



OPEN ACCESS

EDITED BY

Antonio Ariza-Montes,
Universidad Loyola Andaluca, Spain

REVIEWED BY

Tahrima Ferdous,
BRAC University, Bangladesh
Özden Altındağ,
Doğuş University, Türkiye

*CORRESPONDENCE

Elfi Baillien
✉ Elfi.Baillien@kuleuven.be

†These authors share last authorship

RECEIVED 25 June 2026

REVISED 11 August 2026

ACCEPTED 08 September 2026

PUBLISHED 28 September 2026

CITATION

Geldof LTD, Verlinden A, Baillien E and
DeSmet A (2026) The association
between organizational culture and
climate elements on W-ICT (non-)use
outside working hours and employee
psychological wellbeing: a systematic
review of qualitative and quantitative
studies.
Front. Organ. Psychol. 4:1919818.
doi: 10.3389/forgp.2026.1919818

COPYRIGHT

© 2026 Geldof, Verlinden, Baillien and
DeSmet. This is an open-access article
distributed under the terms of the
[Creative Commons Attribution License](#)
(CC BY). The use, distribution or
reproduction in other forums is
permitted, provided the original author(s)
and the copyright owner(s) are credited
and that the original publication in this
journal is cited, in accordance with
accepted academic practice. No use,
distribution or reproduction is permitted
which does not comply with these terms.

The association between organizational culture and climate elements on W-ICT (non-)use outside working hours and employee psychological wellbeing: a systematic review of qualitative and quantitative studies

Lore T. D. Geldof^{1,2}, Alice Verlinden¹, Elfi Baillien^{1*} and
Ann DeSmet^{2,3†}

¹Department of Work and Organization Studies, KU Leuven, Leuven, Belgium, ²Department of
Communication Studies, University of Antwerp, Antwerp, Belgium, ³Faculty of Psychology, Educational
Sciences and Speech Therapy, Université Libre de Bruxelles, Brussels, Belgium

Introduction: Work-related Information and Communication Technology (W-ICT) use outside working hours (OWH) has become increasingly prevalent, raising important questions about its implications for employee wellbeing. While W-ICT use and non-use are embedded within broader organizational climates and cultures that shape norms, expectations, and practices regarding after-hours connectivity, these contextual influences have not yet been examined in an integrated manner. Specifically, we lack a comprehensive understanding of how organizational environments surrounding W-ICT OWH are associated with employee wellbeing. Therefore, this systematic review synthesizes empirical research on this relationship, guided by Boundary and Signaling theories and Warr's framework of wellbeing.

Methods: Both quantitative and qualitative original research articles published in English or Dutch, on the association of organizational culture and climate related to W-ICT OWH and (self-reported) employee wellbeing were included. Following Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, 24 papers comprising 25 studies were identified through searches in Web of Science, EBSCOhost, and Scopus. Risk of bias was assessed with appropriate tools for quantitative [National Institutes of Health (NIH) Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies, EPHPP] or qualitative studies (Hawker's critical appraisal tool). A narrative synthesis was conducted across three levels of wellbeing: facet, domain, and context-free wellbeing.

Results: Across all levels of wellbeing, organizational expectations and norms encouraging availability and connectivity OWH were consistently associated with poorer employee wellbeing, including lower psychological detachment, greater work-life interference, higher stress, and emotional exhaustion. In contrast, organizational support for segmentation and boundary management was generally linked to more favorable wellbeing. Findings regarding organizational practices were more nuanced: while some practices promoting after-hours connectivity were associated with impaired wellbeing,

employees occasionally experienced them as beneficial when these facilitated flexibility, task completion, or alignment with personal boundary preferences.

Discussion: Overall, findings suggest that organizational cultures and climates relate to employee wellbeing via the extent to which they support or constrain employees' ability to manage boundaries between work and private life. These findings are limited by those of the included studies, that mainly consisted of cross-sectional studies predominantly investigating negatively framed domain wellbeing, so future research on longitudinal or experimental designs on other wellbeing outcomes is needed to complement these conclusions.

Systematic review registration: <https://www.crd.york.ac.uk/PROSPERO/view/CRD42023396654>, identifier: CRD42023396654.

KEYWORDS

boundary management, employee wellbeing, organizational climate, organizational culture, outside working hours, work-related ICT

1 Introduction

Digitalization has transformed when, where, and how employees perform their work. Work-related Information and Communication Technologies (W-ICTs) encompass any information and communication technology used for work purposes, including devices, platforms, messages, and content types. W-ICTs have increased temporal and spatial flexibility (Barnett and Hall, 2001; Barnett and Hyde, 2001; Diaz et al., 2012; Hill et al., 2003), allowing employees to align work with private responsibilities, avoid daytime bottlenecks, and respond swiftly to urgent matters (Day et al., 2019). Moreover, W-ICT use has been associated with increased work engagement and job performance (Day et al., 2010). At the same time, these technologies enable employees to engage in work tasks outside regular working hours (OWH)—periods during which employees are contractually not expected to work—via smartphones, laptops, and other digital devices, potentially extending the working day (Boswell and Olson-Buchanan, 2007; Jarvenpaa and Lang, 2005). Recent work conceptualizes technology-assisted supplemental work as the active performance of role-prescribed work tasks outside regular working hours through technological tools (Kühner et al., 2023). In this review, we adopt a broader conceptualization of W-ICT use outside working hours (OWH). Our definition not only encompasses active W-ICT behaviors outside regular hours (e.g., after-hours emails, extended workdays, on-call work), but also more passive forms of after-hours connectivity, including extended availability, being reachable or responsive without active tasks (Bergman and Gardiner, 2007). These behaviors may impair recovery by limiting psychological detachment from work (Sonnentag, 2012). Consistent with this reasoning, both narrative and meta-analytic evidence show that W-ICT use OWH is associated with reduced psychological detachment, poorer sleep quality, and greater work-nonwork conflict (Schlachter et al., 2018; Kühner et al., 2023). By extending work demands into non-work time and blurring boundaries between work and private life, such behaviors may hinder employees' ability to replenish depleted resources. Consequently, work-related psychological wellbeing—the quality of workers' affective experiences and their evaluations of personal functioning (Warr, 2012)—may be undermined, increasing risks of burnout,

emotional exhaustion, and sleep disturbances (Derks and Bakker, 2014; Duranová and Ohly, 2016; Sonnentag et al., 2010).

Boundary theory (Ashforth et al., 2000) provides a useful framework for understanding why W-ICT use OWH can result in such divergent outcomes. The theory posits that employees occupy multiple roles across work and non-work domains and actively manage the boundaries between these roles through processes of segmentation or integration. Depending on their boundary preferences and strategies, employees may establish clear separations between work and personal life (i.e., segmentation) or deliberately integrate both domains by allocating time and attention across them (i.e., integration) (Allen et al., 2014; Kreiner, 2006). In contemporary work environments, however, the constant accessibility afforded by W-ICTs challenges such boundary management (Allen et al., 2014; Kossek, 2016), increasing the likelihood of boundary blurring and work-home spillover (Butts et al., 2015). This tension—in which W-ICTs simultaneously enable flexibility and performance while undermining self-management and recovery—has been described as the i-paradox of digital work (Day et al., 2019).

In response, growing scholarly attention has turned to digital disconnection, the deliberate *non*-use of W-ICTs OWH, as a potential facilitator of psychological detachment, recovery, and employee wellbeing (Vanden Abeele et al., 2024; Verlinden et al., 2025). However, (interrupted) non-use may also evoke negative emotions such as shame, particularly in high-performance contexts where using W-ICTs OWH may function as a means for achieving more output (Kundro et al., 2023). This hints that the organizational context and more particularly its stance toward (non-)use of W-ICTs OWH plays a role in employee psychological wellbeing (Kossek and Lautsch, 2012). Such a positioning toward W-ICTs OWH is typically reflected in elements of the organizational culture and climate (Schneider and Barbera, 2014). While literature has provided several perspectives on organizational climate and culture—in which culture generally refers to implicit values, beliefs, and assumptions reflecting taken-for-granted ideas (Schein, 2010) and climate to more observable cues from policies, practices, procedures, expectations and behaviors that are rewarded or supported (Schneider et al., 2013)—they are commonly regarded as interdependent and mutually reinforcing (e.g., Julmi, 2017).

Organizational culture is generally more encompassing than organizational climate, which usually relates to a specific topic. Culture is what employees learn as appropriate ways to think and feel, and is reflected in unwritten rules and norms. Dimensions underlying this culture can, inspired by the Competing Values Framework (Quinn and Rohrbaugh, 1981), vary on a continuum from flexibility, discretion, dynamism to stability, order and control on the one hand, and from internal orientation, integration, unity to external orientation, differentiation, rivalry on the other hand (Samsudin et al., 2020). These values and norms become visible via logos, slogans, rituals, or narratives such as popular stories among employees (Feldman and O'Neill, 2014). Organizational culture shapes the emergence of organizational climate through enacted values, beliefs and assumptions, while climate stabilizes and signals those values through observable practices, procedures, rewarded or supported behaviors, and expectations (Schneider and Barbera, 2014). Organizational climate is usually related to a specific topic, for example, diversity or ICT connectivity, and more visible and tangible (Feldman and O'Neill, 2014). For example, a company that values rivalry (culture) may implicitly encourage the expectation and practice of 24/7 connectivity to get ahead of colleagues (climate), which in turn reinforces the value of rivalry (culture). As both provide elements that are relevant to define the organizational context, this paper does not attempt to distill the uniqueness of each concept (i.e., culture vs. climate) regarding W-ICT (non-)use OWH, but instead assembles all elements grouped by culture and climate that can provide insights in how the organizational context regarding W-ICT (non-)use OWH may be associated with employee psychological wellbeing.

Existing reviews have consistently shown that organizational culture and climate are closely related to employee psychological wellbeing (e.g., Aggarwal, 2024; Eisenberger et al., 2020; Gershon et al., 2007). Research on W-ICT use OWH has likewise highlighted the importance of the organizational context. For instance, Schlachter et al.'s (2018) narrative review identified the social-normative organizational context, including organizational norms and expectations regarding availability, as a key antecedent of voluntary W-ICT use OWH. Similarly, Kühner et al.'s (2023) meta-analysis found after-hours availability expectations to be among the strongest correlates of technology-assisted supplemental work, alongside workplace telepressure. Together, these findings suggest that organizational culture- and climate-related factors play an important role in shaping employees' connectivity behaviors.

However, research has primarily examined these factors as antecedents of W-ICT use OWH rather than as potential direct determinants of employee wellbeing. Yet, focusing exclusively on W-ICT use OWH as a behavioral pathway may overlook the possibility that organizational culture and climate exert direct effects on employee wellbeing. For example, norms and expectations regarding availability may trigger anticipatory stress, feelings of pressure, or reduced psychological detachment from work, even when employees do not actually engage in work-related ICT use outside working hours (Barber and Santuzzi, 2015; Santuzzi and Barber, 2018). Examining the direct associations between W-ICT use OWH-related culture and climate and employee wellbeing is therefore essential to understand the full range of mechanisms through which organizational environments may affect employee functioning, and to identify which aspects are most strongly associated with employee wellbeing. Such knowledge is crucial for prioritizing organizational

interventions and developing evidence-based strategies to create healthier digital work environments. To address this gap, the present review systematically synthesizes studies on W-ICT (non-)use OWH-relevant elements of organizational culture and climate and examines how these elements relate to employee psychological wellbeing.

1.1 Theoretical underpinning

To delineate the core concepts and guide the synthesis, this review draws on two complementary theories, Boundary Theory and Signaling Theory, and on Warr's (2012) framework of wellbeing specificity. First, Boundary Theory (Ashforth et al., 2000; Nippert-Eng, 1996) informs our understanding of boundary orientations reflected in organizational culture and climate surrounding the (non-)use of W-ICT OWH, and their implications for employee psychological wellbeing. Importantly, the earlier discussed employee boundary management strategies do not unfold in isolation. Rather, they are embedded within a broader organizational context in which cultural and climate-related elements—such as implicit expectations, shared norms, and organizational practices—not only shape patterns of W-ICT (non-)use OWH but may also exert a direct influence on how employees experience these practices (e.g., Day et al., 2012; Mellner, 2016). Given the ambivalence in the relationship between W-ICT (non-)use OWH and wellbeing (e.g., Mazmanian et al., 2013; Schlachter et al., 2018), it is therefore particularly relevant to examine how organizations position themselves with regard to boundary management and boundary blurring—for instance, by implicitly or explicitly encouraging segmentation, promoting integration, or granting employees greater control over managing boundaries—and how such positioning associates with employee psychological wellbeing.

Second, Signaling Theory (Spence, 1973; Connelly et al., 2011) explains how organizational culture and climate create meaning for employees through the cues they provide about organizational priorities and expectations. Organizations communicate their stance toward after-hours connectivity through both explicit and implicit signals. Formal policies and stated availability expectations constitute relatively direct signals, whereas supervisors' behavior, recurring communication practices, and supported or rewarded behaviors provide more indirect or enacted cues about what is considered appropriate, valued, and legitimate (Suazo et al., 2009). Employees may use these signals to infer whether availability outside working hours is expected and whether disconnection is acceptable. Signals that consistently support segmentation may legitimize recovery and strengthen employees' boundary control, whereas signals favoring constant connectivity—or inconsistent signals in which formal policies conflict with everyday practices—may create pressure and ambiguity. Signaling Theory thus complements Boundary Theory by explaining the communicative process through which organizational culture and climate may enable or constrain boundary management and relate to employee wellbeing.

Third, following Warr (2012), we conceptualize wellbeing at three analytically distinct levels, each capturing a different scope of experience. At the most specific level, *facet-specific wellbeing* refers to evaluations anchored in a single, clearly

bounded facet of experience, capturing responses to specific features (e.g., technology) of one's working conditions. In the context of (non-)use of W-ICT OWH, this includes indicators such as technostress or ICT-related satisfaction. A broader perspective is offered by *domain-specific wellbeing*, which reflects experiences within a particular life sphere, such as work, family, health, or leisure. Examples include job satisfaction, job burnout, work engagement, psychological detachment from work, or family satisfaction, enabling us to capture how W-ICT OWH (non-)use relates to specific domains of life. At the broadest level, *context-free wellbeing* refers to global evaluations of life that are not tied to any specific domain, such as general happiness or life satisfaction. Distinguishing between these levels allows for a more nuanced understanding of how W-ICT (non-) use OWH-relevant elements of organizational culture and climate may relate similarly vs. differently to various dimensions of wellbeing, avoiding the tendency to treat wellbeing as a unitary construct.

1.2 Research objective

In summary, the objective of this systematic review is to synthesize qualitative and quantitative research on organizational culture- and climate-related elements of W-ICT (non-)use OWH and their associations with employee psychological wellbeing. Specifically, this review aims to address the following research question: how do W-ICT (non-)use OWH-relevant elements of organizational culture (i.e., values, beliefs, and assumptions reflecting taken-for-granted ideas) and organizational climate (i.e., practices, procedures, rewarded or supported behaviors, and expectations) relate to three different levels of employee psychological wellbeing? By integrating existing findings to highlight patterns and inconsistencies, we aim to identify gaps that are relevant for theory development and the design of organizational interventions.

2 Methods

2.1 Systematic review protocol

This systematic review is part of a broader, overarching systematic review on general W-ICT (non-)use and health, social, wellbeing and work productivity-related outcomes. The target population consists of employees. The study follows Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Page et al., 2021) and was preregistered on Prospective Register of Systematic Reviews (PROSPERO) (ID: CRD42023396654).

2.2 Search strategy

This review was part of a larger, overarching systematic review that included other research questions, such as effectiveness of disconnection strategies, that are addressed in other publications in preparation. The search strategy consisted of several steps. In a first step, the search for the overarching review was conducted in December 2022 and updated in July 2024. In a second step,

the results of this overarching review were screened for their fit with the inclusion criteria of the focused review. In a third step, the search was updated in March 2025, but only with the search terms of this specific, focused review. Data sources included Web of Science (source types: article, proceeding paper, early access), EBSCOhost (source types: academic journals, trade publications, reports, dissertations, conference material), and Scopus (source types: journal, conference proceeding, trade journal, report). Searches were conducted using a search string that combined keywords of antecedents, outcomes, and contextual factors of W-ICT (non-)use (Appendix A). The review includes studies from publication year 2000 onward, reflecting the rise in adoption of mobile work-related ICTs at that time (ITU, 2022).

2.3 Inclusion criteria

Studies were included for this focused review if they met the following criteria: (1) original, peer-reviewed empirical research published in English or Dutch; (2) on the associations between organizational climate or culture elements concerning W-ICT (non-)use OWH and psychological wellbeing, encompassing both positive and negative indicators. No exclusions were made based on whether wellbeing was conceptualized as affective vs. cognitive-affective, or as a state vs. trait; (3) quantitative, qualitative, or mixed-methods research designs; (4) with employees or self-employed individuals as participants reporting on their own experiences. The following studies were excluded: (1) not original research papers (e.g., reviews, meta-analyses, opinion letters); (2) studies that did not focus on organizational culture and climate elements concerning W-ICT (non-)use OWH (e.g., personal exchanges unrelated to work, even if they occurred with a work contact such as chatting privately with a colleague) and their relation with psychological wellbeing (e.g., those focused solely on team dynamics, telework preferences, or turnover intentions); (3) participants (e.g., employers) reporting on others' (e.g., employees') wellbeing; (4) studies conducted during the COVID-19 pandemic, as the pandemic created atypical wellbeing risks, such as anxiety of getting sick, loneliness, feelings of entrapment, psychological distress, and depression (Giorgi et al., 2020; Hamouche, 2020; Mendonça et al., 2022), due to social distancing as well as atypical working conditions, such as mandated telework, heightened ICT use, and blurred work-life boundaries, which may not be representative of standard pre- or post-pandemic working contexts (Eurofound, 2020). There were no restrictions on the minimum sample size of a study for inclusion.

2.4 Data extraction

All titles and abstracts were screened by two independent researchers (LG, AD, EV, YL, CD, HD, LI), with a percent agreement of 96.7% and Cohen's Kappa $\kappa = 0.90$. During full text screening, 19.0% of the papers ($n = 175$) were double screened (LG, ADS, EB), resulting in a percent agreement of 77.7% and Cohen's Kappa $\kappa = 0.71$. Any disagreement was discussed among the authors to improve screening reliability. The first author (LG) then continued the screening process as a single screener and consulted the team in case of ambiguity.

Data extraction was first performed (*LG, ADS*) on a descriptive level, coding characteristics of: (a) study design and population characteristics (e.g., publication date; region; sample age, gender and occupation; research design); (b) the elements of organizational climate or culture studied (e.g., expectations, values); (c) the definition of OWH; (d) the specificity of the W-ICT (e.g., general, smartphone use); and (e) the type of psychological wellbeing studied (e.g., burnout, life satisfaction). In a second phase, data extraction examined the narrative findings of the included studies (*EB, ADS, LG*) with the aim of answering the research question “How do W-ICT (non-)use OWH-relevant elements of organizational culture (i.e., values, beliefs, and assumptions reflecting taken-for-granted ideas) and organizational climate (i.e., practices, procedures, rewarded or supported behaviors, and expectations) relate to three different levels of employee psychological wellbeing?” Data extraction was double-checked by a second coder (*EB, ADS*) in all cases. Full agreement was reached during data extraction. This relationship was analyzed across the three levels of wellbeing—facet, domain, and context-free wellbeing. Notably, while the study explicitly focuses on cultural and climate-related elements of W-ICT OWH, factors unrelated to W-ICT culture or climate (e.g., segmentation preferences) were only included if they altered the nature of the observed relationships (e.g., as moderators), rather than merely strengthening or weakening them.

2.5 Assessment of risk of bias

Tools to assess risk of bias differed by study design. Quantitative observational studies were evaluated using the National Institutes of Health (NIH) Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies (National Heart, Lung, and Blood Institute, 2021). For intervention studies, the Quality Assessment Tool for Quantitative Studies developed by the Effective Public Health Practice Project was used (Effective Public Health Practice Project, 2025). Qualitative studies were appraised with the tool by Hawker et al. (2002), which enables systematic assessment across diverse data types. Cut-off scores were used in accordance with NIH guidelines (Lorenc et al., 2014). Assessment of risk of bias was performed by two independent researchers (*EB and ADS* for quantitative studies; *LG and EB or ADS* for qualitative studies), discrepancies were discussed in the team of authors until consensus was reached.

3 Results

3.1 Study selection and characteristics

The total search for the overarching review yielded 85,354 records. After duplicate removal, 47,416 papers remained and were screened based on titles and abstracts. Of these, 940 full-text articles were assessed for eligibility. Thirty-five papers originally met the inclusion criteria. However, eleven papers were excluded at the full-text screening stage because, although they addressed W-ICT (non-) use OWH, climate/culture, and psychological wellbeing, they did not examine these within an integrated

analysis (Barber and Santuzzi, 2015; Cheng et al., 2022; Dong et al., 2022; Ninaus et al., 2015; Nöhammer and Stichlberger, 2019; Nurmi and Hinds, 2020; Peng et al., 2022; Reinke and Gerlach, 2021; Sayah, 2013; Sinha and Laghate, 2023; Wu et al., 2020). The final sample included 24 papers ($k = 24$), with 25 studies ($k = 25$; two studies in Heissler et al., 2024). The study selection process is summarized in the PRISMA flow chart (Figure 1).

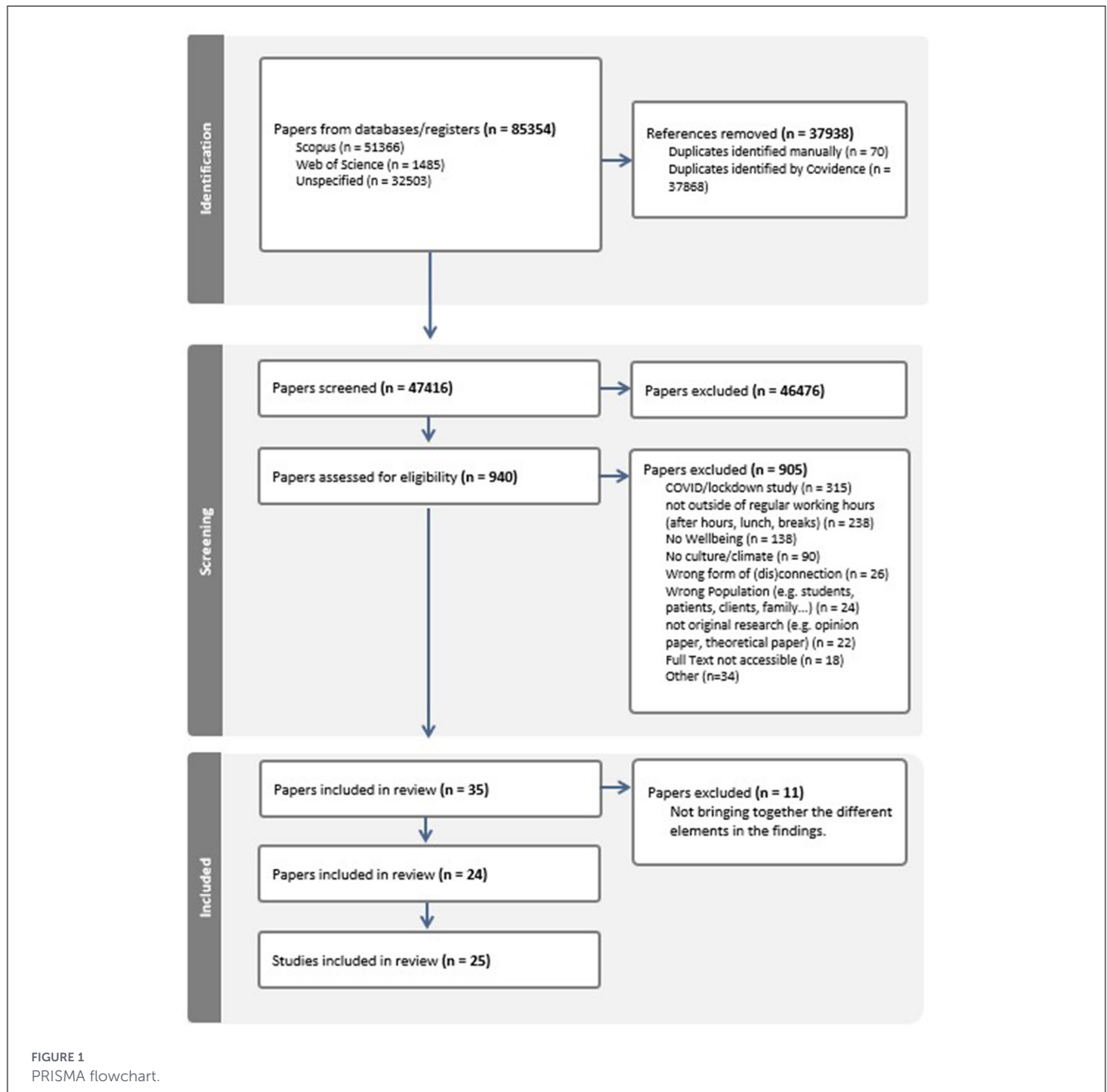
The earliest papers date back to 2012. Four papers were published between 2012 and 2015 (Day et al., 2012; Derks and Bakker, 2014; Grant et al., 2013; Yun et al., 2012), four between 2016 and 2019 (Gadeyne et al., 2018; Obushenkova et al., 2018; Park et al., 2020; Son and Chen, 2018) and sixteen papers were published since 2020 (Belkin et al., 2020; Bisht et al., 2023; Charalampous et al., 2022; Cheung et al., 2022; Farivar et al., 2024; Hasan et al., 2021; Heissler et al., 2024; Li et al., 2024; Richards et al., 2023; Scaramuzzino and Martinell Barfoed, 2023; Scheepers et al., 2022; Storch and Juarez-Paz, 2022; Tarafdar and Saunders, 2022; Valta and Maier, 2022; Wang et al., 2023; Zhang et al., 2024). The studies show a wide geographic spread across continents, with the exception of Africa and South America that are not represented in these papers. Most studies were conducted in Europe ($k = 11$), followed by Asia ($k = 7$), North America ($k = 4$), and Australia and New-Zealand ($k = 3$). Cross-sectional survey designs ($k = 10$) and qualitative interview studies ($k = 8$) were most prevalent. Other methodological approaches included intensive longitudinal studies ($k = 5$), mixed-method designs combining surveys and interviews ($k = 2$) and a quasi-experimental single-group pretest posttest design ($k = 1$; Table 1). Most studies were of good methodological quality with low risk of bias ($k = 15$). Eight had a fair methodological quality rating (Belkin et al., 2020; Bisht et al., 2023; Obushenkova et al., 2018; Richards et al., 2023; Scaramuzzino and Martinell Barfoed, 2023; Storch and Juarez-Paz, 2022; Valta and Maier, 2022 for the qualitative part; Wang et al., 2023), two had a weak methodological quality rating (Heissler et al., 2024, study 2; Valta and Maier, 2022 for the quantitative part).

The mean sample size across all quantitative studies was $n = 331.7$ ($SD = 253.5$) and $n = 23.7$ ($SD = 11.4$) for qualitative studies. The mean age, averaged across studies where this info was available, was $M = 35.9$ ($SD = 7.3$). On average, 64.3% of participants were female (weighed by study sample size). Most studies considered W-ICT (non-)use in general ($k = 15$), whereas some specifically studied smartphone use ($k = 5$), mobile devices ($k = 3$), smartphone and laptop/PC use ($k = 1$), or e-mail ($k = 1$). The target population included a wide variety of types of professions and industries (e.g., teachers, academics, social workers, blue-collar workers, managers, employees in IT and finance).

3.2 Overall descriptives of the focal concepts

3.2.1 Elements of organizational culture and climate related to W-ICT (non-) use OWH

Despite not aiming to make an *a priori* distinction between culture and climate in our inclusion criteria, a first finding is that all included studies only addressed dimensions of climate



(e.g., expectations, practices, supported and rewarded behavior, and procedures). Based on our results, we can therefore not draw any direct conclusion on organizational culture in relation to wellbeing. However, given the reinforcing relations between climate and culture, and that climate may even act as the more visible and measurable part via which culture manifests itself, we will refer to the findings in the results and discussion as organizational elements as an overarching term. It is however important to note that these are directly derived only from organizational climate dimensions.

Overall, studies examined the following elements: expectations ($k = 14$), reflecting perceived supervisor and organizational requirements of availability and responsiveness OWH; practices ($k = 8$), referring to shared organizational actions that influence (dis)connectivity OWH; supported and rewarded behavior ($k = 6$),

capturing the extent to which connectivity or disconnection is encouraged, valued, or reinforced within the organization; and procedures ($k = 1$), referring to formal rules, guidelines, or policies regarding W-ICT OWH (Table 2). A variety of measures were used to assess these organizational elements, with the most frequently used ($k = 6$) the ICT Demands Scale (Day et al., 2012) and the scale on segmentation culture/supply/norm ($k = 4$) (Kreiner, 2006).

3.2.2 Wellbeing

Facet-specific wellbeing appeared in four studies, covering technostress ($k = 3$) and satisfaction with ICT communication ($k = 1$). Regarding domain-specific wellbeing ($k = 26$), work-related wellbeing was most commonly investigated ($k = 25$),

TABLE 1 Descriptive information on included studies.

Authors	Country	Study design	Sample size	% Female M _{age} + SD	Target population	Digital device	Organizational climate or culture measure on W-ICT OWH	Wellbeing measure	Main findings	Methodological quality rating
Belkin et al. (2020)	United States	Cross-sectional online survey	<i>n</i> = 563	36.0% NR	Working adults from various industries	E-mail	Organizational expectations for e-mail monitoring after working hours: a single five-point Likert item “In this company, it is expected that people will read and act on email outside of working hours”	Work detachment during nonwork time (<i>domain</i>): four-item scale by Sonnentag and Fritz (2007) Emotional exhaustion (<i>domain</i>): MBI subscale Work-life balance (<i>domain</i>): five-item scale by Allen et al. (2010)	Higher organizational expectations predicted lower work detachment ($\beta = -0.45, p < 0.01$) and higher emotional exhaustion ($\beta = 0.20, p < 0.01$). Higher organizational expectations predicted higher emotional exhaustion both directly, and indirectly via lower work detachment [point estimate = 0.08; 95% CI = (0.02, 0.13)]. Higher organizational expectations also predicted lower work-life balance ($\beta = -0.11, p < 0.05$), both directly, as well as indirectly via lower detachment [point estimate = 0.08; 95% CI = (0.13, 0.0)]. and higher emotional exhaustion [point estimate = 0.11; 95% CI = (0.18, 0.05)].	Fair

(Continued)

TABLE 1 (Continued)

Authors	Country	Study design	Sample size	% Female M _{age} + SD	Target population	Digital device	Organizational climate or culture measure on W-ICT OWH	Wellbeing measure	Main findings	Methodological quality rating
Bisht et al. (2023)	India	Individual interviews; cross-sectional survey	<i>n</i> = 17	23.5% M = 26.8 ± 2.3	Workers in microfinance industry in India	Mobile devices	NR	NR	Although digital media were welcomed as a positive aspect of their work (70% of participants saw a positive impact of digital mobile technology on work-life balance), it had also changed managerial expectations on extended working hours, “working 24/7,” invading their private life after work hours, which negatively impacted their work-life balance. WhatsApp and calls are mentioned as particularly invasive, and when there is no response, there is often an escalation by using other technological media.	Fair (qualita-tive) Fair (quantita-tive)
Charalampous et al. (2022)	United Kingdom	Semi-structured individual interviews	<i>n</i> = 40	42.5% M = 46.9 ± 8.4	Workers in an IT organization	NR	Open-ended questions probed into enablers and obstacles to detachment from work	Questions elicited information about five wellbeing dimensions (domain) declared by Van Horn et al.’s (2004) model of wellbeing at work: affective,	To some, especially those higher up in positions, having the autonomy to choose when and where to work contributed to their wellbeing; organizational culture	Good

(Continued)

TABLE 1 (Continued)

Authors	Country	Study design	Sample size	% Female M _{age} + SD	Target population	Digital device	Organizational climate or culture measure on W-ICT OWH	Wellbeing measure	Main findings	Methodological quality rating
							psychosomatic, cognitive, social and professional wellbeing	was considered a major contributor to this autonomy. Switching off after work could be facilitated by remote work, but role modeling by team leaders, to avoid spending more hours of work or outside of regular working hours, was important to avoid an inability to detach from work		
Cheung et al. (2022)	China	Intensive longitudinal survey	<i>n</i> = 399	49.3% M = 37.0 ± 9.4	Full-time workers, residing in the US	Smart-phone	Organizational norm of connectivity: four-item scale developed by Richardson and Benbunan-Fich (2011)	Emotional exhaustion (domain): a new six-item five-point Likert scale, measured daily in a morning diary	Organizational norm of connectivity only predicted emotional exhaustion among those who were high on smartphone use outside of work and low on workaholism (<i>b</i> = 0.36, <i>p</i> = 0.004), but not among those high on workaholism (<i>b</i> = −0.15, <i>p</i> = 0.20)	Good
Day et al. (2012)	Canada	Cross-sectional online survey	<i>n</i> = 258	52.7% M = 34.9 ± 9.4	Workers in a random sample of occupations	NR	ICT demands: eight-item ICT Demands Scale (study 1) Only subscale 1 “response expectation” and 2	ICT perceived stress (facet): A seven-item scale based on the general Perceived Stress Scale (Day and Ziemer, 2003)	Response expectations correlated significantly with higher ICT stress (<i>r</i> = 0.18, <i>p</i> < 0.001), whereas 24/7 availability was	Good

(Continued)

TABLE 1 (Continued)

Authors	Country	Study design	Sample size	% Female M _{age} + SD	Target population	Digital device	Organizational climate or culture measure on W-ICT OWH	Wellbeing measure	Main findings	Methodological quality rating
							“24/7 availability” refer to outside of working-hours ICT use, which is otherwise not explicitly the aim of this study. For the purpose of our review, only these subscales will be examined	Strain (context-free): 20-item Symptoms Checklist (Bartone et al., 1989) Burnout (domain): 16-item Maslach Burnout Inventory—General Survey (Maslach et al., 1996)	24/7 availability was a significant predictor of lower efficacy (but not of other burnout dimensions), when considering all ICT Demands subscales in a regression analysis ($\beta = 0.18, p < 0.05$), but response expectation was not a significant predictor of any mental health outcome, when considered together with other ICT demands subscales (beta's ranging from – 0.04 to 0.09, all non-significant)	
Derks et al. (2014)	The Netherlands	Intensive longitudinal survey	$n = 70$	73% $M = 35.8 \pm 7.6$	Employees at three German companies (consultancy, energy firm)	Smart-phone	Perceived segmentation norm: 4 seven-point Likert segmentation supply items of Kreiner's scale (2006) Daily smartphone use after working hours: four-item intensive smartphone-use scale by Derks and Bakker (2014) adjusted for daily measures	Daily work-related exhaustion (domain): four-items of the subscale of the Maslach Burnout Inventory (MBI), adjusted by Byrne (1991) for daily measurement. Daily psychological detachment from work (domain): four-item psychological detachment subscale of	Employees who perceive a high segmentation norm, experience less psychological detachment on days that they use their smartphone more intensively ($\gamma = 0.264, SE = 0.154, t = 1.71, p < 0.05$). This relation was only significant at the daily level, but not	Good

(Continued)

TABLE 1 (Continued)

Authors	Country	Study design	Sample size	% Female M _{age} + SD	Target population	Digital device	Organizational climate or culture measure on W-ICT OWH	Wellbeing measure	Main findings	Methodological quality rating
								the Recovery Experiences Questionnaire (Sonnentag and Fritz, 2007)	at the person level ($\beta = 0.418$, SE = 0.24; CI = 1.318, 0.342).	
Farivar et al. (2024)	Australia	Semi-structured individual interviews	$n = 28$	57.1% NR	Australian academics	NR	Open-ended questions on factors influencing boundary management behaviors and their use of ICTs at work and in nonwork domains, such as probing for norms , political, cultural , institutional or philosophical barriers; strategies on how to handle constant connectivity.	No <i>a priori</i> concept operationalization of wellbeing	Some academics feel empowered by the flexibility they have in institutional practices for working where and when they want. However, another theme in participants' experiences is that colleagues and students expect them to be constantly connected and response, even after working hours, which raises work pressure, stress and problems in work-life balance. These informal norms are often counter to what is explicitly mentioned as self-care by maintaining a good work-life balance. Seeing what other colleagues share online or on social media as achievements also raises stress and fear for not having done enough	Good

(Continued)

TABLE 1 (Continued)

Authors	Country	Study design	Sample size	% Female M _{age} + SD	Target population	Digital device	Organizational climate or culture measure on W-ICT OWH	Wellbeing measure	Main findings	Methodological quality rating
Gadeyne et al. (2018)	Belgium	Cross-sectional online survey	<i>n</i> = 467	85% M = 36.8 ± 4.9	Working parents with at least one child under the age of twelve	Smart-phone; PC/lap-top	Integration norms: four-item scale of by Kreiner (2006) Work demands: three-item scale of Van Veldhoven et al. (2002) Work-related smartphone use outside work hours and work-related PC/laptop use outside work hours: each with two indicators (how often, how many minutes)	Work-to-home conflict (domain): a six-item version of the work-to-home conflict scale of Carlson et al. (2000)	PC/laptop use, but not smartphone use, outside of working hours increases (time-based) work-to-home conflict ($\beta = 0.17, p < 0.01$). This is less or not the case for people who have a high preference for blurred boundaries ($\beta = 0.14, p < 0.05$ for time-based and $\beta = 0.18, p < 0.01$ for strain-based). A similar three-way interaction is found for PC/laptop use OWH, integration preference and work demands (Time-based conflict: $\beta = 0.11, p < 0.05$; Strain-based conflict: $\beta = 0.20, p < 0.01$). Work-to-home conflict is more severe when there is a high integration preference and high integration norms than when there is a high integration preference and low integration norms for employees who frequently make use of	Good

(Continued)

TABLE 1 (Continued)

Authors	Country	Study design	Sample size	% Female M _{age} + SD	Target population	Digital device	Organizational climate or culture measure on W-ICT OWH	Wellbeing measure	Main findings	Methodological quality rating
									their PC/laptop for work-related issues outside work hours.	
Grant et al. (2013)	United Kingdom	Semi-structured individual interviews	<i>n</i> = 11	63.4% NR	E-working staff at companies known for their e-working practices	NR	Several organizational aspects are mentioned in the introduction, such as trust from the manager, job context, and employer expectations, but no explicit conceptualization of organizational culture or climate was mentioned in the method section	Questions on “E-Work life” (<i>domain</i>) explored the relationship between work-life balance and e-working both positive and negative aspects. Conceptualisation of wellbeing included both mental wellbeing and physiological wellbeing	Work culture can impact the expectation to work long hours. Remote workers tended to prioritize work over family issues, if it didn’t qualify as a family crisis. Those in lower or more operational jobs felt more pressure to be responsive and constantly connected after working hours. Some companies monitor the availability of their remote employees, especially for lower positions this is often done by automatic monitoring, quantified by number of emails responded to, or by a superior, rather than self-monitored. Good communication and social support from colleagues, and adaptation strategies, are mentioned as important to protect wellbeing.	Good

(Continued)

TABLE 1 (Continued)

Authors	Country	Study design	Sample size	% Female M _{age} + SD	Target population	Digital device	Organizational climate or culture measure on W-ICT OWH	Wellbeing measure	Main findings	Methodological quality rating
Hasan et al. (2021)	Australia	Semi-structured individual interviews	<i>n</i> = 27	NR NR	Construction management professionals	Mobile devices	Open-ended question on “What kind of mobile ICT is used in your organization,” but no specific question up front on organizational climate or culture, this aspect appears in the themes that are derived from the participants’ responses, including implicit availability expectations	Open-ended question on “How does your non-work hours use of mobile ICT influence your family or private life ” (<i>domain</i>)	Even though there are usually no formal rules, many mention there are implicit rules for W-ICT OWH. Implicit expectations are higher for (senior) management to remain connected that for other workers with less decision responsibility, and expectations can also depend on the project. The majority of participants who are in a permeable boundary condition experience a negative impact on work-life balance, experience frustration and stress, that could lead to burnout, but also experience benefits for their work planning. Those in rigid boundary conditions do not experience a negative impact on work-life balance but also none of the benefits on work planning. Those in flexible boundary	Good

(Continued)

TABLE 1 (Continued)

Authors	Country	Study design	Sample size	% Female M _{age} + SD	Target population	Digital device	Organizational climate or culture measure on W-ICT OWH	Wellbeing measure	Main findings	Methodological quality rating
									conditions were able to benefit from connectivity whilst limiting its negative impact.	
Heissler et al. (2024) ; study 1	Germany	Cross-sectional online survey	$n = 235$	51.9% $M = 37.8 \pm 11.6$	Knowledge workers	NR	Availability expectations: ICT Demands Scale (Day et al., 2012) Availability ambiguity: measured with a single five-point Likert item of estimated certainty for each item of the ICT Demands Scale	Emotional exhaustion (domain): (MBI-GS-D) (Büssing and Glaser, 1998) Work-home interference (domain; SWING) (Geurts et al., 2005) Detachment (domain): recovery experience questionnaire (Sonnentag and Fritz, 2007)	Availability expectations predicted higher levels of emotional exhaustion ($\beta = 0.30$, $SE = 0.07$, $p < 0.001$), work-home interference ($\beta = 0.44$, $SE = 0.06$, $p < 0.001$) and lower levels of detachment ($\beta = -0.43$, $SE = 0.07$, $p < 0.001$). Availability ambiguity also predicted higher levels of emotional exhaustion ($\beta = 0.15$, $SE = 0.08$, $p < 0.05$), work-home interference ($\beta = 0.25$, $SE = 0.07$, $p < 0.001$) and lower levels of detachment ($\beta = -0.23$, $SE = 0.07$, $p < 0.001$), beyond the influence of availability expectations.	Good

(Continued)

TABLE 1 (Continued)

Authors	Country	Study design	Sample size	% Female M _{age} + SD	Target population	Digital device	Organizational climate or culture measure on W-ICT OWH	Wellbeing measure	Main findings	Methodological quality rating
Heissler et al. (2024) ; study 2	Germany	Single group pretest posttest design	$n = 62$ T1; $n = 33$ T2	54.8% $M = 44.7 \pm 10.3$	Subordinates of supervisors who received training between pre- and post-test measurement	NR	Availability expectations: ICT Demands Scale (Day et al., 2012) Availability ambiguity: measured with a single five-point Likert item of estimated certainty for each item of the ICT Demands Scale	Emotional exhaustion (domain): MBI-GS-D (Büssing and Glaser, 1998) Work-home interference (domain): SWING (Geurts et al., 2005) Detachment from work (domain): Recovery experience questionnaire (Sonnentag and Fritz, 2007) Work-life balance (domain): trier short scale for the measurement of work-life balance (TKS-WLB) (Syrek et al., 2011)	The supervisor training of four half-days on ICT communication decreased availability ambiguity ($\chi^2 = 6.22$, $p < 0.05$) but not availability expectations ($\chi^2 = 0.94$, $p = \text{ns}$). No significant effects were found on wellbeing measures ($\chi^2 = 0.12$ for detachment, $\chi^2 = 1.92$ for work-life balance, $\chi^2 = 3.23$ for emotional exhaustion).	Weak
Li et al. (2024)	China	Cross-sectional online survey	$n = 502$	77.9% $M = 23.2 \pm 0.2$	Employees from the media industry	Not specified	ICT demands: Three-item scale adapted from a subscale of the ICT Demands Scale (Park et al., 2020)	Online vigilance (facet): measured by nine items adapted from Online Vigilance Scale (OVS) (Reinecke et al., 2018) Perceived stress (context-free): four-item scale adapted from Cohen's Global	ICT demands positively predicted online vigilance ($\beta = 0.51$, $p < 0.001$), which in its turn predicted higher perceived stress ($\beta = 0.31$, $p < 0.001$) and this predicted lower subjective wellbeing ($\beta = -0.19$, $p = 0.01$).	Good

(Continued)

TABLE 1 (Continued)

Authors	Country	Study design	Sample size	% Female M _{age} + SD	Target population	Digital device	Organizational climate or culture measure on W-ICT OWH	Wellbeing measure	Main findings	Methodological quality rating
								Measure of Perceived Stress (Cohen et al., 1983) Subjective Wellbeing (context-free): five items adapted from The Warwick-Edinburgh mental wellbeing scale (WEMWBS) (Tennant et al., 2007)	The mediation effect was statistically significant [$\beta = -0.03$, $p = 0.01$, 95% CI (-0.05 , -0.01)]. A moderation effect of using disconnection strategies was found between stress and wellbeing: under high perceived stress, mental wellbeing was higher when disconnection strategies were used to a higher extent, but lower when stress was high and a low level of disconnection strategies were used (TRd = 39.46, $p < 0.001$; $\beta = 0.32$, $p = 0.001$).	
Obushenkova et al. (2018)	New Zealand	Semi-structured individual interviews	$n = 28$	42.8% NR	20 employees and eight managers, from four manufacturing, telecom, public services and government organizations	Smartphone	Open-ended questions on psychological contract expectations in terms of connectivity	Open-ended questions on “ connectivity outcomes ” (<i>facet</i>)	Much of the connectivity expectations are implicit, and there may be a mismatch between employee and manager, both overestimating how much they think the other expects them to be accessible at all times. Some of the negative outcomes experienced are not	Fair

(Continued)

TABLE 1 (Continued)

Authors	Country	Study design	Sample size	% Female M _{age} + SD	Target population	Digital device	Organizational climate or culture measure on W-ICT OWH	Wellbeing measure	Main findings	Methodological quality rating
									being able to switch off, getting a break, and negatively impacting the time to enjoy together with their family.	
Park et al. (2020)	United States	Cross-sectional online survey Intensive longitudinal study with weekly diaries during 5 weeks	<i>n</i> = 546	93.2% M = 41.8 ± 10.9	Primary school teachers	NR	Measured in baseline survey: Technological boundary tactic: one item “do you get work-related e-mails on your cellular phone” Yes/no Parent’s boundary expectations for after-work communication: four-item scale, adapted from Piszczek’s (2017) Principal’s work-family support: four-item scale adapted from Hammer et al.’s (2013) Measured in weekly diaries: ICT demands: four-item subscale of ICT demands by Day et al. (2012)	Measured in baseline survey: Boundary control (domain): three-item scale by Kossek et al. (2012) . Measured in weekly diaries: Cognitive strain (domain): four-item scale on negative work rumination from Frone’s (2015) Affective strain (context-free): 10 negative affect descriptors from PANAS (Watson et al., 1988) Psychosomatic strain (context-free): four items on insomnia from (Jenkins et al., 1988, 1996)	ICT demands were positively predicted by parent’s expectations ($\gamma = 0.46, p < 0.01$), and negatively by principal’s work-family support ($\gamma = -0.05, p < 0.05$). Higher ICT demands predicted higher strain on all three dimensions [negative work rumination ($\gamma = 0.16, p < 0.01$), negative affect ($\gamma = 0.14, p < 0.01$), and insomnia ($\gamma = 0.13, p < 0.01$)]. Boundary control moderated the relation between ICT	Good

(Continued)

TABLE 1 (Continued)

Authors	Country	Study design	Sample size	% Female M _{age} + SD	Target population	Digital device	Organizational climate or culture measure on W-ICT OWH	Wellbeing measure	Main findings	Methodological quality rating
									demands and cognitive strain (when boundary control was low, the relation between ICT demands and cognitive strain was positive, but non-significant when boundary control was high; $\gamma = -0.08$, $p < 0.05$), but not on negative affect ($\gamma = 0.03$, ns) and insomnia ($\gamma = -0.03$, ns). Moreover, an indirect moderation path showed that when parents' expectations were low [estimate = 0.016, 95% CI of (0.003, 0.033)] and principal's support was high [estimate = -0.009 , 95% CI of (-0.021 , -0.001)], boundary control was high, and this moderated the relation between ICT demands and cognitive strain.	

(Continued)

TABLE 1 (Continued)

Authors	Country	Study design	Sample size	% Female M _{age} + SD	Target population	Digital device	Organizational climate or culture measure on W-ICT OWH	Wellbeing measure	Main findings	Methodological quality rating
Richards et al. (2023)	United Kingdom	Cross-sectional online survey	<i>n</i> = 959	68.1% NR	UK-based managerial and professional employees over 16 years of age, with experience of leavism	NR	External drivers/employer pressure for leavism: self-constructed 10-item scale Open-ended question (not provided) where people could share their views and experiences on leavism. Based on responses, a theme of work intensification and ideal worker norms was defined	Open-ended question (not provided) where people could share their views and experiences on leavism. Based on responses, a theme of “sustainability” was defined, including difficulty to switch off, work-family life disruption (domain), impact on mental and physical health (context-free)	More than half (52.9%) of participants reported the ease of staying in touch with work via ICT as a driver of leavism. Organizational pressure was the most important driver of leavism (ranging from 44.2 to 89.9%), as well as feeling insecure about their work if they do not engage in leavism (42.3%). Nearly two thirds reported they felt leavism had a negative impact on their wellbeing (61.1% negative or very negative; 86.7% slightly, negative or very negative).	Fair
Scaramuzzino and Martinell Barfoed (2023)	Sweden	Cross-sectional online survey	<i>n</i> = 523	87.3% NR	Swedish social workers who are member of the Union for Professionals	NR	Expectations for availability: single item “I feel that there are expectations that I will be available during my leisure time (e.g., that I should read and respond to work messages)” Collegial support: single item “I receive help, support, and encouragement from	Technostress (facet): single item “I experience ‘technostress’ at work (i.e., stress) caused by different types of technology, such as administrative programmes not working properly, a full inbox, and emails that I do not have time to answer”	The expectations to be available for W-ICT OWH positively predicted technostress (Exp(B) = 1.897, SE = 0.320, <i>p</i> < 0.05). Technostress was lower when collegial support was higher (Exp(B) = 0.164, SE = 0.736, <i>p</i> < 0.05). Participants experienced boundary	Fair

(Continued)

TABLE 1 (Continued)

Authors	Country	Study design	Sample size	% Female M _{age} + SD	Target population	Digital device	Organizational climate or culture measure on W-ICT OWH	Wellbeing measure	Main findings	Methodological quality rating
							my colleagues when I encounter problems”	Open-ended question: If you are experiencing technostress, what does the technostress mainly consist of?	blurring because on top of a high workload comes the expectation for immediate answers, whereas the technological solutions for doing social work OWH are considered inadequate (open-ended question).	
Scheepers et al. (2022)	Germany	Semi-structured individual interviews	<i>n</i> = 26	11.5% M = 46.0 ± 8	Managers and employees in the craft sector (sanitary, heating, air-conditio-ning)	NR	Open-ended questions: What are measures related to your health that would support you in the implementation of new work processes (created by digitalization)? From whom would you like support in the implementation of digitalization processes? What does healthy work in the age of digitalization look like in your eyes at your workplace?	Open-ended questions on “ technostress ” (<i>facet</i>): How does digitalization affect your health and wellbeing? What positive effects does digitalization bring to you in relation to your health?	While digitalization reduced stress during working hours for some despite complexity of technology, it increased stress outside working hours due to constant availability expectation from customers and not being able to switch off. Employees and managers mentioned a need for clear communication strategies to avoid an “always on culture,” e.g. not communicate mobile phone numbers to customers, or machines that automatically shut down at certain times to create digital breaks.	Good

(Continued)

TABLE 1 (Continued)

Authors	Country	Study design	Sample size	% Female M _{age} + SD	Target population	Digital device	Organizational climate or culture measure on W-ICT OWH	Wellbeing measure	Main findings	Methodological quality rating
Son and Chen (2018)	United States	Cross-sectional online survey	<i>n</i> = 462	51.7% NR	Taiwanese full-time workers aged 18–54 years	Smartphone	Work-life segmentation culture: four-item, five-point scale (Yun et al., 2012)	Time- and strain-based work interferences with leisure (WIL, domain): seven-item scale of time-based WIL and eight-item scale of strain-based WIL, both measured on a 10-point scale (Tsauro et al., 2012) Life satisfaction (context-free): five-item seven-point satisfaction with life scale (Diener et al., 1985) Perceived work stress (domain): single item on a 10-point scale (Sonnentag and Fritz, 2007)	Segmentation culture reduced time-based work interference with leisure (estimate = −0.15, <i>p</i> < 0.001), which predicted strain-based work interference with leisure (estimate = −0.65, <i>p</i> < 0.001; full mediation). This in turn positively predicted work stress (estimate = 0.46, <i>p</i> < 0.001) which negatively predicted satisfaction with life (estimate = −0.16, <i>p</i> < 0.01; full mediation). Segmentation culture also had a direct negative association with work stress (estimate = −0.18, <i>p</i> < 0.001) and positive association with satisfaction with life (estimate = 0.12, <i>p</i> < 0.05). The effect of segmentation culture on work stress was greater for older workers (Diff χ = 49.50, Diff df 1, <i>p</i> < 0.001;	Good

(Continued)

TABLE 1 (Continued)

Authors	Country	Study design	Sample size	% Female M _{age} + SD	Target population	Digital device	Organizational climate or culture measure on W-ICT OWH	Wellbeing measure	Main findings	Methodological quality rating
									β younger = -0.06 , β older = -0.26).	
Storch and Juarez-Paz (2022)	United States	Semi-structured individual interviews	$n = 32$	59.3% NR	Managers (knowledge workers)	Mobile devices	NR	NR	Using the smartphone for work outside of working hours was considered as impacting work/life balance, but by some others as a necessity of the job, either to get a promotion, to take control of the flow of messages and work, or by the nature of the job. The perception was that if the smartphone is provided by the company, there is the implicit expectation that one would be available at all times.	Fair
Tarafdar and Saunders (2022)	United States	Semi-structured individual interviews	$n = 28$	NR NR	UK-based blue-collar remote and mobile workers in construction and telecom	NR	Open-ended question: “How do conditions in your work environment—work policies, norms, other resources, etc., help you in handling the challenges?”	Open-ended questions (<i>domain</i>): “Under what conditions do you feel unable to meet/overwhelmed by the challenges? How do you feel when you are unable to meet them? How do the challenges affect your satisfaction and engagement at work?”	Some reported sending work-related emails from home because of limited ability to do so on their working site	Fair

(Continued)

TABLE 1 (Continued)

Authors	Country	Study design	Sample size	% Female $M_{age} + SD$	Target population	Digital device	Organizational climate or culture measure on W-ICT OWH	Wellbeing measure	Main findings	Methodological quality rating
Valta and Maier (2022)	Germany	Cross-sectional survey Semi-structured individual interviews	$n = 102$	59.8% $M = 29.4 \pm 7.8$	NR	NR	Digital nudging to reduce techno-stress: perceived usefulness (no information provided on the measure)	Technostress (<i>facet</i>): Techno-overload and techno-invasion (no information provided on the measure)	Default settings (ranging from 41 to 75%), reminders (ranging from 29 to 69%), expecting error (ranging from 21 to 60%) and giving feedback (ranging from 45 to 67%) are digital nudges that are considered useful by at least 60% of participants for at least one source of technostress.	Weak
Wang et al. (2023)	China	Intensive longitudinal survey with daily diary during five working days	$n = 88$	58.0% $M = 28.7 \pm 2.2$	Full-time employees in Chinese enterprises and public institutions	NR	Segmentation supply: four-item scale by Kreiner (2006) Work connectivity behavior after hours: scale that measures frequency and duration (Richardson and Thompson, 2012)	Psychological detachment (domain): four-item scale by Sonnentag and Fritz (2007)	Segmentation preference has no direct effect on psychological detachment at interindividual level ($\gamma = 0.03$, $SE = 0.05$, $t = 0.50$), but the interaction between segmentation supply and segmentation preference predicts psychological detachment [indirect effect: -0.12 , 95% CI (-0.196 , -0.049)], which in turn influences work connectivity behavior after hours ($\gamma = -0.13$, $p < 0.01$).	Fair

(Continued)

TABLE 1 (Continued)

Authors	Country	Study design	Sample size	% Female M _{age} + SD	Target population	Digital device	Organizational climate or culture measure on W-ICT OWH	Wellbeing measure	Main findings	Methodological quality rating
									Under low segmentation supply, those with higher segmentation preferences will have lower psychological detachment and higher work connectivity behavior after working hours than those with low segmentation preferences, whereas under high segmentation supply, those with higher segmentation preferences will have higher psychological detachment and lower work connectivity behaviors after hours than those with low segmentation preferences	
Yun et al. (2012)	South Korea	Cross-sectional online survey	<i>n</i> = 300	35.0% NR	Office-home smartphone users	Smart-phone	Segmentation culture: four-item scale by Kreiner (2006)	Work-to-life conflict due to office-home smartphone (domain): five-item scale by Ahuja et al. (2007) Job stress (domain): six-item scale (Anderson et al., 2002)	Segmentation culture reduced work-to-life conflict (estimate = −0.19, <i>p</i> < 0.001). Lower work-to-life conflict predicted lower job stress (estimate = 0.54,	Good

(Continued)

TABLE 1 (Continued)

Authors	Country	Study design	Sample size	% Female M _{age} + SD	Target population	Digital device	Organizational climate or culture measure on W-ICT OWH	Wellbeing measure	Main findings	Methodological quality rating
								User resistance (<i>domain</i>): four-item scale (Kim and Kankanhalli, 2009)	$p < 0.001$) and lower user resistance to OHS (estimate = 0.23, $p < 0.001$). There was no direct effect of segmentation preferences on work-to-life conflict (estimate not reported).	
Zhang et al. (2024)	China	Intensive longitudinal survey with daily diary during 10 weeks	$n = 101$	55.4% $M = 32.5 \pm 3.4$	Full-time white-collar workers in a Chinese high-tech company who are married	NR	ICT availability demand : four-item scale by Day et al. (2012)	Work interfering with family (<i>domain</i>): four-item scale (Grzywacz and Marks, 1999) Family satisfaction (<i>domain</i>): three-items adapted from the job satisfaction scale by Williams and Anderson (1991) Family undermining (<i>domain</i>): five items adapted from Restubog et al. (2011) ICT control (<i>facet</i>): six-item scale by Pirkkalainen et al. (2019)	Higher ICT availability demand predicted higher work interference with family ($\gamma = 0.09$, $SE = 0.04$, $p = 0.04$), which in turn predicted lower family satisfaction ($\gamma = 0.38$, $SE = 0.06$, $p < 0.001$) and higher family undermining ($\gamma = 0.24$, $SE = 0.07$, $p < 0.001$). This effect only occurred when ICT control was low, and not when ICT control was high significant [Effect = 0.15, $SE = 0.07$, 95%CI = (0.30, 0.02)].	Good

NR, not reported.

TABLE 2 Number of studies addressing culture and climate types in relation to wellbeing (WB) types.

Type of wellbeing	Effect direction (positive = increasing; negative = reducing WB)	Methodological study quality	Moderators/mediators
Expectations: perceived supervisor and organizational requirements of availability and responsiveness OWH			
Facet wellbeing (<i>k</i> = 3)	<i>Quantitative studies (k = 3)</i>		
	Positive: 0/3		
	Neutral: 1/3	Good (<i>k</i> = 1)	No effect of response expectations
	Negative: 3/3	Fair (<i>k</i> = 1) to good (<i>k</i> = 2)	Stronger when expectations come specifically from supervisors. Not only expectations, but also ambiguity of expectations
Domain wellbeing (<i>k</i> = 12)	<i>Qualitative studies (k = 6)</i>		
	Positive: 0/6		
	Neutral: 0/6		
	Negative: 6/6	Fair (<i>k</i> = 3) to good (<i>k</i> = 3)	Psychological detachment, absence of clear policies, simplicity and social acceptability of messaging applications, having a work-smartphone were reported as mediators in the relation between availability expectations and wellbeing Boundary conditions (permeable, rigid, flexible) were perceived as moderators in the relation between W-ICT OWH use expectations and wellbeing
	<i>Quantitative studies (k = 6)</i>		
	Positive: 0/6		
	Neutral: 2/6	Weak (<i>k</i> = 1) to good (<i>k</i> = 1)	No effect of response expectations Training reduced ambiguity but did not impact expectations. No effect on wellbeing
	Negative: 6/6	Weak (<i>k</i> = 1), fair (<i>k</i> = 1), good (<i>k</i> = 4)	Boundary control moderated the relation between expectations and wellbeing Lower work detachment, higher emotional exhaustion, and work-family interference mediated the relation between expectations and wellbeing
	<i>Quantitative studies (k = 3)</i>		
	Positive: 0/2		
Context-free wellbeing (<i>k</i> = 3)	Neutral: 1/2	Good (<i>k</i> = 1)	
	Negative: 2/2	Good (<i>k</i> = 2)	Employees' level of disconnection and using disconnection strategies moderated the relation between expectations and wellbeing Increased online vigilance mediated the relation between expectations and wellbeing.
Practices: shared organizational actions that influence connectivity OWH			
Facet wellbeing (<i>k</i> = 1)	<i>Qualitative studies (k = 1)</i>		
	Positive: 0/1		
	Neutral: 0/1		
	Negative: 1/1	Fair (<i>k</i> = 1)	
	<i>Quantitative studies (k = 1)</i>		
	Positive: 0/1		
	Neutral: 0/1		
	Negative: 1/1	Weak (<i>k</i> = 1)	

(Continued)

TABLE 2 (Continued)

Type of wellbeing	Effect direction (positive = increasing; negative = reducing WB)	Methodological study quality	Moderators/mediators
Domain wellbeing ($k = 7$)	Qualitative studies ($k = 6$)		
	Positive: 3/6	Fair ($k = 1$) to good ($k = 2$)	W-ICT OWH may help to catch up on work and thus reduce work-related stress and increase detachment. Always-on practices may contribute to job satisfaction via organizational competitiveness
	Neutral: 0/6		
	Negative: 6/6		Higher when using company smartphones, lower when clear agreements are made on W-ICT use
	Quantitative studies ($k = 1$)	Fair ($k = 1$)	
	Positive: 0/1		
	Neutral: 0/1		
	Negative: 1/1		
Context-free wellbeing ($k = 1$)	Quantitative studies ($k = 1$)		
	Positive: 0/1		
	Neutral: 0/1		
	Negative: 1/1	Fair ($k = 1$)	
Supported and rewarded behavior: organizational endorsement and reinforcement of connectivity OWH			
Facet wellbeing ($k = 0$)			
Domain wellbeing ($k = 6$)	Quantitative studies ($k = 6$)		
	Positive: 0/6		
	Neutral: 1/6		No effect found of segmentation norms in the relation between W-ICT OWH and psychological detachment and exhaustion
	Negative: 5/6	Fair ($k = 1$) to good ($k = 4$)	No direct effect of segmentation preference on WB, but only in interaction with segmentation supply (moderator). Segmentation norm had a direct effect, regardless of segmentation preference, whereas organizational connectivity norms moderated the role of individual integration preferences in the relation between W-ICT use OWH and work-to-home conflict. Relation between organizational connectivity norms, W-ICT use OWH and emotional exhaustion was only found for those low on workaholism
Context-free wellbeing ($k = 1$)	Quantitative studies ($k = 1$)		
	Positive: 0/1		
	Neutral: 0/1		
	Negative: 1/1	Good ($k = 1$)	Segmentation norms were positively related to WB
Procedures: formal organizational policies, guidelines, or rules governing connectivity OWH			
Facet wellbeing ($k = 0$)			
Domain wellbeing ($k = 1$)	Qualitative studies ($k = 1$)		
	Positive: 0/1		
	Neutral: 0/1		
	Negative: 1/1	Fair ($k = 1$)	On-call duties impact WB, by leaving them feeling constantly on edge and disrupting rest
Context-free wellbeing ($k = 0$)			

including work-life conflict ($k = 13$), psychological detachment ($k = 7$), work stress ($k = 5$), emotional exhaustion ($k = 4$), burnout ($k = 4$), recovery ($k = 1$), harassment ($k = 1$), negative work rumination ($k = 1$), and job satisfaction ($k = 1$). Family-specific wellbeing was reported in only one study that focused on family satisfaction ($k = 1$). Context-free wellbeing was examined in four studies, including emotions ($k = 2$), general wellbeing ($k = 1$), and life satisfaction ($k = 1$). A variety of measures were used to assess wellbeing, with the most frequently used (subscales of) the Maslach Burnout Inventory ($k = 5$) (Maslach and Jackson, 1981) and the (psychological detachment subscale of the) Recovery Experience Questionnaire ($k = 4$) (Sonnentag and Fritz, 2007).

3.3 Expectations in the work context ($k = 14$)

3.3.1 Facet-specific wellbeing ($k = 3$)

Three studies examined facet-specific wellbeing in relation to expectations regarding W-ICT (non-) use OWH. When employees perceived that the work context in general expected them to remain available OWH, they reported higher levels of W-ICT stress in two cross-sectional studies (Day et al., 2012; Scaramuzzino and Martinell Barfoed, 2023). Similar patterns emerged when such expectations originated specifically from supervisors, which were cross-sectionally linked to lower satisfaction with ICT communication (Heissler et al., 2024). However, response expectations were not significant in predicting higher levels of W-ICT stress (Day et al., 2012).

Moreover, unclear or ambiguous supervisor expectations regarding availability were negatively associated with satisfaction with ICT communication (Heissler et al., 2024), above and beyond the effect of perceived supervisor expectations. The authors therefore concluded that uncertainty about what is expected regarding availability OWH represents a distinct and additive source of dissatisfaction for employees. These studies were of fair (Scaramuzzino and Martinell Barfoed, 2023) to good methodological quality (Day et al., 2012; Heissler et al., 2024).

3.3.2 Domain-specific wellbeing ($k = 12$)

Cross-sectional studies showed that perceived organizational expectations regarding OWH availability were associated with lower levels of psychological detachment and work-life balance, with increased emotional exhaustion (Belkin et al., 2020), and with a decrease in the professional efficacy component of burnout (Day et al., 2012), although expectations to respond were not a significant predictor of wellbeing. However, response expectations were not significant in predicting higher levels of burnout (Day et al., 2012). These studies were of fair (Belkin et al., 2020) to good methodological quality (Day et al., 2012). Moreover, such expectations were found to indirectly relate to higher emotional exhaustion through reduced psychological detachment (Belkin et al., 2020). A weekly diary study further revealed that during weeks when teachers faced higher availability expectations,

they experienced increased negative work rumination (Park et al., 2020). Notably, this association decreased when teachers more strongly controlled boundaries between their work and private life, which was encouraged by their perceived principals' work-family support. In another diary study, employees reported on a daily level that such expectations also crossed over to family outcomes, being linked to lower family satisfaction via greater work-life interference (Zhang et al., 2024). Again, these associations were influenced by the employee's boundary control: they only occurred when control was low, and not when ICT control was high. Both diary studies were of good methodological quality.

When availability expectations specifically originated from supervisors, they were cross-sectionally associated with higher emotional exhaustion, higher work-home interference, and lower psychological detachment among employees (Heissler et al., 2024). In this cross-sectional research, unclear or ambiguous supervisor expectations regarding availability were also negatively associated with psychological detachment and positively with emotional exhaustion and work-home interference (Heissler et al., 2024), above and beyond the effect of perceived supervisor expectations. This study was of good methodological quality. A quasi-experimental study reported in the same paper (Heissler et al., 2024), using supervisor training to reduce ambiguity and expectations of availability, reduced ambiguity but not expectations, and had no effect on employee wellbeing. This study, however, had a high risk of bias and a weak methodological rating.

Qualitative findings further elucidated the role of availability expectations. Remote e-workers perceived expected availability within the workplace as a key barrier to psychological detachment, as it prolonged their engagement with work-related devices and applications well beyond working hours (Charalampous et al., 2022). Academics described how constant connectivity through devices and communication channels fuels unspoken and unrealistic expectations from colleagues (and students) to respond at any time, intensifying work-life conflict (Farivar et al., 2024). Construction professionals (CP) indicated that, in their organization, they are expected to remain contactable during nonwork hours across most projects, even though this is not formally stipulated in their contracts. The absence of clear organizational policies and guidelines created ambiguity, while prevailing workplace expectations placed pressure on many CPs to remain contactable. As a result, the use of ICT during non-working hours negatively affected them, leading to poorer work-life balance, interruptions to personal life, increased work stress, and concerns about burnout. These relations appear to depend on whether people are in permeable (negative effect), rigid (no effect), or flexible (benefit from connectivity whilst also limiting their negative effect) boundary conditions (Hasan et al., 2021). Finally, employees who were provided with a work smartphone described how this fostered expectations that they remain connected to their managers, which in turn disrupted their work-life balance and led to work-related stress and irritation. All three studies were of good methodological quality.

The same pattern was observed for managers in relation to their subordinates (Obushenkova et al., 2018). This study also

showed that having a company phone is perceived to reinforce the expectation to remain available (Obushenkova et al., 2018). In line with this, a study focusing on mobile communication—regardless of using a company or private device—found that the simplicity and social acceptability of messaging applications (e.g., WhatsApp) contributed to the rapid emergence of organizational cultures characterized by pervasive availability (Bisht et al., 2023). In such contexts, branch managers were routinely contacted by their superiors OWH requesting additional work. This limited their ability to detach from work and created challenges for work–life balance. At the same time, these managers also reported engaging in similar practices themselves, contacting their subordinates OWH when deemed necessary. Attempts to disconnect were often unsuccessful, as demands escalated through alternative channels within the same device. Both studies had some risk of bias, with a fair methodological quality rating.

A cross-sectional study on leavism—i.e., employees use time intended for recovery, such as sick leave, personal time off, or annual leave, to continue working—found that approximately 34% of participants attributed this behavior to availability expectations from their employer or supervisor. Responses to an open-ended question further nuanced this by showing that leavism is generally driven by organizational expectations to do more (i.e., to remain available) which are reinforced by ideal worker norms. In this context, employees tend to internalize and enact these expectations by demonstrating continued availability. This, in turn, has implications for their sustainability as workers, including increased risk of burnout and even workplace bullying and harassment (Richards et al., 2023). This study had some risk of bias, with a fair methodological quality rating.

3.3.3 Context-free wellbeing ($k = 3$)

A cross-sectional study of good methodological quality showed no significant correlations between general strain and response expectations and availability (Day et al., 2012). Another cross-sectional study of good methodological quality revealed that perceived expectations in the work context to remain available OWH are associated with overall stress and lower subjective wellbeing, through increased online vigilance (Li et al., 2024). Notably, a cross-sectional and daily diary study of good methodological quality showed that the relationship between stress and wellbeing was moderated by employees' level of disconnection: the negative association was observed only among those who reported low levels of disconnection, whereas for those highly disconnected, this relationship was no longer significant. On days when employees perceived more availability expectations in the work context, they also experienced more negative affect (Park et al., 2020).

3.3.4 Conclusion expectations

Taken together, the 14 studies reported in 13 papers examining availability expectations suggest a relationship with poorer psychological wellbeing across all three of Warr's wellbeing

levels. Across qualitative, cross-sectional, diary, and quasi-experimental studies, findings indicating poorer wellbeing were more frequent than null findings, while no favorable relationships were identified in any of the studies. The reviewed studies linked availability expectations to pressure to remain connected, online vigilance, continued W-ICT use OWH, and reduced psychological detachment. In our review, availability expectations were the most studied organizational climate element. Nevertheless, most quantitative evidence was cross-sectional and the only quasi-experimental study had a high risk of bias.

3.4 Practices in the work context ($k = 8$)

3.4.1 Facet wellbeing ($k = 1$)

A mixed-method study examined digital nudges implemented as organizational practices. Technological nudging strategies aimed at supporting non-use of W-ICTs OWH were perceived as helpful to reduce technostress (Valta and Maier, 2022). Employees identified several strategies as particularly beneficial for decreasing such stress: limited time windows (restricting access outside defined hours), default settings (preconfigured options that simplify tasks and reduce cognitive effort during the working day), warnings (alerts to prevent errors or overwork), feedback (informative or motivational messages on performance to avoid overtime), and reminders (time-based prompts encouraging breaks or timely task completion). This study, however, represented a certain risk of bias as the qualitative part was of fair quality, but the quantitative was of weak methodological quality, with high risk of bias.

3.4.2 Domain wellbeing ($k = 7$)

Cross-sectional survey findings from an open-ended question showed that the work practice in the organization of regularly working during time that is intended to be off (e.g., weekends or holidays) limits recovery, with employees describing feelings of resentment due to reduced engagement in hobbies and the loss of holiday time to work (Richards et al., 2023). This study had some risk of bias, with a fair methodological quality rating.

Similarly, in qualitative research, employees described how a prevailing “work culture” can normalize long hours outside the office (i.e., through W-ICT use), such that work readily takes priority over other commitments in the private sphere (Grant et al., 2013). This study had good methodological quality. Providing employees and supervisors with a company cell phone was described as undermining work–life balance, as it created expectations of constant connectivity between them via their smartphones (Obushenkova et al., 2018). Similar expectations extended to third parties such as clients and customers. However, employees also reported readily using their personal phones to conduct work-related activities during non-work time, challenging family time (Storch and Juarez-Paz, 2022). These latter two studies had some risk of bias, with a fair methodological quality. To protect

themselves from work-related stress, craft workers emphasized the importance of clear ICT-related communication practices at the organizational level to prevent technology from eroding work–nonwork boundaries. Examples include establishing agreements on how and when work-related communication should occur, such as which communication channels to use (e.g., email vs. messaging), checking emails only at predefined times, using answering systems or voicemail, automatically shutting down devices during regular breaks, and refraining from sharing employees' work-related phone numbers with customers (Scheepers et al., 2022). This study was of good methodological quality.

Overall, qualitative studies indicate that W-ICT use OWH practices are negatively associated with domain-specific wellbeing. However, qualitative findings also highlight their ambivalent nature, suggesting that such practices may also be experienced as beneficial under certain conditions. For instance, participants indicated that using W-ICTs OWH to catch up on work could relieve work-related stress (Grant et al., 2013) and facilitate empowerment, flexibility, and psychological detachment (Farivar et al., 2024). Both studies are of good methodological quality. Additionally, always-on practices through mobile communication were sometimes perceived as legitimate tools for enhancing organizational competitiveness, contributing to job satisfaction (Bisht et al., 2023). This latter study had some risk of bias, with a fair methodological quality rating.

3.4.3 Context-free wellbeing ($k = 1$)

A cross-sectional study with some risk of bias (fair methodological quality rating) indicated that the practice of using allocated time off when unwell, taking work home, or continuing to work during annual leave (i.e., leavism) has substantial implications for employee wellbeing. A majority of employees (61.1%) reported that leavism had a negative or very negative impact on their wellbeing, rising to 86.7% when including those reporting a slightly negative effect. In contrast, only 6.3% reported a positive impact. The data derived from an open question further suggested that these practices may induce feelings of shame when employees do not work outside standard hours, thereby encouraging continued work beyond regular working time (Richards et al., 2023).

3.4.4 Conclusion practices

In all, the eight studies examining organizational practices suggest a mixed and conditional relationship with psychological wellbeing. The predominantly qualitative and cross-sectional evidence more often indicated poorer wellbeing, particularly when practices normalized continued connectivity or working during leave. However, some qualitative studies also described benefits when after-hours work provided flexibility, autonomy, or an opportunity to complete unfinished tasks. The implications of these practices therefore appeared to depend on how and under what conditions W-ICT OWH occurred, including employees' degree of choice and the presence of clear communication agreements.

Overall, the evidence suggests neither a uniformly unfavorable nor favorable relationship, and confidence in this pattern remains limited by the observational designs and variable methodological quality of the studies.

3.5 Supported and rewarded behavior ($k = 6$)

3.5.1 Domain-specific wellbeing ($k = 6$)

Interestingly, one study positions wellbeing, as shaped by the W-ICT OWH-related organizational context, as a precursor to subsequent W-ICT OWH use rather than a consequence (Wang et al., 2023). Daily segmentation supply refers to the extent to which employees perceive that their organization allows and supports them in keeping work and private life separate according to their preferred boundaries (Park et al., 2011). The interaction between segmentation supply (e.g., low) and segmentation preference (e.g., high) predicts psychological detachment (e.g., lower), which in turn influences work connectivity behavior after hours (e.g., higher). It has some risk of bias, with a fair methodological quality rating.

Segmentation norms—referring to shared workplace expectations that employees should keep work and private life separate and that such boundary management is socially supported and positively valued—were, in two cross-sectional studies of good methodological quality, associated with less work–life interference and less work stress (Son and Chen, 2018; Yun et al., 2012)—even when controlling for the employee's own segmentation preference (Yun et al., 2012). However, one diary study of good methodological quality found no clear evidence that segmentation norms buffered the negative association between daily work-related smartphone use OWH and psychological detachment (subsequently linked to daily exhaustion) (Derks et al., 2014). While a significant interaction coefficient suggested a possible strengthening rather than buffering effect, the simple slope analyses were not significant, leading the authors to treat the finding as tentative and requiring replication.

Another daily diary study of good methodological quality showed that although organizational connectivity norms—a strong expectation within the organization that employees take work home and remain available and connected to work after hours—were positively related to work-related smartphone use OWH, this association only carried over to higher levels of emotional exhaustion the following morning for employees scoring low on workaholism (Cheung et al., 2022). In contrast, a cross-sectional study of good methodological quality indicated that organizational connectivity norms moderated the role of individual integration preferences in the relationship between W-ICT use OWH and work-to-home conflict (Gadeyne et al., 2018). Specifically, more frequent work-related PC or laptop use OWH was associated with higher work-to-home conflict, except when employees with a strong preference for integration perceived organizational connectivity norms to be weak (i.e., three-way interaction effect).

3.5.2 Context-free wellbeing ($k = 1$)

A cross-sectional survey of good methodological quality found a positive association between segmentation norms in the organization and employee life satisfaction (Son and Chen, 2018).

3.5.3 Conclusion supported and rewarded behaviors

In sum, the six studies examining supported and rewarded behaviors suggest that their relationship with wellbeing depends on the behaviors that organizations support. Segmentation-supportive norms were associated with less work–life interference and stress and greater life satisfaction, although their proposed buffering role was not supported in all studies. Conversely, connectivity norms were linked to continued W-ICT use OWH and, under certain conditions, greater exhaustion or work-to-home conflict. These relationships appeared to vary according to employees' boundary preferences and workaholism. Overall, the evidence suggests contrasting and conditional patterns for segmentation and connectivity norms. Confidence in these patterns remains limited because the evidence was based on a small number of cross-sectional and diary studies, and several interaction findings were tentative or inconsistent.

3.6 Procedures ($k = 1$)

3.6.1 Domain-specific wellbeing ($k = 1$)

A qualitative study with some risk of bias (fair methodological quality rating) among blue-collar remote and mobile workers, such as repair and installation engineers, delivery drivers, and construction workers, revealed that on-call duties (e.g., being on standby 1 day in every six through W-ICTs OWH) left them feeling constantly on edge, as they could be contacted at any time within a 24-h period, disrupting rest and increasing the risk of burnout (Tarafdar and Saunders, 2022).

3.6.2 Conclusion procedures

Evidence regarding organizational procedures was limited to one qualitative study of fair methodological quality. This study linked on-call procedures to disrupted rest and experiences indicative of burnout risk. Although this finding suggests that formal procedures governing after-hours availability may be relevant to employee wellbeing, the evidence is insufficient to establish a consistent pattern or draw broader conclusions.

4 Discussion

This review examined how elements of organizational culture and climate surrounding W-ICT (non-)use OWH relate to employee psychological wellbeing. As the included studies only

assessed dimensions of organizational climate, the discussion of results relates specifically to organizational climate. Given the interrelated nature of climate and culture, we will refer to the findings as organizational elements. As our review addressed a specific topic, namely the use of W-ICT OWH, it is perhaps not surprising that we found a predominance of climate elements rather than measures of organizational culture. Indeed, organizational climate is by definition more specific than culture, it is usually “about something,” more tangible, easier to measure because it relates to immediate and visible aspects in the organization, and more prone to change (Feldman and O'Neill, 2014). The lack of studies on organizational culture should not be interpreted as a lack of importance of this concept for wellbeing, but rather as a consequence of the focus of this review.

The review was guided by several theories. Boundary Theory clarifies how the organizational context may enable or constrain employees' efforts to establish, maintain, and negotiate digital boundaries between work and private life (Ashforth et al., 2000; Nippert-Eng, 1996). Signaling Theory further explains how employees interpret expectations, practices, supported and rewarded behaviors, and procedures as cues regarding whether after-hours availability is expected and whether disconnection is legitimate (Suazo et al., 2009; Connelly et al., 2011). Finally, Warr's (2012) framework allows these associations to be compared across wellbeing outcomes differing in their level of specificity. Together, these perspectives position W-ICT (non-)use OWH not merely as an individual connectivity behavior, but as an organizationally embedded and interpreted practice.

Our review revealed four components of organizational elements surrounding W-ICT use OWH that shape employees' boundary management and are associated with employee wellbeing: expectations regarding employees' availability and responsiveness OWH, everyday practices that model and enact particular forms of connectivity, supported and rewarded behaviors that signal which forms of connectivity and disconnection are valued within the organization, and formal procedures that regulate connectivity through policies and guidelines.

Before interpreting these patterns, however, it is important to acknowledge that the evidence base was weighted toward negatively framed outcomes, particularly work–life conflict, stress, emotional exhaustion, burnout, reduced psychological detachment, and rumination. Positive indicators such as satisfaction, recovery, and life satisfaction were examined much less frequently. The predominance of adverse associations should therefore be interpreted partly as reflecting what the literature has examined most extensively, rather than as evidence that W-ICT use OWH is inherently detrimental. A smaller body of evidence suggests that connectivity can also be experienced as beneficial when it enables flexibility, task completion, relief from immediate work pressure, or alignment with personal boundary preferences (Grant et al., 2013; Hasan et al., 2021; Bisht et al., 2023; Farivar et al., 2024). The evidence is thus currently stronger for risks associated with organizational pressure and constrained boundary control than for positive or resource-based outcomes.

Overall, the findings indicate that these elements are indeed associated with employee wellbeing. However, not all organizational elements appear equally consequential. Most reported evidence emerged for availability expectations: across

quantitative and qualitative studies, of various risks of bias, and across types of wellbeing, perceived expectations to remain available—whether originating from the organization more broadly or from supervisors specifically—were associated in most of the included studies with poorer wellbeing outcomes. For seventeen studies or outcomes, negative effects were found, whereas in three cases, non-significant effects were reported. No positive effects were reported for availability expectations. Qualitative studies illustrated how such expectations prolong employees' psychological connection to work and hinder psychological detachment (Bisht et al., 2023; Charalampous et al., 2022), create pressure to remain responsive (Farivar et al., 2024; Hasan et al., 2021; Obushenkova et al., 2018), and reinforce continued availability even during time intended for recovery (Richards et al., 2023). Importantly, the absence of organizational policies and guidelines, or the existence of unclear expectations may constitute additional risk factors, as they create ambiguity and pressurize employees to remain available (Hasan et al., 2021). In one study, availability ambiguity was associated with poorer wellbeing above and beyond perceived availability expectations (Heissler et al., 2024). Hence, clarifying expectations alone is insufficient to enhance employee wellbeing when broader norms and expectations regarding availability remain intact. From a signaling perspective, availability expectations constitute relatively direct signals that continued accessibility is valued (Suazo et al., 2009; Connelly et al., 2011). Ambiguity does not necessarily neutralize these signals; instead, it may increase strain by leaving employees uncertain about whether and when disconnection is legitimate. From a boundary perspective, both strong and ambiguous expectations may therefore constrain employees' perceived boundary control (Ashforth et al., 2000; Kossek and Lautsch, 2012). The high number of times these findings occur suggests that availability expectations constitute one of the primary mechanisms through which organizational culture and climate elements on W-ICT OWH are linked to employee wellbeing.

A similar pattern emerged for supported and rewarded behaviors. Specifically, segmentation norms, which support and value the separation of work and private life, were associated in several studies with lower work-life interference, lower work stress, and higher life satisfaction (Son and Chen, 2018; Yun et al., 2012). In contrast, organizational connectivity norms, which encourage employees to remain connected and available after hours, were associated with greater after-hours work engagement and, under certain conditions, poorer wellbeing outcomes (Cheung et al., 2022; Gadeyne et al., 2018). These findings further support a signaling perspective. While availability expectations represent relatively direct signals regarding expected employee behavior, organizational norms provide a broader indication of what is considered appropriate, valued, and legitimate within the workplace. Overall, these findings suggest that the organizational meaning attached to connectivity may be at least as important as the behavior itself. Employees may not necessarily suffer because they use W-ICTs OWH, but because they perceive themselves as expected, obliged, or pressured to do so.

Findings regarding organizational practices were considerably more nuanced and at times contradictory. Several studies suggested that practices promoting constant connectivity—such as regularly

working during leave, on-call duties, long-hours cultures, or providing employees with devices that facilitate continuous access—may undermine wellbeing. Nine of the outcomes or studies reported negative outcomes, whereas three also reported positive outcomes. These benefits were generally conditional: employees experienced after-hours connectivity more positively when it facilitated flexibility, task completion, relief from immediate work pressure, detachment from unfinished tasks, or alignment with their preferred boundaries (Grant et al., 2013; Farivar et al., 2024). These findings do not negate the predominance of adverse outcomes, but they caution against treating W-ICT use OWH as inherently harmful. Rather, whether connectivity functions primarily as a demand or as a potential resource appears to depend on the organizational meaning attached to it and on employees' autonomy, boundary control, and fit with their preferred boundary-management approach. Cross-sectional studies were mixed in their findings whether the relation of segmentation norms with mental wellbeing depended on the segmentation preference, with two studies (of fair and good quality) finding an interaction (Gadeyne et al., 2018; Wang et al., 2023) and one study of good quality (Yun et al., 2012) not finding a significant interaction effect. Another study found interaction effects between individual traits and organizational norms on mental wellbeing (Cheung et al., 2022), suggesting that a one-size-fits-all approach on organizational supported and rewarded behavior may not be beneficial. This finding aligns with earlier boundary management research, which shows that experiencing control over one's boundary setting—rather than strict separation or integration—is key to supporting wellbeing (Kossek and Lautsch, 2012).

Our review indeed indicates that organizational influences are not isolated but interact with employees' boundary-management resources and preferences. For instance, availability expectations appear to function as a potent source of strain because they reduce employees' perceived autonomy, when W-ICT use OWH is performed for instrumental reasons, or in a manner aligned with one's preferences, it may be experienced far more positively. Similarly, availability expectations were found to be less detrimental among employees reporting higher boundary control or stronger disconnection practices, while the effects of connectivity norms depended on individual integration preferences and workaholism (Cheung et al., 2022). Moreover, one study suggested that such resources may not only moderate the effects of organizational influences but may also shape subsequent connectivity behavior. Specifically, daily psychological detachment, fostered by organizational support for segmentation, predicted later W-ICT use OWH (Wang et al., 2023). This finding suggests that psychological detachment may operate not only as an indicator of wellbeing but also as a boundary-management resource that helps employees regulate subsequent connectivity behaviors. Employees who successfully detach from work may be better able to maintain boundaries over time, whereas difficulties detaching may increase the likelihood of continued engagement with work-related ICTs outside working hours. Such findings point toward more reciprocal and dynamic relationships between organizational context, boundary management, W-ICT use OWH, and wellbeing than is typically assumed in the literature (Heissler et al., 2022). In all, these findings suggest that organizational influences operate

not only through direct effects but also through their interaction with employees' resources, preferences, and capacity to manage work–nonwork boundaries.

Overall, our review showed that the evidence base is uneven in two respects: across Warr's levels of wellbeing and in the valence of the outcomes examined. Most studies concerned domain-specific wellbeing outcomes, particularly psychological detachment, work–life balance, work-home interference, emotional exhaustion, and work-related stress - which are conceptually close to boundary management and recovery processes and may therefore have received most attention in this literature. In contrast, considerably less attention has been given to facet-specific or context-free wellbeing outcomes. This distribution limits conclusions about both the levels at which organizational culture and climate surrounding W-ICT use OWH are associated with wellbeing and the conditions under which they may foster positive functioning. The current evidence therefore supports firmer conclusions about potential risks than about potential benefits. Future research should assess positive and negative wellbeing indicators concurrently and examine whether initially proximal effects accumulate into broader, context-free wellbeing outcomes over time.

4.1 Implications for theory

Our findings contribute to theory in several ways. Most directly, they extend boundary management perspectives (Ashforth et al., 2000; Nippert-Eng, 1996) by demonstrating that employees' ability to establish and maintain boundaries between work and private life is not solely an individual matter but is shaped by the broader organizational environment. More specifically, our review revealed four components of organizational elements surrounding W-ICT use OWH that influence employee wellbeing: expectations, practices, supported and rewarded behaviors, and procedures. Together, these findings suggest that organizations shape boundary management through multiple mechanisms. Organizations can communicate what employees are expected to do (expectations), model and enact particular forms of connectivity (practices), signal which behaviors are valued and reinforced (supported and rewarded behaviors), and formally regulate connectivity through policies and guidelines (procedures).

Signaling theory adds a complementary explanatory mechanism. The four identified climate elements can be understood as different carriers of organizational signals: expectations communicate anticipated availability relatively directly; practices demonstrate how connectivity is enacted in everyday work; supported and rewarded behaviors communicate what is valued and reinforced; and procedures formalize the organization's stance. Employees may use these signals to infer whether after-hours connectivity is necessary, appropriate, or rewarded and whether disconnection is legitimate and safe. The findings concerning ambiguity further suggest that signal clarity and consistency matter. Formal policies supporting disconnection may, for example, be less credible when contradicted by supervisors' requests or established connectivity practices. This interpretation goes beyond asking whether a policy or practice exists, to examining how its message

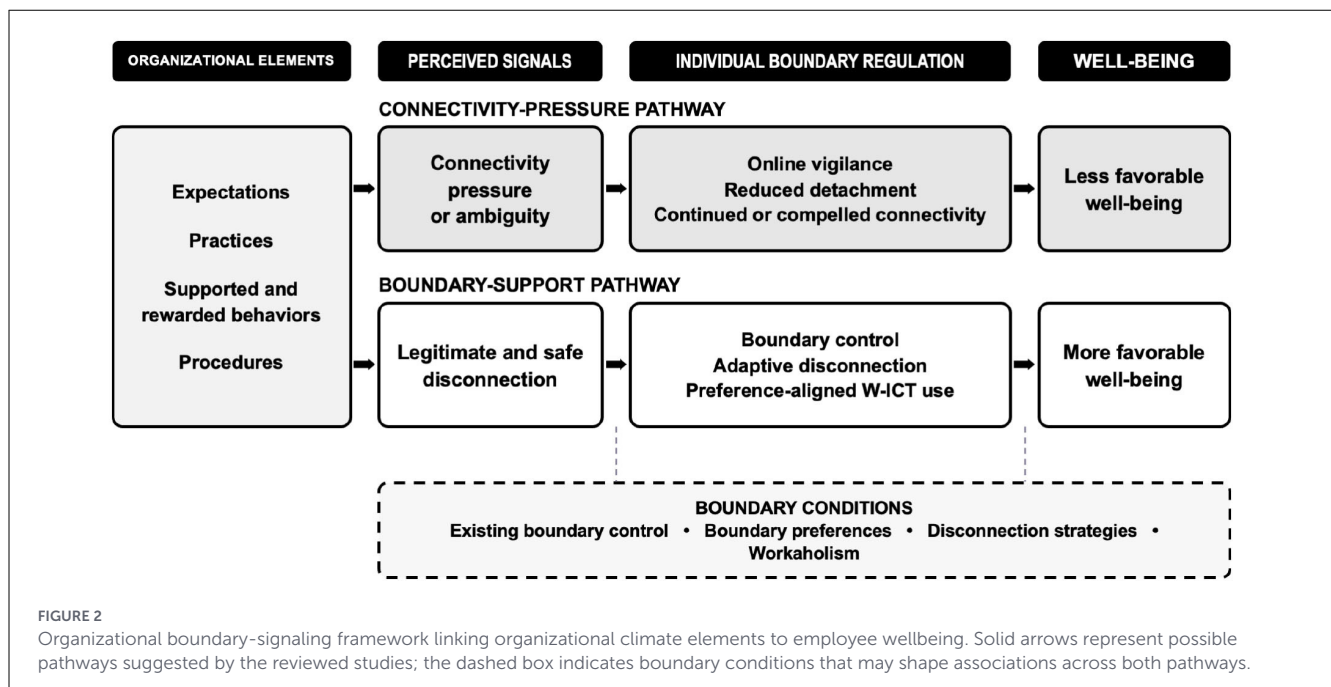
is received by employees. Warr's framework adds a further theoretical contribution by showing that the available evidence is concentrated at the domain-specific level of wellbeing. This limits the conclusions we can draw from this review on whether proximal consequences, such as technostress or reduced psychological detachment, over time accumulate into broader context-free wellbeing outcomes.

At the same time, the findings regarding organizational practices suggest that connectivity-related practices are not inherently beneficial or detrimental. Instead, their implications for wellbeing appear to depend on the extent to which they align with employees' preferences, needs, and circumstances. This pattern seems to be consistent with person–environment fit perspectives (Van Vianen, 2018), which propose that wellbeing is shaped by the degree of congruence between characteristics of the work environment and characteristics of the individual. Practices that facilitate after-hours connectivity may therefore function as resources for some employees while acting as demands for others, depending on their preferred boundary management strategies, capacity for recovery.

The findings of our review can be integrated into an organizational boundary-signaling framework (see Figure 2) illustrating the processes through which the four identified organizational climate elements—expectations, practices, supported and rewarded behaviors, and procedures—may relate to employee wellbeing. Drawing on Signaling Theory and Boundary Theory, these elements are interpreted as indications of whether W-ICT use OWH is expected or valued and whether disconnection is legitimate and safe, thereby expected to influence how employees manage their work–nonwork boundaries. The review points to two possible pathways. In a connectivity-pressure pathway, signals that after-hours connectivity is expected—or signals that leave such expectations ambiguous—may generate uncertainty and constrain boundary control. The reviewed studies associated these signals with online vigilance, reduced psychological detachment, and continued or compelled connectivity, suggesting a possible pathway toward less favorable wellbeing. Conversely, in a boundary-support pathway, signals that disconnection is legitimate and safe may reduce ambiguity, support boundary control, and facilitate adaptive disconnection strategies or more flexible, preference-aligned W-ICT use OWH. These processes may provide a pathway toward more favorable wellbeing. Across both pathways, associations were moderated by employees' existing boundary control, boundary preferences, use of disconnection strategies, and workaholism; these factors are therefore represented as boundary conditions rather than as steps in the pathways. Notably, the framework should be understood as an evidence-informed conceptual model identifying relationships that received some empirical support in our review while also specifying pathways and feedback processes to inspire future research.

4.2 Implications for practice

From a practical perspective, the findings suggest that organizations should not treat W-ICT (non-) use OWH as a matter of individual self-management alone. Employees' ability



to manage boundaries between work and private life depends not only on their personal preferences or strategies, but also on the organizational conditions that make disconnection possible, legitimate, and workable (Allen et al., 2014; Kossek et al., 2012). Organizations seeking to promote employee wellbeing should therefore actively create a culture and climate that supports boundary management. Based on these findings, we propose four practical recommendations targeting organizational expectations, practices, supported and rewarded behaviors, and procedures (Table 3).

First, organizations should clarify expectations regarding availability OWH. Across the reviewed studies, expectations of continued availability, ambiguous expectations, and connectivity norms were most often associated with poorer wellbeing outcomes. Moreover, several studies indicated that ambiguity regarding these expectations may be detrimental above and beyond the expectations themselves. Organizations should therefore make explicit when employees are and are not expected to monitor, read, or respond to work-related messages outside working hours. For example, teams may agree on response-time norms, preferred communication channels, procedures for urgent matters, and periods during which employees are not expected to be reachable. Across all hierarchical levels and across different organizational elements the agreements should be signal in a consistent manner, as ambiguous signals may divert well-intended aims of improving employee wellbeing.

Second, organizations should critically evaluate their everyday communication practices. Although practices promoting after-hours connectivity were frequently associated with impaired recovery and work-life balance, qualitative evidence also showed that employees sometimes experienced these practices as beneficial when they facilitated flexibility or allowed them to complete unfinished work. Organizations should therefore avoid overly

rigid one-size-fits-all rules, as autonomy and perceived control are central determinants of healthy boundary management (Kossek et al., 2012). Instead, they should aim to create conditions in which employees have genuine control over how they manage work-nonwork boundaries. This may include supporting the use of delayed sending functions (e.g., emails sent in the evening are delivered the following morning) or using reminders or default settings that discourage—but do not prevent - after-hours work. Furthermore, organizations may encourage employees to communicate their preferred boundaries and create regular opportunities for teams to discuss and align expectations regarding after-hours communication. Developing these agreements collaboratively may further increase employees' commitment to them, as participative approaches generally enhance acceptance of organizational practices and facilitate behavioral change (Nielsen and Randall, 2012).

Third, organizations should actively reinforce healthy boundary management through the behaviors they support and reward. The review showed that organizational norms supporting segmentation were associated in the majority of studies with more favorable wellbeing outcomes, whereas norms encouraging constant connectivity related to poorer wellbeing. Research shows that managers play a particularly important role in communicating these organizational signals through their own behavior (Sonnentag et al., 2024). Organizations should therefore actively encourage leaders to protect employees' work-nonwork boundaries by acknowledging employees' need for recovery, refraining from unnecessary after-hours requests, and openly demonstrating healthy boundary management through their own communication practices. In doing so, leaders can act as boundary guards (Nippert-Eng, 1996), helping to protect employees' nonwork time and reinforcing the message that recovery is a valued and legitimate part of working life.

TABLE 3 Practical recommendations to improve organizational culture and climate surrounding W-ICT use OWH.

Organizational element	Related recommendations
Expectations	Establish clear and consistent expectations regarding after-hours availability to reduce ambiguity and support recovery. • Define expected response times • Communicate when employees are <i>not</i> expected to respond. • Establish protocols for urgent situations only.
Practices	Design everyday communication practices that respect work-nonwork boundaries while preserving employee flexibility. • Encourage delayed-send functions • Avoid scheduling communications OWH • Adjust default notifications settings to avoid intrusions • Establish team agreements about communication channels and timing
Supported and rewarded behaviors	Create a culture in which healthy boundary management is legitimized and reinforced through recovery-supportive leadership. • Leaders demonstrate empathy for employees' recovery needs • Leaders respect work-nonwork boundaries by avoiding unnecessary after-hours requests • Leaders role model healthy disconnection behaviors • Avoid rewarding constant availability or rapid evening responses
Procedures	Develop formal policies that support boundary management. • Institutional right-to-disconnect policies • Formal organizational communication rules (e.g., response-time expectations, on-call duties, escalation procedures) • Regular review and refinement of policies in consultation with employees

Lastly, although relatively few studies examined formal procedures, the available evidence suggests that clear organizational policies can reduce ambiguity surrounding after-hours connectivity. Organizations should therefore develop transparent guidelines that specify when after-hours communication is appropriate, how urgent matters should be escalated, and what employees can reasonably expect regarding availability and responsiveness outside working hours. At a broader institutional level, policymakers may further support healthy boundary management by introducing right-to-disconnect legislation and sector-wide guidelines that help organizations establish clear and consistent expectations regarding after-hours connectivity. Such legislation has already been introduced in

several countries (e.g., France, Spain, Australia), reflecting growing recognition of the importance of digital disconnection (Martinaitis et al., 2023). However, our findings suggest that legislation alone is unlikely to be sufficient. Its effectiveness will depend on how organizations translate these legal frameworks into clear expectations, supportive leadership, and everyday communication practices.

4.3 Limitations and future research

Several limitations of this review should be acknowledged. As with all systematic reviews, the conclusions are based on available published evidence and may therefore be influenced by publication bias. A future meta-analysis could test for publication bias. This was, however, not possible to conduct given the heterogeneity of study designs and measures in our review. We, however, assume that publication bias may have been minimized by our review's search strategy by including a wide range of document types reporting on research findings, including academic articles, dissertations, policy reports, conference proceedings, and trade journals. It should also be noted that the full text screening process was performed in duplicate for a sample of the search results. Duplicate screening of only a sample of papers is considered acceptable by A MeaSurement Tool to Assess systematic Reviews (AMSTAR) 2 guidelines (Shea et al., 2017) if at least a kappa score of $\kappa = 0.80$ is achieved. Our review reached just below $\kappa = 0.80$ for full text screening. However, this interrater calculation took place before the first author continued as single coder with screening, and as all disagreements in coding were resolved in consensus agreement after this duplicate screening phase and before the single coder continued, we are confident that higher interrater agreement would apply to the subsequent screening of the remaining studies performed by a single coder.

Beyond these methodological limitations of the review itself, our synthesis also revealed several important limitations of the current evidence base. Table 4 summarizes the resulting research gaps and provides illustrative research questions to guide future research. First, the available evidence remains heavily dominated by cross-sectional research. Although some diary and longitudinal studies were identified, these typically covered relatively short timeframes, often ranging from days to a few weeks. As a result, conclusions regarding the longer-term effects of organizational culture and climate surrounding W-ICT use OWH on employee wellbeing remain limited. Future research would benefit from longitudinal designs spanning longer periods and explicitly examining how organizational signals regarding connectivity and disconnection shape employee wellbeing over time. Only one intervention study (quasi-experimental) could be identified, that was moreover of high risk of bias, so high-quality experimental studies are also direly needed.

Second, this review focused on the organizational level within the work context. However, employees operate within broader social systems in which other stakeholders—such as clients, customers, students, parents, or patients—may also communicate expectations regarding availability outside working hours. Future

TABLE 4 Key research gaps and illustrative research questions for future research.

Research gap	Illustrative research questions
Need for studies establishing causal and longitudinal relations	<i>How do organizational culture and climate surrounding W-ICT use OWH influence employee wellbeing over time? Does an intervention that reduces connectivity ambiguity positively influence wellbeing compared to a control condition?</i>
Need for research insights on the influence of the broader social context	<i>How do external stakeholders (e.g., client expectations) influence employees' after-hours connectivity and wellbeing?</i>
Imbalance in research attention to negative and positive wellbeing outcomes	<i>How and under what organizational conditions does W-ICT use OWH function as a demand associated with ill-being vs. a resource supporting positive functioning, and can both processes occur simultaneously?</i>
Uneven research attention across organizational culture and climate elements	<i>Which organizational culture (i.e., values, beliefs, and assumptions reflecting taken-for-granted ideas) and climate elements (i.e., expectations, practices, supported or rewarded behaviors, procedures, and policies) have the strongest influence on employee wellbeing?</i>
Need for in-depth understanding of effects on different types of W-ICTs	<i>Do different W-ICTs (e.g., smartphone vs. laptop availability) or W-ICT activities have distinct effects on employee wellbeing?</i>
Need for research insights in organizational signaling across work and nonwork	<i>How do organizational signals communicated during working hours influence employees' after-hours connectivity and wellbeing?</i>

research could therefore examine how organizational signals interact with signals originating from these external actors. For example, an organization may formally promote digital disconnection while simultaneously prioritizing unrestricted client access, thereby communicating conflicting messages to employees. Conversely, organizations may strengthen the credibility of their disconnection signals by consistently extending them to external stakeholders and actively protecting employees from after-hours demands. Understanding such alignment or misalignment between organizational and external signals may further advance our understanding of how connectivity cultures develop and affect employee wellbeing.

Third, the reviewed studies predominantly examined negatively framed wellbeing outcomes, focusing on indicators such as stress, burnout, emotional exhaustion, work-life conflict, reduced psychological detachment, and rumination. Positive indicators such as satisfaction, recovery, and life satisfaction were considerably less common. This imbalance has important consequences for the interpretation of our findings: the synthesis offers firmer evidence about organizational conditions associated with strain and impaired recovery than about those fostering positive functioning. The scarcity of positive outcomes should not be interpreted as evidence that such benefits are absent. Moreover, potential benefits such as flexibility, autonomy, task completion, and alignment

with personal boundary preferences were generally described as experiences or explanatory conditions rather than directly assessed as wellbeing outcomes. Future research should therefore measure positive and negative wellbeing indicators concurrently and examine resource-based mechanisms such as autonomy, flexibility, task accomplishment, and preference alignment. This would help determine when W-ICT use OWH functions primarily as a demand, when it functions as a resource, and whether both processes can occur simultaneously.

Fourth, some elements of organizational culture and climate have received substantially more attention than others. Expectations, practices, and supported or rewarded behaviors were relatively well represented in the literature, whereas procedures and policies received considerably less attention. Although this review acknowledged the conceptual differences between climate and culture, the concepts were approached jointly given their interdependent and mutually reinforcing nature. While this joint analysis points toward the importance of both elements, it should be noted that the four organizational elements identified in this review - expectations, practices, and supported or rewarded behaviors, and procedures—are conceptually part of the organizational climate. As such, further investigation should focus both on underexplored elements within organizational climate (e.g., policies and procedures), as well as on organizational culture as a whole (i.e., values, beliefs, and assumptions reflecting taken-for-granted ideas). To measure organizational culture in relation to W-ICT use OWH, an adapted version of the competing values framework measure could be used, or in qualitative research, probe participants for what they would tell newcomers about unwritten rules on work-related after-hour connectivity, use vignettes to see how this applies to their organizational culture, or ask about tall tales or anecdotes at work in relation to W-ICT use OWH. This may contribute to a more nuanced and deeper understanding of how organizations shape employee experiences of connectivity and disconnection.

Fifth, we argue that greater attention should be paid to the specific technologies through which employees remain connected. Interestingly, several non-significant findings emerged in studies focusing on work-related smartphone use, raising the possibility that different W-ICTs may have distinct implications for employee wellbeing (Gadeyne et al., 2018). Smartphones may often be used primarily for monitoring and maintaining awareness, whereas laptops and PCs may be more strongly associated with the performance of substantive work tasks. However, if smartphones were provided by work, this increased stress related to availability expectations. Future research could therefore distinguish between different forms of W-ICT use OWH and examine whether they generate different patterns of wellbeing outcomes.

Finally, the present review focused specifically on organizational culture and climate surrounding W-ICT use outside working hours. However, cultures and norms established during working hours may also extend beyond formal work boundaries and influence employees' experiences outside working time. Future research should therefore examine how organizational signals communicated during working hours trickle down into employees' nonwork time, shaping expectations, connectivity behaviors, and ultimately wellbeing. Such work

would contribute to a more integrated understanding of the role of organizational culture and climate in employees' digital wellbeing.

Data availability statement

The original contributions presented in the study are included in the article/[Supplementary material](#), further inquiries can be directed to the corresponding author.

Author contributions

LG: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Software, Validation, Writing – original draft, Writing – review & editing. AV: Writing – review & editing. EB: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. AD: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing.

Funding

The author(s) declared that financial support was received for this work and/or its publication. This work was supported by FWO Flanders–SBO S005923N. Published with support from the Universitaire Stichting België.

Acknowledgments

The authors would like to thank Anna Dzhabroyan, Emily Vandensteen, Yasmien Lebbe, Cédric Deroo, Hanne Dedecke, and

Lieselotte Ingels for their valuable assistance during the initial screening phase of the review process. The earlier version of this manuscript is available as a preprint on PsyArXiv (https://osf.io/preprints/psyarxiv/t5hwx_v1).

Conflict of interest

The author(s) declared that this work was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Generative AI statement

The author(s) declared that Generative AI was not used in the creation of this manuscript.

Any alternative text (alt text) provided alongside figures in this article has been generated by Frontiers with the support of artificial intelligence and reasonable efforts have been made to ensure accuracy, including review by the authors wherever possible. If you identify any issues, please contact us.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/forgp.2026.1919818/full#supplementary-material>

References

- Aggarwal, S. (2024). A study of the relationship between organizational culture and psychological capital and its impact using systematic literature review. *J. Hum. Values* 30, 105–118. doi: 10.1177/09716858231172440
- Ahuja, M., Chudoba, K. M., Kacmar, C., McKnight, D. H., and George, J. F. (2007). IT road warriors: balancing work–family conflict, job autonomy, and work overload to mitigate turnover intentions. *MIS Q.* 31, 1–17. doi: 10.2307/25148778
- Allen, T. D., Cho, E., and Meier, L. L. (2014). Work–family boundary dynamics. *Annu. Rev. Organ. Psychol. Organ. Behav.* 1, 99–121. doi: 10.1146/annurev-orgpsych-031413-091330
- Allen, T. D., Greenhaus, J., and Edwards, J. (2010). *The Meaning of Work–Family Balance: An Empirical Investigation [Paper presentation]*. Montreal, QC: The Annual meeting of Academy of Management.
- Anderson, S. E., Coffey, B. S., and Byerly, R. T. (2002). Formal organizational initiatives and informal workplace practices: links to work–family conflict and job-related outcomes. *J. Manage.* 28, 787–810. doi: 10.1177/014920630202800605
- Ashforth, B. E., Kreiner, G. E., and Fugate, M. (2000). All in a day's work: boundaries and micro role transitions. *Acad. Manag. Rev.* 25, 472–491. doi: 10.2307/259305
- Barber, L. K., and Santuzzi, A. M. (2015). Please respond ASAP: workplace telepressure and employee recovery. *J. Occup. Health Psychol.* 20, 172–189. doi: 10.1037/a0038278
- Barnett, R. C., and Hall, D. T. (2001). How to use reduced hours to win the war for talent. *Organ. Dyn.* 29, 192–210. doi: 10.1016/S0090-2616(01)00024-9
- Barnett, R. C., and Hyde, J. S. (2001). Women, men, work, and family: an expansionist theory. *Am. Psychol.* 56, 781–796. doi: 10.1037/0003-066X.56.10.781

- Bartone, P. T., Ursano, R. J., Wright, K. M., and Ingraham, L. H. (1989). The impact of a military air disaster on the health of assistance workers. *J. Nerv. Ment. Dis.* 177, 317–328. doi: 10.1097/00005053-198906000-00001
- Belkin, L. Y., Becker, W. J., and Conroy, S. A. (2020). The invisible leash: the impact of organizational expectations for email monitoring after-hours on employee resources, well-being, and turnover intentions. *Group Organ. Manag.* 45, 709–740. doi: 10.1177/1059601120933143
- Bergman, A., and Gardiner, J. (2007). Employee availability for work and family: three Swedish case studies. *Empl. Rel.* 29, 400–414. doi: 10.1108/01425450710759226
- Bisht, N. S., Trusson, C., Siwale, J., and Ravishankar, M. N. (2023). Enhanced job satisfaction under tighter technological control: the paradoxical outcomes of digitalisation. *New Technol. Work Employ.* 38, 162–184. doi: 10.1111/ntwe.12222
- Boswell, W. R., and Olson-Buchanan, J. B. (2007). The use of communication technologies after hours: the role of work attitudes and work-life conflict. *J. Manage.* 33, 592–610. doi: 10.1177/0149206307302552
- Büssing, A., and Glaser, J. (1998). *Managerial Stress und Burnout. A Collaborative International Study (CISMS)*. München: Die deutsche Untersuchung [The German study].
- Butts, M. M., Becker, W. J., and Boswell, W. R. (2015). Hot buttons and time sinks: the effects of electronic communication during nonwork time on emotions and work-nonwork conflict. *Acad. Manag. J.* 58, 763–788. doi: 10.5465/amj.2014.0170
- Byrne, B. M. (1991). The Maslach burnout inventory: validating factorial structure and invariance across intermediate, secondary, and university educators. *Multivariate Behav. Res.* 26, 583–605. doi: 10.1207/s15327906mbr2604_2
- Carlson, D. S., Kacmar, K. M., and Williams, L. J. (2000). Construction and initial validation of a multidimensional measure of work-family conflict. *J. Vocat. Behav.* 56, 249–276. doi: 10.1006/jvbe.1999.1713
- Charalampous, M., Grant, C. A., and Tramontano, C. (2022). “It needs to be the right blend”: a qualitative exploration of remote e-workers’ experience and well-being at work. *Empl. Rel.* 44, 335–355. doi: 10.1108/ER-02-2021-0058
- Cheng, K., Cao, X., Guo, L., and Xia, Q. (2022). Work connectivity behavior after-hours and job satisfaction: examining the moderating effects of psychological entitlement and perceived organizational support. *Pers. Rev.* 51, 2277–2293. doi: 10.1108/PR-06-2020-0413
- Cheung, Y. L., Lun, M. C., and Wang, H. J. (2022). Smartphone use after work mediates the link between organizational norm of connectivity and emotional exhaustion: will workaholism make a difference? *Stress Health* 38, 130–139. doi: 10.1002/smi.3083
- Cohen, S., Kamarck, T., and Mermelstein, R. (1983). Accessibility support: if you experience accessibility issues with this file, report them here a global measure of perceived stress. *J. Health Soc. Behav.* 24, 385–396. doi: 10.2307/2136404
- Connelly, B. L., Certo, S. T., Ireland, R. D., and Reutzel, C. R. (2011). Signaling theory: a review and assessment. *J. Manage.* 37, 39–67. doi: 10.1177/0149206310388419
- Day, A. L., and Ziemer, K. (2003). “Subjective and objective measures of task control and stress,” in *Presentation at the annual meeting of the Administrative Sciences Association of Canada*, Vol. 16 (Halifax, NS).
- Day, A., Barber, L. K., and Tonet, J. (2019). “Information communication technology and employee well-being: understanding the paradox triad at work,” in *The Cambridge Handbook of Technology and Employee Behavior* (Cambridge University Press), 580–607. doi: 10.1017/9781108649636.022
- Day, A., Paquet, S., Scott, N., and Hambley, L. (2012). Perceived information and communication technology (ICT) demands on employee outcomes: the moderating effect of organizational ICT support. *J. Occup. Health Psychol.* 17, 473–491. doi: 10.1037/a0029837
- Day, A., Scott, N., and Kelloway, K. (2010). “Information and communication technology: implications for job stress and employee wellbeing,” in *New Development in Theoretical and Conceptual Approaches to Job Stress*, eds P. L. Perrewé and D. C. Ganster (Bingley: Emerald Group Publishing Limited), 317–350. doi: 10.1108/S1479-3555(2010)0000008011
- Derks, D., and Bakker, A. B. (2014). Smartphone use, work-home interference, and burnout: a diary study on the role of recovery. *Appl. Psychol.* 63, 411–440. doi: 10.1111/j.1464-0597.2012.00530.x
- Derks, D., van Mierlo, H., and Schmitz, E. B. (2014). A diary study on work-related smartphone use, psychological detachment and exhaustion: examining the role of the perceived segmentation norm. *J. Occup. Health Psychol.* 19, 74–84. doi: 10.1037/a0035076
- Diaz, I., Chiaburu, D. S., Zimmerman, R. D., and Boswell, W. R. (2012). Communication technology: pros and cons of constant connection to work. *J. Vocat. Behav.* 80, 500–508. doi: 10.1016/j.jvb.2011.08.007
- Diener, E., Emmons, R. A., Larsen, R. J., and Griffin, S. (1985). The satisfaction with life scale. *J. Pers. Assess.* 49, 71–75. doi: 10.1207/s15327752jpa4901_13
- Dong, M., Zhang, T., Li, Y., and Ren, Z. (2022). The effect of work connectivity behavior after-hours on employee psychological distress: the role of leader workaholism and work-to-family conflict. *Front. Public Health* 10:722679. doi: 10.3389/fpubh.2022.722679
- Duranová, L., and Ohly, S. (2016). “Persistent work-related technology use, recovery and well-being processes focus on supplemental work after hours,” in *Springer Briefs in Psychology* (Cham; Heidelberg; New York, NY; Dordrecht; London: Springer). doi: 10.1007/978-3-319-24759-5
- Effective Public Health Practice Project (2025). *Quality Assessment Tool for Quantitative Studies Dictionary*.
- Eisenberger, R., Shanock, L. R., and Wen, X. (2020). Perceived organizational support: why caring about employees counts. *Annu. Rev. Organ. Psychol. Organ. Behav.* 7:53. doi: 10.1146/annurev-orgpsych-012119-044917
- Eurofound (2020). *Living, Working and COVID-19*. Luxembourg: Publications Office of the European Union.
- Farivar, F., Eshraghian, F., Hafezieh, N., and Cheng, D. (2024). Constant connectivity and boundary management behaviors: the role of human agency. *Int. J. Hum. Resour. Manag.* 35, 1250–1282. doi: 10.1080/09585192.2023.2271835
- Feldman, D. C., and O'Neill, O. A. (2014). “The role of socialization, orientation, and training programs in transmitting culture and climate and enhancing performance,” in *The Oxford Handbook of Organizational Climate and Culture*, 44–64.
- Frone, M. R. (2015). Relations of negative and positive work experiences to employee alcohol use: testing the intervening role of negative and positive work rumination. *J. Occup. Health Psychol.* 20, 148–160. doi: 10.1037/a0038375
- Gadeyne, N., Verbruggen, M., Delanoë, J., and De Cooman, R. (2018). All wired, all tired? Work-related ICT-use outside work hours and work-to-home conflict: the role of integration preference, integration norms and work demands. *J. Vocat. Behav.* 107, 86–99. doi: 10.1016/j.jvb.2018.03.008
- Gershon, R. R., Stone, P. W., Zeltser, M., Faucett, J., MacDavitt, K., and Chou, S. S. (2007). Organizational climate and nurse health outcomes in the united states: a systematic review. *Ind. Health* 45, 622–636. doi: 10.2486/indhealth.45.622
- Geurts, S., Taris, T. W., Kompier, M. A. J., Dikkers, J., van Hooff, M., and Kinnunen, U. (2005). Work-home interaction from a work psychological perspective: development and validation of a new questionnaire, the SWING. *Work Stress* 19, 319–339. doi: 10.1080/02678370500410208
- Giorgi, G., Lecca, L. I., Alessio, F., Finstad, G. L., Bondanini, G., Lulli, L. G., et al. (2020). COVID-19-related mental health effects in the workplace: a narrative review. *Int. J. Environ. Res. Public Health* 17, 1–22. doi: 10.3390/ijerph17217857
- Grant, C. A., Wallace, L. M., and Spurgeon, P. C. (2013). An exploration of the psychological factors affecting remote e-worker’s job effectiveness, well-being and work-life balance. *Empl. Rel.* 35, 527–546. doi: 10.1108/ER-08-2012-0059
- Grzywacz, J. G., and Marks, N. F. (1999). *Reconceptualizing the Work-Family Interface: An Ecological Perspective on the Correlates of Positive and Negative Spillover Between Work and Family*. doi: 10.1037/1076-8998.5.1.111
- Hammer, L. B., Ernst Kossek, E., Bodner, T., and Crain, T. (2013). Measurement development and validation of the family supportive supervisor behavior short-form (FSSB-SF). *J. Occup. Health Psychol.* 18, 285–296. doi: 10.1037/a0032612
- Hamouche, S. (2020). COVID-19 and employees’ mental health: stressors, moderators and agenda for organizational actions. *Emerald Open Res.* 2:15. doi: 10.1108/EOR-02-2023-0004
- Hasan, A., Rameezdeen, R., Baroudi, S., and Ahn, S. (2021). Mobile ICT-induced informal work in the construction industry: boundary management approaches and consequences. *J. Constr. Eng. Manag.* 147, 1–10. doi: 10.1061/(ASCE)CO.1943-7862.0002134
- Hawker, S., Payne, S., Kerr, C., Hardey, M., and Powell, J. (2002). Appraising the evidence: reviewing disparate data systematically. *Qual. Health Res.* 12, 1284–1299. doi: 10.1177/1049732302238251
- Heissler, C., Kern, M., and Ohly, S. (2022). When thinking about work makes employees reach for their devices: a longitudinal autoregressive diary study. *J. Bus. Psychol.* 37, 999–1016. doi: 10.1007/s10869-021-09781-0
- Heissler, C., Ohly, S., and Kern, M. (2024). Dear manager, now i know what you expect: examining availability ambiguity in two studies. *Ger. J. Hum. Resour. Manag.* 38, 259–282. doi: 10.1177/23970022231196440
- Hill, E. J., Ferris, M., and Martinson, V. (2003). Does it matter where you work? A comparison of how three work venues (traditional office, virtual office, and home office) influence aspects of work and personal/family life. *J. Vocat. Behav.* 63, 220–241. doi: 10.1016/S0001-8791(03)00042-3
- ITU (2022). *Measuring Digital Development Facts and Figures 2022*.
- Jarvenpaa, S. L., and Lang, K. R. (2005). Managing the paradoxes of mobile technology. *Inf. Syst. Manag.* 22, 7–23. doi: 10.1201/1078.10580530/45520.22.4.20050901/90026.2
- Jenkins, C. D., Jono, R. T., and Stanton, B. A. (1996). Predicting completeness of symptom relief after major heart surgery. *Behav. Med.* 22, 45–57. doi: 10.1080/08964289.1996.9933764
- Jenkins, C. D., Stanton, B. A., Niemcryk, S. J., and Rose, R. M. (1988). A scale for the estimation of sleep problems in clinical research. *J. Clin. Epidemiol.* 41, 313–321. doi: 10.1016/0895-4356(88)90138-2

- Julmi, C. (2017). Organisational atmospheres: the missing link between organisational culture and climate. *Int. J. Work Organ. Emotion*, 8, 131–147. doi: 10.1504/IJWOE.2017.086446
- Kim, H.-W., and Kankanhalli, A. (2009). Investigating user resistance to information systems implementation: a status quo bias perspective. *MIS Q.* 33, 567–582. doi: 10.2307/20650309
- Kossek, E. E. (2016). Managing work–life boundaries in the digital age. *Organ. Dyn.* 45, 258–270. doi: 10.1016/j.orgdyn.2016.07.010
- Kossek, E. E., and Lautsch, B. A. (2012). Work–family boundary management styles in organizations: a cross-level model. *Organ. Psychol. Rev.* 2, 152–171. doi: 10.1177/2041386611436264
- Kossek, E. E., Ruderman, M. N., Braddy, P. W., and Hannum, K. M. (2012). Work-nonwork boundary management profiles: a person-centered approach. *J. Vocat. Behav.* 81, 112–128. doi: 10.1016/j.jvb.2012.04.003
- Kreiner, G. E. (2006). Consequences of work-home segmentation or integration: a person-environment fit perspective. *J. Organ. Behav.* 27, 485–507. doi: 10.1002/job.386
- Kühner, C., Rudolph, C. W., Derks, D., Posch, M., and Zacher, H. (2023). Technology-assisted supplemental work: a meta-analysis. *J. Vocat. Behav.* 142:103861. doi: 10.1016/j.jvb.2023.103861
- Kundro, T. G., Belinda, C. D., Affinito, S. J., and Christian, M. S. (2023). Performance pressure amplifies the effect of evening detachment on next-morning shame: downstream consequences for workday cheating behavior. *J. Appl. Psychol.* 108, 1356–1371. doi: 10.1037/apl0001074
- Li, Q., Guo, Y., Ye, J., Qiu, Y., and Zheng, Y. (2024). I'm trying to get my mind offline: ICT demands, online vigilance, disconnection, and subjective well-being among Chinese media employees. *Curr. Psychol.* 43, 13374–13385. doi: 10.1007/s12144-023-05390-7
- Lorenc, T., Petticrew, M., Whitehead, M., Neary, D., Clayton, S., Wright, K., et al. (2014). Crime, fear of crime and mental health: synthesis of theory and systematic reviews of interventions and qualitative evidence. *Public Health Res.* 2, 1–398. doi: 10.3310/phr02020
- Martinaitis, Z., Sadauskaite, A., Garbašauskaite, A., Morris, O., Bartasevičius, V., Gigan, N., et al. (2023). *Study Exploring the Social, Economic and Legal Context and Trends of Telework and the Right to Disconnect, in the Context of Digitalisation and the Future of Work, During and Beyond the COVID-19 Pandemic Final Report*.
- Maslach, C., and Jackson, S. E. (1981). The measurement of experienced burnout. *J. Occup. Behav.* 2, 99–113. doi: 10.1002/job.4030020205
- Maslach, C., Jackson, S. E., and Leiter, M. P. (1996). *Maslach Burnout Inventory*. Palo Alto, CA: Consulting Psychologists Press.
- Mazmanian, M., Orlikowski, W. J., and Yates, J. A. (2013). The autonomy paradox: the implications of mobile email devices for knowledge professionals. *Organ. Sci.* 24, 1337–1357. doi: 10.1287/orsc.1120.0806
- Mellner, C. (2016). After-hours availability expectations, work-related smartphone use during leisure, and psychological detachment: the moderating role of boundary control. *Int. J. Workplace Health Manag.* 9, 146–164. doi: 10.1108/IJWHM-07-2015-0050
- Mendonça, I., Coelho, F., Ferrajão, P., and Abreu, AM. (2022). Telework and mental health during COVID-19. *Int. J. Environ. Res. Public Health* 19:2602. doi: 10.3390/ijerph19052602
- National Heart, Lung, and Blood Institute (2021). *Study Quality Assessment Tools*.
- Nielsen, K., and Randall, R. (2012). The importance of employee participation and perceptions of changes in procedures in a teamworking intervention. *Work Stress* 26, 91–111. doi: 10.1080/02678373.2012.682721
- Ninaus, K., Diehl, S., Terlutter, R., Chan, K., and Huang, A. (2015). Benefits and stressors - Perceived effects of ICT use on employee health and work stress: an exploratory study from Austria and Hong Kong. *Int. J. Qual. Stud. Health Well-being* 10:28838. doi: 10.3402/qhw.v10.28838
- Nippert-Eng, C. (1996). *Home and Work*. Chicago: The University of Chicago Press. doi: 10.7208/chicago/9780226581477.001.0001
- Nöhammer, E., and Stichlberger, S. (2019). Digitalization, innovative work behavior and extended availability. *J. Bus. Econ.* 89, 1191–1214. doi: 10.1007/s11573-019-00953-2
- Nurmi, N., and Hinds, P. J. (2020). Work design for global professionals: connectivity demands, connectivity behaviors, and their effects on psychological and behavioral outcomes. *Organ. Stud.* 41, 1697–1724. doi: 10.1177/0170840620937885
- Obushenkova, E., Plester, B., and Haworth, N. (2018). Manager-employee psychological contracts: enter the smartphone. *Empl. Rel.* 40, 193–207. doi: 10.1108/ER-02-2017-0040
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., et al. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ*. 372:n71. doi: 10.1136/bmj.n71
- Park, Y. A., Fritz, C., and Jex, S. M. (2011). Relationships between work-home segmentation and psychological detachment from work: the role of communication technology use at home. *J. Occup. Health Psychol.* 16, 457–467. doi: 10.1037/a0023594
- Park, Y. A., Liu, Y., and Headrick, L. (2020). When work is wanted after hours: testing weekly stress of information communication technology demands using boundary theory. *J. Organ. Behav.* 41, 518–534. doi: 10.1002/job.2461
- Peng, X., Sheng, Y., and Huo, W. (2022). Work-related use of information and communication technologies and error admission: the roles of emotional exhaustion and person-organization fit. *Soc. Behav. Pers.* 50, 1–11. doi: 10.2224/sbp.11605
- Pirkkalainen, H., Salo, M., Tarafdar, M., and Makkonen, M. (2019). Deliberate or instinctive? Proactive and reactive coping for technostress. *J. Manag. Inf. Syst.* 36, 1179–1212. doi: 10.1080/07421222.2019.1661092
- Piszczek, M. M. (2017). Boundary control and controlled boundaries: organizational expectations for technology use at the work–family interface. *J. Organ. Behav.* 38, 592–611. doi: 10.1002/job.2153
- Quinn, R. E., and Rohrbaugh, J. (1981). A competing values approach to organizational effectiveness. *Public Productiv. Rev.* 5, 122–140. doi: 10.2307/3380029
- Reinecke, L., Klimmt, C., Meier, A., Reich, S., Hefner, D., Knop-Huelss, K., et al. (2018). Permanently online and permanently connected: development and validation of the online vigilance scale. *PLoS ONE* 13:e0205384. doi: 10.1371/journal.pone.0205384
- Reinke, K., and Gerlach, G. I. (2021). Linking availability expectations, bidirectional boundary management behavior and preferences, and employee well-being: an integrative study approach. *J. Bus. Psychol.* 37, 695–715. doi: 10.1007/s10869-021-09768-x
- Restubog, S. L. D., Scott, K. L., and Zagenczyk, T. J. (2011). When distress hits home: the role of contextual factors and psychological distress in predicting employees' responses to abusive supervision. *J. Appl. Psychol.* 96, 713–729. doi: 10.1037/a0021593
- Richards, J., Ellis, V., Canduela, J., Pustelnikovaite, T., and Saxena, S. (2023). Developing the concept of leaveism: from presenteeism/absence to an emergent and expanding domain of employment? *Hum. Resour. Manag. J.* 33, 384–405. doi: 10.1111/1748-8583.12452
- Richardson, K. M., and Thompson, C. A. (2012). High tech tethers and work-family conflict: a conservation of resources approach. *Eng. Manag. Res.* 1, 29–43. doi: 10.5539/emr.v1n1p29
- Richardson, K., and Benbunan-Fich, R. (2011). Examining the antecedents of work connectivity behavior during non-work time. *Inf. Organ.* 21, 142–160. doi: 10.1016/j.infoandorg.2011.06.002
- Samsudin, E. Z., Isahak, M., Rampal, S., Rosnah, I., and Zakaria, M. I. (2020). Organisational antecedents of workplace victimisation: the role of organisational climate, culture, leadership, support, and justice in predicting junior doctors' exposure to bullying at work. *Int. J. Health Plann. Manage.* 35, 346–367. doi: 10.1002/hpm.2926
- Santuzzi, A. M., and Barber, L. K. (2018). Workplace telepressure and worker well-being: the intervening role of psychological detachment. *Occup. Health Sci.* 2, 337–363. doi: 10.1007/s41542-018-0022-8
- Sayah, S. (2013). Managing work-life boundaries with information and communication technologies: the case of independent contractors. *New Technol. Work Employ.* 28, 179–196. doi: 10.1111/ntwe.12016
- Scaramuzzino, G., and Martinell Barfoed, E. (2023). Swedish social workers' experiences of technostress. *Nordic Soc. Work Res.* 13, 231–244. doi: 10.1080/2156857X.2021.1951335
- Scheepers, L., Angerer, P., and Dragano, N. (2022). Digitalisation in craft enterprises: perceived technostress, readiness for prevention and countermeasures—a qualitative study. *Int. J. Environ. Res. Public Health* 19:11349. doi: 10.3390/ijerph191811349
- Schein, E. H. (2010). *Organizational Culture and Leadership*. San Francisco, CA: John Wiley & Sons, Inc.
- Schlachter, S., McDowall, A., Cropley, M., and Ilke, I. (2018). Voluntary work-related technology use during non-work time: a narrative synthesis of empirical research and research agenda. *Int. J. Manag. Rev.* 20, 825–846. doi: 10.1111/ijmr.12165
- Schneider, B., and Barbera, K. M. (2014). *Organizational Climate and Culture*. New York, NY: Oxford University Press. doi: 10.1093/oxfordhb/9780199860715.001.0001
- Schneider, B., Ehrhart, M. G., and Macey, W. H. (2013). Organizational climate and culture. *Annu. Rev. Psychol.* 64, 361–388. doi: 10.1146/annurev-psych-113011-143809
- Shea, B. J., Reeves, B. C., Wells, G., Thuku, M., Hamel, C., Moran, J., et al. (2017). AMSTAR 2: a critical appraisal tool for systematic reviews that include randomised or non-randomised studies of healthcare interventions, or both. *BMJ*. 358:j4008. doi: 10.1136/bmj.j4008
- Sinha, E., and Laghate, K. (2023). Individual self-concept and after-hours work behavior: effect on employee engagement and the moderating roles of POS and PSS. *Soc. Sci. Humanit. Open* 7:100451. doi: 10.1016/j.ssaho.2023.100451
- Son, J. S., and Chen, C. C. (2018). Does using a smartphone for work purposes 'ruin' your leisure? Examining the role of smartphone use in work–leisure conflict and life satisfaction. *J. Leis. Res.* 49, 236–257. doi: 10.1080/00222216.2018.1534074
- Sonnentag, S. (2012). Psychological detachment from work during leisure time: the benefits of mentally disengaging from work. *Curr. Dir. Psychol. Sci.* 21, 114–118. doi: 10.1177/0963721411434979

- Sonnentag, S., and Fritz, C. (2007). The recovery experience questionnaire: development and validation of a measure for assessing recuperation and unwinding from work. *J. Occup. Health Psychol.* 12, 204–221. doi: 10.1037/1076-8998.12.3.204
- Sonnentag, S., Kark, R., and Venz, L. (2024). Leader support for recovery: a multi-level approach to employee psychological detachment from work. *J. Occup. Organ. Psychol.* 97, 1762–1788. doi: 10.1111/joop.12538
- Sonnentag, S., Kuttler, I., and Fritz, C. (2010). Job stressors, emotional exhaustion, and need for recovery: a multi-source study on the benefits of psychological detachment. *J. Vocat. Behav.* 76, 355–365. doi: 10.1016/j.jvb.2009.06.005
- Spence, M. (1973). Accessibility support: if you experience accessibility issues with this file, report them here. *Q. J. Econ.* Available online at: <https://about.jstor.org/terms>
- Storch, S. L., and Juarez-Paz, A. V. O. (2022). Influence of professional mobile device usage on work/family border theory. *Mob. Media Commun.* 10, 510–530. doi: 10.1177/20501579221083753
- Suazo, M. M., Martínez, P. G., and Sandoval, R. (2009). Creating psychological and legal contracts through human resource practices: a signaling theory perspective. *Hum. Resour. Manag. Rev.* 19, 154–166. doi: 10.1016/j.hrmr.2008.11.002
- Syrek, C., Bauer-Emmel, C., Antoni, C. H., and Klusemann, J. (2011). Entwicklung und validierung der trierer kurzskala zur messung von work-life balance (TKS-WLB). *Diagnostica* 57, 134–145. German. doi: 10.1026/0012-1924/a000044
- Tarafdar, M., and Saunders, C. (2022). Remote, mobile, and blue-collar: ICT-enabled job crafting to elevate occupational well-being. *J. Assoc. Inf. Syst.* 23, 707–749. doi: 10.17705/1jais.00738
- Tennant, R., Hiller, L., Fishwick, R., Platt, S., Joseph, S., Weich, S., et al. (2007). The Warwick-Dinburgh mental well-being scale (WEMWBS): development and UK validation. *Health Qual. Life Outcomes* 5:63. doi: 10.1186/1477-7525-5-63
- Tsaur, S. H., Liang, Y. W., and Hsu, H. J. (2012). A multidimensional measurement of work-leisure conflict. *Leis. Sci.* 34, 395–416. doi: 10.1080/01490400.2012.714701
- Valta, M., and Maier, C. (2022). “Digital nudging to reduce techno stressors: insights from qualitative and quantitative studies,” in *Twenty-eighth Americas Conference on Information Systems* (Minneapolis, MN). Available online at: https://aisel.aisnet.org/amcis2022/sig_adit/sig_adit/10 (Accessed May 05, 2025).
- Van Horn, J., Taris, T. W., Schaufeli, W. B., and Schreurs, P. J. G. (2004). The structure of occupational well-being: a study among Dutch teachers. *J. Occup. Organ. Psychol.* 77, 365–375. doi: 10.1348/0963179041752718
- Van Veldhoven, M., de Jonge, J., Broersen, S., and Kompier, M. A. J. (2002). Specific relationships between psychosocial job conditions and job-related stress: a three-level analytic approach. *Work Stress* 16, 207–228. doi: 10.1080/02678370210166399
- Van Vianen, A. E. M. (2018). Annual review of organizational psychology and organizational behavior person-environment fit: a review of its basic tenets. *Annu. Rev. Organ. Psychol. Organ. Behav.* 5:58. doi: 10.1146/annurev-orgpsych-032117-104702
- Vanden Abeele, M. M. P., Vandebosch, H., Koster, E., De Leyn, T., Van Gaeveren, K., de Segovia Vicente, D., et al. (2024). Why, how, when, and for whom does digital disconnection work? A process-based framework of digital disconnection. *Commun. Theory* 34, 3–17. doi: 10.1093/ct/qtad016
- Verlinden, A., Baillien, E., Notelaers, G., and Verbruggen, M. (2025). Always on? Development and validation of the employee digital disconnection scale (EDDS). *Work Stress* 39, 83–109. doi: 10.1080/02678373.2024.2364597
- Wang, F., Zhang, Z., and Shi, W. (2023). Effects of segmentation supply and segmentation preference on work connectivity behaviour after hours: a person–environment fit perspective. *Curr. Psychol.* 42, 28146–28159. doi: 10.1007/s12144-022-03899-x
- Warr, P. (2012). *How to Think About and Measure Psychological Well-being*. Routledge: Psychology Press.
- Watson, D., Clark, L. A., and Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: the PANAS scales. *J. Pers. Soc. Psychol.* 54, 1063–1070. doi: 10.1037/0022-3514.54.6.1063
- Williams, L. J., and Anderson, S. E. (1991). Job satisfaction and organizational commitment as predictors of organizational citizenship and in-role behaviors. *J. Manage.* 17, 601–617. doi: 10.1177/014920639101700305
- Wu, J., Wang, N., Lin, L., and Mei, W. (2020). Technology-induced job anxiety during non-work time: examining conditional effect of techno-invasion on job anxiety. *Int. J. Netw. Virtual Organ.* 22:162. doi: 10.1504/IJNVO.2020.105520
- Yun, H., Kettinger, W., and Lee, C. (2012). A New open door: the smartphone's impact on work-to-life conflict, stress, and resistance. *Int. J. Electron. Commer.* 16, 121–152. doi: 10.2753/JEC1086-4415160405
- Zhang, Z., Xiao, H., Zheng, J., Shen, Y., and Sun, X. (2024). Weekly information communication technology availability demand and family experiences in dual-earner couples: a perspective from the spillover–crossover model. *Appl. Psychol.* 73, 2200–2223. doi: 10.1111/apps.12545

Appendix A

Key words for screening

TABLE A1 Original search and update.

Topic	key words
Work	Work OR employ* OR work environment OR group OR team* OR self employed
	AND
ICT (non-)use	ICT OR information and communication technology OR computer mediated communication OR CMC OR digital* OR disconnect* OR detox OR connect*; Virtual OR distance OR distributed OR dispersed OR remote OR technology-mediat* OR computer-mediat* or global
	AND
Antecedents and processes	break OR time out OR unplug OR work life* OR work home* OR work family* OR techno* OR interrup*OR concentr* OR focus OR overload OR tele* OR intensification OR telework* OR telecommut* OR mobile work OR m-work OR e-work OR email OR smartphone OR video conferenc* OR digital technolog* OR mobile technolog* OR virtual technolog* OR new ways of work* OR after-hours connectivity OR 24/7 OR always on OR Boundar* OR Tactics OR interference OR time displacement OR exposure
	AND
Consequences	strain OR stress* OR health OR burn* OR wellbeing OR wellbeing OR satisfaction OR affect OR engage* OR thriving OR social relationships OR demands OR productivity OR flex* OR autonomy OR performance OR productivity OR Commitment OR extra-role performance
	AND
Contextual factors	coping OR perception OR detach* OR recovery OR effect OR consequenc* OR outcome OR response OR influenc* OR hurdles OR interventions OR failure OR context OR fit OR support*

TABLE A2 Second update.

Topic	key words
Work	Work OR employ* OR self employ*
	AND
ICT (non-)use	ICT OR information and communication technology OR computer mediated communication OR CMC OR digital* OR disconnect* OR detox OR connect* OR Virtual OR distributed OR remote OR technology-mediat* OR computer-mediat* OR techno* OR email OR smartphone
	AND
Outside working hours	break OR time out OR unplug OR work life* OR work home* OR work family* OR after-hours OR 24/7 OR always on OR Boundar* OR outside work* OR extended OR availability
	AND
Climate/culture	Climate OR culture OR expect* OR polic* OR Procedure OR practice OR reward* OR support* OR value OR belief OR story OR Myth OR decision
	AND
Wellbeing	Overload OR detach* OR attach* OR recovery OR strain OR stress* OR burn* OR wellbeing OR wellbeing OR satisfaction OR affect OR engage* OR thriving OR exhaust* OR cynicism OR depersonal* OR happiness OR emotion