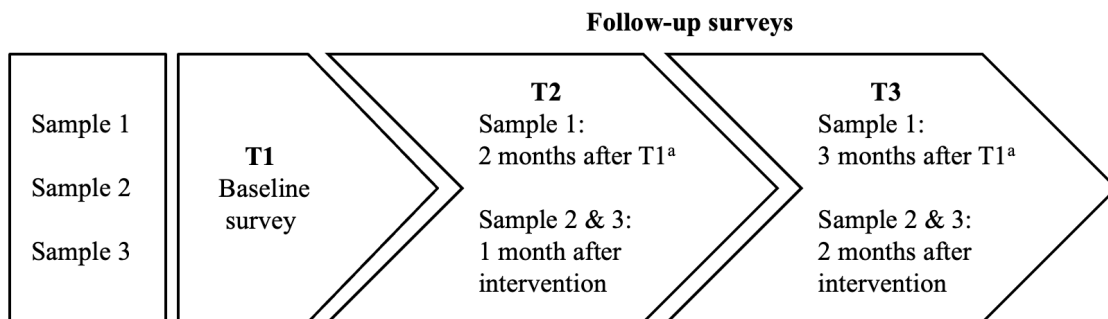
Model 4: Supervisor-Ratings of Employees' Work Performance - Effects from Structural Equation Modeling Controlled for Baseline

Effect Type	Outcome	Predictor	β	SE	z	B	95% CI (boot)
Direct Effects							
	WE T2	WLSL T1	.064	.042	1.567	.065	[-.018, .146]
		BC T1	.001	.039	0.019	.001	[-.076, .077]
		WE T1	.797*	.065	12.580	.817	[.693, .950]
	EX T2	IN T1	.034	.038	0.704	.027	[-.045, .104]
		NAMB T1	.031	.040	0.646	.026	[-.054, .100]
		EX T1	.719*	.097	7.684	.745	[.571, .954]
	WP_sup T3	WE T2	-.082	.090	-0.733	-.066	[-.253, .108]
		EX T2	-.073	.085	-0.699	-.059	[-.224, .110]
		WP_sup T1	.740*	.096	8.332	.802	[.628, 1.009]
		WLSL T1	.018	.049	0.306	.015	[-.082, .113]
		BC T1	.020	.039	0.380	.015	[-.066, .089]
		WE T1	.062	.089	0.576	.051	[-.130, .227]
		IN T1	.022	.029	0.465	.014	[-.043, .073]
		NAMB T1	-.055	.037	-0.990	-.036	[-.113, .031]
		EX T1	.074	.084	0.743	.063	[-.101, .229]
Indirect Effects							
	WP_sup T3	WLSL T1 → WE T2	-.005	.008	-0.556	-.004	[-.024, .007]
		BC T1 → WE T2	-.000	.004	-0.011	-.000	[-.009, .011]
		IN T1 → EX T2	-.002	.004	-0.360	-.002	[-.011, .007]
		NAMB T1 → EX T2	-.002	.004	-0.339	-.002	[-.012, .007]
Total Effects							
	WP_sup T3	WSLS T1 (total)	.013	.048	0.224	.011	[-.084, .106]
		BC T1 (total)	.020	.039	0.384	.015	[-.065, .088]
		IN T1 (total)	.019	.029	0.417	.012	[-.043, .071]
		NAMB T1 (total)	-.057	.036	-1.040	-.038	[-.113, .031]

Note. Abbreviations: β = standardized coefficients; B = unstandardized coefficients; BC = boundary control; EX = emotional exhaustion; IN = integration norms of the supervisor and the team; NAMB = norm ambiguity; SE = standard error; T1–T3 = time points 1 to 3; WE = work engagement; WLSL = work-life supportive leadership; WP_{self}_context = work performance self-rating - contextual performance; WP_{self}_task = work performance self-rating - task performance; WP_{sup} = work performance supervisor-rating; z = z-value; 95% CI (boot) = lower and upper bound of bias-corrected 95% confidence interval with 5,000 bootstrap samples. * $p < .05$, two-tailed tests.

Figure

Figure 1

Study Design

Note. T1-T3 refer to time points of measurement: T1 = baseline; T2–T3 = follow-up surveys.

^a These time frames corresponds to the interval between T1 and T2, respectively T2 and T3, in Sample 2 and Sample 3, ensuring that data in the control group were collected at equivalent time points as in the groups receiving an intervention.

Appendix**Appendix A***Overview and Model Fit Indices for Structural Equation Models for Model 5 and 6*

Model	χ^2 (df)	CFI	TLI	RMSEA	[90% CI]	SRMR
Model 5: Employee self-rating, without control variables, Sample 1	623.26 (275)	.944	.934	.049	[.044, .055]	.069
Model 6: Employee self-rating, controlled for baseline, Sample 1	1211.72 (635)	.948	.939	.042	[.038, .045]	.051

Note. These models were calculated exclusively with Sample 1. Model 5 corresponds to Model 1 and Model 6 corresponds to Model 2. Abbreviations: CFI = Comparative Fit Index; CI = Confidence Interval; df = degrees of freedom; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual; TLI = Tucker-Lewis Index; χ^2 = chi-square.

Appendix B

Model 5: Employees' Self-Rating of Work Performance - Effects from Structural Equation Modeling
Without any Control Variables Based on Sample 1

Effect Type	Outcome	Predictor	β	SE	z	B	95% CI (boot)
Direct Effects							
	WE T2	WLSL T1	.267*	.063	3.335	.209	[.096, .345]
		BC T1	-.078	.055	-1.140	-.062	[-.177, .041]
	EX T2	IN T1	-.001	.054	-0.019	-.001	[-.111, .102]
		NAMB T1	.096	.059	1.371	.081	[-.031, .200]
	WP_self_context T3	WE T2	.207*	.070	3.087	.216	[.078, .356]
		EX T2	-.205*	.075	-3.002	-.226	[-.386, -.087]
		WLSL T1	-.032	.063	-0.408	-.026	[-.145, .104]
		BC T1	.292*	.058	4.177	.244	[.128, .360]
		IN T1	-.007	.054	-0.141	-.008	[-.113, .101]
		NAMB T1	-.065	.057	-1.061	-.061	[-.174, .056]
	WP_self_task T3	WE T2	.472*	.077	6.527	.502	[.354, .656]
		EX T2	.015	.075	0.229	.017	[-.134, .162]
		WLSL T1	-.048	.065	-0.618	-.040	[-.160, .095]
		BC T1	.052	.056	0.795	.044	[-.062, .157]
		IN T1	.091	.058	1.775	.102	[-.010, .214]
		NAMB T1	-.061	.067	-0.862	-.057	[-.187, .073]
	WP_self_context T3	WLSL T1 $\rightarrow$ WE T2	.055*	.020	2.228	.045	[.013, .092]
		BC T1 $\rightarrow$ WE T2	-.016	.013	-1.020	-.013	[-.044, .009]
		IN T1 $\rightarrow$ EX T2	.000	.012	0.019	.000	[-.026, .026]
Indirect Effects							
	WP_self_task T3	NAMB T1 $\rightarrow$ EX T2	-.020	.014	-1.277	-.018	[-.050, .007]
		WLSL T1 $\rightarrow$ WE T2	.126*	.034	3.059	.105	[.046, .181]
		BC T1 $\rightarrow$ WE T2	-.037	.028	-1.121	-.031	[-.091, .021]
		IN T1 $\rightarrow$ EX T2	-.000	.004	-0.004	-.000	[-.009, .009]
		NAMB T1 $\rightarrow$ EX T2	.001	.007	0.186	.001	[-.014, .018]
	WP_self_context T3	WSLS T1 (total)	.024	.062	0.311	.019	[-.095, .150]
		BC T1 (total)	.276*	.057	4.011	.230	[.117, .344]
		IN T1 (total)	-.007	.055	-0.132	-.007	[-.116, .103]
Total Effects							
	WP_self_task T3	NAMB T1 (total)	-.085	.058	-1.356	-.079	[-.194, .036]
		WSLS T1 (total)	.078	.069	0.945	.065	[-.059, .211]
		BC T1 (total)	.015	.058	0.220	.013	[-.100, .131]
		IN T1 (total)	.091	.057	1.779	.102	[-.009, .214]
		NAMB T1 (total)	-.059	.067	-0.832	-.056	[-.188, .076]
		WE T2	WLSL T1	.267*	.063	3.335	.209
		BC T1	-.078	.055	-1.140	-.062	[-.177, .041]
		EX T2	IN T1	-.001	.054	-0.019	-.001
		NAMB T1	.096	.059	1.371	.081	[-.031, .200]

Note. Abbreviations: β = standardized coefficients; B = unstandardized coefficients; BC = boundary control; EX = emotional exhaustion; IN = integration norms of the supervisor and the team; NAMB = norm ambiguity; SE = standard error; T1–T3 = time points 1 to 3; WE = work engagement; WLSL = work-life supportive leadership; WP_self_context = work performance self-rating - contextual performance; WP_self_task = work performance self-rating - task performance; WP_sup = work performance supervisor-rating; z = z-value; 95% CI (boot) = lower and upper bound of bias-corrected 95% confidence interval with 5,000 bootstrap samples. * $p < .05$, two-tailed tests.

Appendix C

Model 6: Employees' Self-Rating of Work Performance - Effects from Structural Equation Modeling
Controlled for Baseline Based on Sample 1

Effect Type	Outcome	Predictor	β	SE	z	B	95% CI (boot)		
Direct Effects									
	WE T2	WLSL T1	-.026	.051	-0.413	-.021	[-.121, .079]		
		BC T1	.005	.044	0.085	.004	[-.086, .090]		
		WE T1	.737*	.085	9.428	.797	[.643, .972]		
	EX T2	IN T1	-.047	.046	-1.006	-.046	[-.137, .043]		
		NAMB T1	.007	.048	0.117	.006	[-.086, .100]		
		EX T1	.665*	.068	8.813	.600	[.470, .738]		
	WP_self_context T3	WE T2	.151	.093	1.704	.158	[-.025, .334]		
		EX T2	-.101	.088	-1.265	-.112	[-.294, .058]		
		WP_self_context T1	.571*	.067	7.944	.532	[.407, .670]		
		WLSL T1	-.143*	.055	-2.134	-.118	[-.227, -.008]		
		BC T1	.089	.058	1.309	.076	[-.036, .190]		
		WE T1	.058	.107	0.612	.065	[-.139, .277]		
		IN T1	-.016	.049	-0.359	-.018	[-.114, .076]		
		NAMB T1	-.005	.054	-0.080	-.004	[-.111, .101]		
		EX T1	-.021	.085	-0.251	-.021	[-.193, .146]		
		WP_self_task T3	WE T2	.322*	.107	3.244	.346	[.135, .556]	
			EX T2	.044	.102	0.492	.050	[-.158, .246]	
			WP_self_task T1	.483*	.069	6.871	.473	[.343, .612]	
		WLSL T1	-.066	.063	-0.886	-.056	[-.175, .073]		
		BC T1	-.012	.052	-0.202	-.010	[-.109, .095]		
		WE T1	-.080	.125	-0.745	-.093	[-.343, .145]		
		IN T1	.066	.053	1.377	.073	[-.031, .177]		
		NAMB T1	-.026	.064	-0.387	-.025	[-.153, .104]		
		EX T1	-.031	.094	-0.336	-.032	[-.207, .159]		
		Indirect Effects							
			WP_self_context T3	WLSL T1 → WE T2	-.004	.009	-0.348	-.003	[-.024, .015]
				BC T1 → WE T2	.001	.008	0.072	.001	[-.018, .018]
IN T1 → EX T2	.005			.008	0.665	.005	[-.006, .025]		
NAMB T1 → EX T2	-.001			.006	-0.096	-.001	[-.013, .015]		
	WP_self_task T3	WLSL T1 → WE T2	-.009	.018	-0.394	-.007	[-.045, .031]		
		BC T1 → WE T2	.001	.016	0.081	.001	[-.033, .034]		
		IN T1 → EX T2	-.002	.007	-0.326	-.002	[-.022, .008]		
		NAMB T1 → EX T2	.000	.005	0.051	.000	[-.009, .014]		

Appendix C*Continued*

Effect Type	Outcome	Predictor	β	SE	z	B	95% CI (boot)
Total Effects							
	WP_self_context T3	WSLS T1 (total)	-.147*	.055	-2.187	-.121	[-.230, -.011]
		BC T1 (total)	.090	.057	1.337	.076	[-.034, .189]
		IN T1 (total)	-.012	.049	-0.257	-.012	[-.109, .081]
		NAMB T1 (total)	-.005	.053	-0.093	-.005	[-.109, .100]
	WP_self_task T3	WSLS T1 (total)	-.074	.062	-1.008	-.063	[-.181, .065]
		BC T1 (total)	-.011	.051	-0.180	-.009	[-.109, .094]
		IN T1 (total)	.063	.052	1.357	.071	[-.034, .172]
		NAMB T1 (total)	-.026	.064	-0.383	-.025	[-.152, .103]

Note. Abbreviations: β = standardized coefficients; B = unstandardized coefficients; BC = boundary control; EX = emotional exhaustion; IN = integration norms of the supervisor and the team; NAMB = norm ambiguity; SE = standard error; T1–T3 = time points 1 to 3; WE = work engagement; WLSL = work-life supportive leadership; WP_self_context = work performance self-rating - contextual performance; WP_self_task = work performance self-rating - task performance; WP_sup = work performance supervisor-rating; z = z-value; 95% CI (boot) = lower and upper bound of bias-corrected 95% confidence interval with 5,000 bootstrap samples. * $p < .05$, two-tailed tests.

General Discussion

The overarching aim of this thesis was to investigate how boundary management can be enhanced in flexible work designs to support employees' well-being, life domain balance, and work performance. To this end, we extended previous theory and research by developing a theoretical model that differentiates between employees' approach to managing work and private life and their mode of ICT use. The model provides a basis for distinguishing between categories that are more beneficial and those that may carry greater risks, for identifying characteristics of beneficial boundary management, and for deriving practical recommendations. We incorporated these insights into the design of a boundary management intervention for teams and demonstrated how improvements in boundary management can be achieved through an organizational intervention with an individual and team level approach. Yet, the effects of job characteristics regarding work-life support and boundary management on work performance remain preliminary and call for further research. The following section discusses various aspects of our research in an integrative manner.

Characteristics of Beneficial Boundary Management

One central aim of this thesis was to identify the favorable facets of flexible work designs and to pinpoint the characteristics of beneficial boundary management within this context. By combining the development of a theoretical model with the design and evaluation of a practical intervention, this work provides a foundation for understanding how employees can navigate flexible work arrangements effectively. Together, these contributions offer several implications for theory, research, and practice, which will be discussed in the following sections.

At a theoretical level, we frequently grappled with the question of how integration and segmentation should be defined in the context of flexible work designs. The underlying challenge was that flexible work designs inherently involve a certain degree of integration (Allen et al., 2014). For instance, individuals working from home naturally experience work and private life in closer proximity, with boundaries likely being more permeable than for those working on-site. This raised the question of whether segmentation would mean that location- and time-independent work via ICT should be avoided altogether. Such an interpretation would have fundamentally altered the aim of our intervention, making it less applicable to the realities and needs of employees' daily work. Drawing on boundary theory and

guided by practical considerations, we characterized beneficial boundary management as the deliberate creation of clear psychological boundaries between life domains, combined with conscious management of role transitions. From an external perspective, individuals working from home may indeed engage in integrated work. Yet, through symbolic boundaries and structured routines, they can simultaneously reduce permeability (Seeber & Erhardt, 2023) and enact some degree of segmentation (Allen et al., 2021; Cho et al., 2025). Future theory and research would benefit from explicitly addressing these nuances, providing clear and differentiated definitions of integration and segmentation specifically for the context of flexible work designs (Cobb, 2022).

With regard to research on boundary management, the developed model and intervention highlight several limitations of the present study and point to promising directions for future research. First, it should be noted that the theoretical model was developed based on existing theory and research but has not yet been empirically tested. Consequently, a next step for future research would be to validate the model. In particular, it would be valuable for future research to examine whether the effects truly differ between responsive and initiating ICT use when work and private life are highly integrated. This could be achieved, for example, by testing the different categories in pilot studies, such as diary studies, as well as in longer-term longitudinal designs, in order to examine both short- and long-term consequences for relevant outcomes. Additionally, it would be valuable to investigate potential moderating factors that influence the effects of different categories. For instance, it would be interesting to investigate how the frequency of ICT use, behavioral regulation, or team-related aspects like conflicts shape these effects (Cooper & Lu, 2019; Day et al., 2019). Second, when interpreting our findings within the model, it is important to recognize that our research was shaped by developments during and shortly after the COVID-19 pandemic, which triggered an unexpected and rapid increase in the prevalence of flexible work designs (Bundesamt für Statistik [BFS], 2025; Eurofound, 2024). This raises two important questions for future research. To begin with, it will be relevant to examine how the proportion of flexible work designs evolves in relation to on-site work. Although the share of people working at least occasionally from home or from flexible locations increased sharply during the COVID-19 pandemic, it has mostly remained stable since 2022 (Bundesamt für Statistik [BFS], 2025; Eurofound, 2024). This development may influence how relevant the topic remains in the future and how strongly

individuals are affected by its potential consequences. Furthermore, future research should explore the extent to which individuals can adapt to these changes over time, thereby reducing potential negative health consequences, whether through psychological or physiological adaptation to frequent boundary transitions (Korabik et al., 2017; Madore & Wagner, 2019), shifts in subjective appraisal, or the development of enhanced resources for managing demands (e.g. Allen et al., 2024; Sonnentag et al., 2022). Both aspects are likely to shape the agenda for future research.

Finally, the characteristics of beneficial boundary management in the context of flexible work designs, as developed and implemented in this thesis, offer considerable practical value. They complement existing literature, which offers few concrete guidelines (Day et al., 2019; Reinke & Gerlach, 2022) and, in intervention studies yielded limited results (e.g., Althammer et al., 2024; Rexroth et al., 2016; Reinke & Ohly, 2024; Schlachter, 2017). The recommendations from Paper 1, together with the findings from the team intervention in Paper 2, enable employees to reflect on their daily routines in a nuanced way and provide actionable strategies for optimizing behavior, for example, by using work-family boundary management tactics, seeking support within the team, or clarifying integration expectations. For organizations, the findings offer actionable insights to align cultural aspects (e.g., enhancing norm clarity and fostering work-life support within teams) with structural elements (e.g., adapting workplace policies) in a way that facilitates beneficial boundary management (Casper et al., 2025; Kossek et al., 2023a). At the same time, it is important to acknowledge that our model represents a simplification of reality. Consequently, generalizing the recommendations to individual circumstances should be done with caution, as employees' needs regarding boundary management can shift across different life phases, for instance during family formation or when taking on caregiving responsibilities (Scheibe et al., 2024). This highlights an important avenue for future research, namely the tailoring of recommendations and interventions to individual circumstances in order to maximize their effectiveness.

Effective Boundary Management Interventions

Another aim of this thesis was to actively foster boundary management among employees through a targeted intervention. Our findings provide several implications for both research and practice.

A key insight is that the intervention elements, derived from theoretical models and prior studies, resulted in measurable improvements in boundary management.

In particular, our combined approach, targeting both individual- and team-directed antecedents within the organizational setting, proved effective. It enhanced individual boundary management and positively influenced participants' perceptions of team-level processes, such as norm clarity. In doing so, our intervention extended previous studies that reported limited results (e.g., Althammer et al., 2024; Reinke & Ohly, 2024; Rexroth et al., 2016; Schlachter, 2017) and responded to recent calls for organizational boundary management interventions that explicitly address challenges at the team level (Day et al., 2019; Reinke & Gerlach, 2022). Interestingly, this team-oriented approach is consistent with employees' experiences in flexible work designs, as employees tend to rate hybrid work policies most positively when they are developed collaboratively within the team (Gallup, 2025).

For research, this indicates that interventions that integrate relevant antecedents across multiple levels hold considerable promise for enhancing boundary management. Building on the broader Digital Balance project, future research should continue to investigate multi-level interventions to better understand how combined approaches can maximize impact. For example, it would be valuable to examine how combining different components, such as supervisors completing the e-learning program *Their Digital Balance*, teams participating jointly in the workshop *Our Digital Balance*, and individuals engaging with the app *My Digital Balance* according to their personal needs, might reinforce effects across levels.

From a practical perspective, the workshop we developed provides organizations with a ready-to-implement, actionable measure. Because it can be applied without extensive preparatory effort, it has the potential to lower the threshold for organizations to introduce boundary management initiatives. Findings from the process evaluation further underscore its practical value. First, the workshop proved highly feasible, demonstrating effectiveness both in online and on-site formats. Second, the evaluation suggested that participants with a higher initial need were more likely to benefit from the intervention. In particular, employees who rated the workshop more positively also tended to report greater reductions in integration enactment and integration norms, indicating that the workshop may be particularly beneficial for those experiencing the highest strain from blurred boundaries. Taken together, these

findings highlight the concrete practical benefits of the workshop for supporting boundary management in organizational settings. One limitation to consider when transferring the workshop into practice is that the feasibility of implementing boundary management measures depends not only on individual factors and team dynamics but also on the structural characteristics of the job itself (Kossek, 2016). Boundaries cannot be shaped entirely at will; employees must also accommodate clients, customers, or colleagues from other departments (Kossek, 2016; Kossek et al., 2023a). Consequently, future research should investigate how organizations can foster readiness for boundary management across teams and how structural conditions can be designed to ensure that managing boundaries is genuinely feasible in everyday work.

Selected Antecedents of Boundary Management

This research examined team-directed antecedents of boundary management and their implications for employee outcomes, with a particular focus on work performance. Two antecedents merit closer discussion: first, the role of integration norms and norm clarity, respectively norm ambiguity, and second, the role of work-life support provided by supervisors and teams.

Integration Norms and Norm Ambiguity - Norm Clarity

Findings from Paper 2 and Paper 3 suggest that the role of integration norms in boundary management is less clear than previously assumed. Earlier studies show that employees who perceive strong integration norms from their team or supervisor are more likely to integrate work into their private life (Palm et al., 2020; Park et al., 2020; Reinke & Gerlach, 2022). Such norms have been associated with negative outcomes, including reduced psychological detachment, elevated stress, and increased work-family conflict (Derks et al., 2014; Haun et al., 2022; Reinke & Gerlach, 2022). In line with this, Paper 3 found that participants with high integration norms reported more emotional exhaustion over time. However, this did not translate into reduced work performance. Moreover, results from Paper 2 challenge our assumption that integration norms necessarily need to change in order to improve individual boundary management. Instead, the significant increase in norm clarity was accompanied by improvements in individual boundary management. This suggests that individuals can adjust their behavior even when the broader behavioral standards within the team remain unchanged as long as the norms are clearly communicated. However, the role of norm clarity and ambiguity remains insufficiently

understood. On the one hand, the supposedly central function of norm clarity and ambiguity in our research is somewhat tempered by the fact that we did not find significant associations between norm ambiguity and work performance. On the other hand, evidence from the limited existing literature on this construct is also inconclusive (Heissler et al., 2024). Consequently, our findings point to two important directions for future research. Regarding integration norms, it will be important to examine how long performance can be maintained under high integration norms and through which mechanisms or resources this can be achieved. For example, personal or job resources (e.g., prioritization skills or social support) may initially buffer the negative effects of high integration norms, while performance could decline over the long term. Additionally, it would be valuable to clarify the specific mechanisms through which norm clarity and ambiguity operate, such as whether it increases perceived autonomy or possibly strengthens boundary control.

Work-Life Supportive Behavior

Our findings suggest that work-life support, whether provided by the team or the supervisor, complements boundary management. Two key findings from our research support this conclusion. First, we successfully translated the concept of work-life supportive leadership to the team level within our workshop, achieving measurable improvements both in family-supportive team behavior and in individual boundary management among participants. Second, we observed a positive relationship between work-life supportive leadership and work performance via work engagement, which emerged for absolute levels. Together, these results indicate that work-life support is closely linked to employees' ability to manage boundaries and plays a meaningful role in sustaining performance. This conclusion aligns with theoretical perspectives from work-family culture (Thompson, 1999) and recent research on boundary management in the context of the COVID-19 pandemic (Kossek et al., 2021). From a theoretical perspective, our findings underscore the value of further integrating work-life support research with boundary management research. Practically, interventions aimed at enhancing boundary management should also focus on strengthening work-life support, both from leaders and within teams. Our findings show that, within the structural flexibility offered by modern work arrangements, work-life support can foster an environment in which employees are better able to navigate boundaries and sustain their performance. Future research could examine how these social job characteristics interact

optimally with structural factors, such as workplace policies, to shape boundary management and, ultimately, influence employee outcomes.

Further Antecedents of Boundary Management

Regarding the factors influencing boundary management, our study primarily focused on the organizational level, including individuals, teams, and their supervisors. However, additional potential factors that may contribute to the internal pressure to remain constantly connected to work were not examined, either within this thesis or across the other two intervention studies conducted as part of this project. These include, first, individual factors, such as cognitive biases that create a perceived obligation to respond immediately (Giurge & Bohns, 2021); second, societal and organizational value systems, including performance-driven cultures and social norms around workload management (Fastje et al., 2023); and third, organizational structures, such as formal policies or client agreements (Casper et al., 2025; Kossek et al., 2023a). Future research should explore these additional factors in more detail to better understand their impact on employees' boundary management.

This also points to a new direction for intervention development. Our study focused on outcomes that participants could at least partially influence, such as using work-family boundary management tactics or clarifying mutual expectations within the team. Yet, many potential influences lie beyond their direct control. Future interventions could therefore equip employees with strategies to manage these external pressures, with research on mindfulness in the context of work–family conflict and boundary management providing a promising example (Althammer et al., 2021; Hülshager, 2025).

Job Characteristics Enabling Performance in Flexible Work Designs

In the present research, the examined job characteristics related to work-life support and boundary management did not provide a conclusive explanation for work performance. Several factors could account for this, including the possibility that additional mechanisms are important for understanding work performance in flexible work designs, as outlined by Ohly and Venz (2025). Two of these mechanisms may be particularly relevant in the context of boundary management and are discussed in more detail below.

First, Ohly and Venz (2025) argue that new ways of working often provide employees with greater opportunities to shape their tasks and work according to personal preferences. This autonomy

can strengthen intrinsic motivation, which in turn supports work performance (Deci et al., 2017). In contrast, when work behaviors are driven primarily by extrinsic motivation, such as workload pressure or external expectations, performance may be constrained. Cooper and Lu (2019), in their theoretical paper, describe similar effects regarding excessive availability for work. Availability driven by intrinsic motivation, such as a strong personal interest in the work, tends to yield positive outcomes, including enhanced work performance. In contrast, extrinsically motivated availability, for example the pursuit of social recognition, might have negative consequences (Cooper & Lu, 2019). Taken together, these findings suggest that job characteristics associated with flexible work designs can influence performance, with individual behavioral regulation acting as a central underlying mechanism.

Second, flexible work designs can also increase job complexity, depleting cognitive resources and thereby limiting the capacity needed to sustain high levels of performance (Ohly & Venz, 2025; Parker et al., 2021). In general, flexible work designs place substantial demands on self-regulation, including planning working hours and managing boundaries between work and private life (Troll et al., 2022). In addition, interruptions can further drain cognitive resources by forcing employees to juggle competing tasks, such as being interrupted at work by colleagues or in private life by incoming work-related messages (Allen et al., 2024). Interestingly, both types of interruptions fit within the model developed in Paper 1: the former aligns with segmenting-responsiveness, while the latter reflects integrating-responsiveness. In this way, job characteristics of flexible work designs may impair performance, with cognitive resource depletion serving as an underlying mechanism.

Taken together, these perspectives suggest that mechanisms beyond those examined in this thesis may shape the relationship between flexible work designs and work performance. Importantly, because both motivation and cognitive capacity are closely tied to how employees regulate their boundaries, boundary management remains a central lens for understanding and potentially guiding these effects.

Conclusion

Regardless of where and when people work, constant availability has become a defining feature of modern working life. The dilemma, the opportunity, yet also the subtle pressure, to check emails anytime, anywhere and thereby “*save the world*” (originally “*nur kurz die Welt retten*”, Bendzko, 2011), places responsibility on employees and organizations alike to actively navigate the boundaries between work and private life. At the societal and political level, awareness of the risks of boundless availability has grown. Initiatives such as the EU’s *Right to Disconnect* and national regulations in several member states aim to protect employees from permanent availability for work-related matters (Eurofound, 2023). At the same time, policy seeks to promote the benefits of flexible work designs, such as remote work (Swiss Federal Assembly, 2025). Yet, recent data (Eurofound, 2023) suggests that regulations alone are insufficient to maintain clear boundaries between work and private life, as workplace culture, shaped by behavioral standards and perceived expectations, still often leans toward constant connection and an always-on mindset.

This thesis set out to contribute to the enhancement of boundary management in flexible work designs, with the overarching goal of fostering employees’ well-being, life domain balance, and work performance. To this end, a theoretical model was developed that highlights how the effects of flexible work designs depend on the way ICT is used and boundaries between work and private life are drawn. Building on these insights, a team-level intervention was designed and evaluated, showing sustainable improvements in both individual and team-directed boundary management. Finally, first evidence was provided on the associations between job characteristics, boundary management, and work performance, although further research is needed to draw robust conclusions.

Taken together, the findings underscore that the potential of flexibility can be realized when accompanied by a work culture in which respecting boundaries has become a natural part of everyday life. Organizations therefore need to create structures *and* foster cultures that enable employees to maintain their boundaries, for the sake of well-being, life domain balance, and sustained work performance. In this way, employees may indeed “*save the world*” (originally “*nur kurz die Welt retten*”, Bendzko, 2011) while still upholding the boundaries between work and life.

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