

Technostress and Coping in the Digital Workplace: A Systematic Review of Stress Creators, Coping Strategies, and Organizational Moderators

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Abstract

This systematic review synthesizes evidence from 58 empirical studies (2010–2025) examining technostress creators and coping strategies across diverse occupational contexts. Techno-overload emerged as the most frequently studied stressor, followed by techno-invasion and techno-complexity, consistently predicting burnout, emotional exhaustion, and diminished job satisfaction. Problem-focused and proactive coping strategies, particularly technology self-efficacy, IT mindfulness, and training, demonstrated the most robust effectiveness in mitigating negative outcomes, while reactive strategies showed context-dependent utility. Organizational technostress inhibitors and perceived organizational support consistently buffered technostress effects, with amplified benefits in remote and hybrid work arrangements. Individual moderators, notably self-efficacy and age (with older workers exhibiting paradoxically lower strain despite higher perceived complexity), significantly shaped coping efficacy. Despite emerging frameworks distinguishing techno-eustress from techno-distress, approximately three-quarters of studies focused exclusively on negative outcomes, leaving the positive potential of technology understudied. The review reveals critical methodological limitations, including heavy reliance on cross-sectional self-report designs (35 of 58 studies) and substantial heterogeneity in coping operationalization, limiting causal inference. These findings advance a contingency model wherein coping effectiveness depends upon the specific techno-stressor, available resources, and work arrangement context.

Keywords: Technostress, technostress creators, coping strategies, perceived organizational support, digital workplace, systematic review

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Introduction

The contemporary workplace is characterized by an unprecedented acceleration of digital transformation, where information and communication technologies (ICT) have become embedded in virtually every occupational domain (Rohwer et al., 2022). From electronic medical records in healthcare (Bail et al., 2023) to learning management systems in education (Tu et al., 2025) and algorithmic management in finance (Hang et al., 2022), employees increasingly depend upon digital infrastructures to execute core job functions. While these technologies promise enhanced productivity and flexibility, they simultaneously generate a paradoxical phenomenon known as technostress. Defined by Tarafdar et al. (2010) as a modern maladaptation resulting from an individual's inability to cope with emerging technologies in a healthy manner, technostress represents a significant threat to employee well-being and organizational effectiveness. Despite nearly two decades of research since the formalization of the five canonical technostress creators, techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty (Tarafdar et al., 2010), organizations continue to struggle with mitigating its deleterious effects. The persistence of this challenge suggests that merely identifying stressors is insufficient; understanding how employees and organizations can effectively cope with technostress remains an urgent scholarly and practical imperative (Tarafdar et al., 2015).

Existing literature reveals a troubling pattern: while the negative consequences of technostress are well-documented across diverse sectors including healthcare, education, and information technology (Di Dalmazi et al., 2022; Kassim et al., 2021; Kot, 2022), the evidence regarding coping effectiveness remains fragmented and contradictory (Pirkkalainen et al., 2019). Cross-sectional studies consistently demonstrate associations between technostress and burnout, emotional exhaustion, and diminished job satisfaction (Bail et al., 2023; Tu et al., 2025), yet longitudinal and intervention research capable of establishing causal pathways remains scarce (Hauk et al., 2019; Makowska-Tłomak et al., 2022). Moreover, the coping strategies examined, from psychological detachment and IT mindfulness to organizational technostress inhibitors, demonstrate highly variable effectiveness across studies (Hang et al., 2022; Hashim et al., 2024), suggesting that contextual factors such as work arrangement (Harunavamwe & Kanengoni, 2023), sectoral differences (Cazan & Maican, 2023), and individual resource profiles (Zhang et al., 2025) critically moderate these relationships. This inconsistency creates a significant knowledge gap for practitioners seeking evidence-based interventions and for theorists attempting to model the technostress process.

Several specific gaps in the current literature necessitate systematic synthesis. First, the operationalization of coping strategies lacks standardization, with studies employing heterogeneous measures ranging from validated psychometric scales (Hauk et al., 2019) to ad-hoc single-item indicators (Pflügner et al., 2020), complicating cross-study comparisons and cumulative knowledge development. Second, the literature exhibits a pronounced imbalance toward techno-distress (negative stress) while neglecting techno-eustress (positive stress), with approximately three-quarters of studies focusing exclusively on pathological outcomes (Nascimento et al., 2025) despite emerging theoretical frameworks suggesting that technology can function as a challenge stressor under specific conditions (Buzás et al., 2025). Third, the moderating roles of individual characteristics such as IT mindfulness (Zhang et al., 2025) and self-efficacy (Ibrahim et al., 2021), alongside organizational resources such as perceived organizational support (Harunavamwe et al., 2025) and digital leadership (Rademaker & Süß, 2025), remain insufficiently integrated into comprehensive models. Finally, the

methodological dominance of cross-sectional, self-report designs (Leitner & Rašticová, 2024) limits causal inference and obscures the temporal dynamics of coping effectiveness.

This systematic review addresses these gaps by synthesizing empirical evidence from 58 studies spanning diverse geographic contexts, sectors, and methodological approaches. By examining which technostress creators are most frequently studied, how coping strategies are operationalized, and under what conditions specific interventions prove effective, this review advances a contingency model of technostress coping. The contribution is threefold: theoretically, it integrates the challenge-hindrance stressor framework (Buzás et al., 2025) with conservation of resources theory (Goetz & Boehm, 2020) to explain when technostress becomes debilitating versus motivating; methodologically, it critiques the field's reliance on cross-sectional designs while highlighting exemplars of longitudinal and intervention research (Hauk et al., 2019; Nascimento et al., 2025); and practically, it provides nuanced guidance for organizations navigating the complexities of remote and hybrid work arrangements (Jakstiene et al., 2025), where traditional support mechanisms may prove insufficient.

Literature Review

Theoretical Foundations and the Technostress Phenomenon

The study of technostress rests primarily upon the Technostress Model developed by Tarafdar et al. (2010), which identifies five distinct creators: techno-overload (excessive workload and information), techno-invasion (work-life boundary violations), techno-complexity (difficulty understanding technology), techno-insecurity (job security threats from automation), and techno-uncertainty (constant system upgrades). These creators operate through distinct mechanisms, overload depleting cognitive resources, invasion disrupting recovery boundaries, complexity undermining competence perceptions, to produce consistent negative outcomes including burnout, emotional exhaustion, and reduced job satisfaction (Di Dalmazi et al., 2022; Kassim et al., 2021). However, the model's explanatory power regarding mitigation strategies remains limited, necessitating integration with broader stress theories. The Conservation of Resources (COR) theory provides a complementary lens, suggesting that proactive and problem-focused coping strategies function by expanding resource reserves (such as technology self-efficacy and digital literacy), thereby buffering the resource loss spirals initiated by technostress creators (Goetz & Boehm, 2020; Ibrahim et al., 2021).

The Fragmented Landscape of Coping Strategies

Despite recognition that coping mechanisms represent the critical nexus between technostress exposure and occupational outcomes, the literature reveals significant conceptual and measurement fragmentation (Pirkkalainen et al., 2019). Studies variously categorize coping as problem-focused versus emotion-focused, proactive versus reactive, or functional versus dysfunctional, with little consistency in operationalization. For instance, while some researchers utilize validated scales distinguishing deliberate proactive strategies (positive reinterpretation, IT control) from instinctive reactive behaviors (distress venting, behavioral disengagement) (Pirkkalainen et al., 2019), others employ ad-hoc measures capturing isolated behaviors such as digital detox (Gaju, 2025) or social support seeking (Azpíroz-Dorronsoro et al., 2023). This heterogeneity complicates efforts to identify which strategies consistently prove effective. Furthermore, few studies examine coping portfolios or interaction effects between strategies, instead analyzing single interventions in isolation (Valta et al., 2021). This fragmentation represents a critical gap, as real-world coping likely involves coordinated bundles of strategies rather than discrete, isolated behaviors.

Contextual Moderators: The Missing Link in Coping Effectiveness

The inconsistent findings regarding coping effectiveness can be attributed substantially to neglected contextual factors. Individual moderators, particularly technology self-efficacy and IT mindfulness, emerge consistently as buffers that attenuate negative relationships between technostress and outcomes (Zhang et al., 2025; Cazan & Maican, 2023). Age presents a paradoxical pattern: older workers perceive higher techno-complexity yet experience less overall strain due to reduced reliance on maladaptive coping strategies and greater deployment of problem-focused approaches (Hauk et al., 2019; Vijay & Mane, 2026). At the organizational level, perceived organizational support (POS) demonstrates robust moderating effects, particularly in remote and hybrid work settings where physical proximity to support structures is absent (Harunavamwe & Ward, 2022; Harunavamwe et al., 2025). Digital leadership, including transformational and health-oriented leadership styles, further shapes the coping-outcome relationship, though findings suggest dual effects wherein certain leadership behaviors may simultaneously increase perceived stressors while enhancing recovery resources (Rademaker & Süß, 2025; Kräft et al., 2024).

The work arrangement itself constitutes a critical yet under-theorized contextual layer. The COVID-19 pandemic accelerated the proliferation of remote and hybrid work, amplifying the salience of ICT self-efficacy and organizational technostress inhibitors (literacy facilitation, technical support provision) (Hang et al., 2022; Hashim et al., 2024). Research indicates that organizational support mechanisms prove more critical in remote settings than in traditional office environments, likely because remote work reduces access to informal social resources while intensifying techno-invasion through boundary dissolution (Harunavamwe & Kanengoni, 2023; Nuutinen & Bordi, 2024). Sectoral differences further complicate generalizations: educational contexts emphasize training and creative self-efficacy as conversion mechanisms for technostress (Saleem et al., 2021), while healthcare prioritizes health-oriented leadership and work-life balance interventions (Kräft et al., 2024), and financial sectors demonstrate particular sensitivity to literacy facilitation and technical support provision (Hang et al., 2022).

The Eustress Blindspot: Toward a Balanced Conceptualization

A striking limitation of extant research is the overwhelming focus on techno-distress at the expense of techno-eustress. While approximately three-quarters of studies examine exclusively negative outcomes, emerging frameworks propose that technostress creators can function as challenge stressors prompting growth, learning, and enhanced performance when employees possess adequate resources (Buzás et al., 2025). The challenge-hindrane stressor framework classifies techno-uncertainty and techno-overload as potential challenge stressors that can enhance voice behavior and intrinsic motivation, whereas techno-insecurity and techno-complexity function as hindrance stressors with exclusively negative effects (Buzás et al., 2025). The holistic technostress model further advances this conceptualization by demonstrating that technology usefulness generates positive psychological responses longitudinally through mediating mechanisms including IT mindfulness and coping flexibility (Nascimento et al., 2025). Novel concepts such as "technorest" (situations where technology reduces stress), "techno-shields" (protective technology features), and "techno-security" (enhanced safety feelings through technology use) offer additional lenses for understanding the bright side of workplace technology (Willermark et al., 2023). Nevertheless, the empirical foundation for techno-eustress remains thin, with limited understanding of how coping strategies differentially relate to eustress versus distress outcomes (Jain et al., 2024).

Methodological Limitations and the Need for Systematic Synthesis

The field's reliance on cross-sectional survey designs (comprising 35 of 58 studies) fundamentally constrains causal interpretation and obscures temporal dynamics (Leitner & Rašticová, 2024). While four longitudinal studies provide preliminary evidence for directional effects, demonstrating that IT mindfulness and coping flexibility predict positive psychological responses over time (Nascimento et al., 2025; Zhang et al., 2025) and that age-coping relationships remain stable across eight months (Hauk et al., 2019), the single intervention study offers the only experimental evidence that structured programs can reduce technostress, albeit with modest effect sizes (Makowska-Tłomak et al., 2022). Common method variance presents an additional threat to validity, as the predominance of self-report data may inflate observed relationships between technostress perceptions and reported outcomes (Jakstiene et al., 2025). These methodological constraints necessitate systematic synthesis that attends to study design quality while mapping the consistency of findings across diverse operationalizations and contexts. Given these theoretical gaps regarding the eustress-distress distinction, the fragmented operationalization of coping strategies, the under-examined role of contextual moderators such as remote work arrangements, and the methodological limitations of primary studies, this systematic review addresses the following research questions:

RQ1. What technostress creators (techno-overload, -invasion, -complexity, -insecurity, -uncertainty) are most frequently studied, and which outcomes are most consistently linked to them (burnout, exhaustion, job satisfaction, performance)?

RQ2. Which coping strategies (problem-focused, emotion-focused, proactive, reactive, coping portfolios) are examined, and how are they operationalized/measured?

RQ3. Which coping strategies show the most consistent "effectiveness" patterns (e.g., reduced burnout, improved performance), and under what conditions (job type, sector, intensity of ICT use, remote/hybrid work)?

RQ4. Which individual moderators (self-efficacy, personality traits, IT mindfulness) and organizational moderators (digital leadership, perceived organizational support, technical support) shape the coping outcome relationship?

RQ5. How does coping relate to "techno-eustress" vs "techno-distress," and what frameworks explicitly model the bright side of technostress?

Method

This systematic review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to ensure transparency and reproducibility. A comprehensive literature search was conducted using major academic databases commonly used in communication, information systems, and organizational research. Specifically, the databases Scopus, Web of Science, and Google Scholar were used to retrieve relevant studies published between 2010 and 2025. These databases were selected because they provide extensive coverage of peer-reviewed journals across multiple disciplines and are widely used in systematic review studies to ensure comprehensive literature retrieval. The search query was constructed to capture the intersection of technostress creators, coping strategies, and occupational outcomes: "*technostress creators (techno-overload, techno-invasion, techno-complexity, techno-insecurity, techno-uncertainty) AND coping strategies (problem-focused, emotion-focused, proactive, reactive) AND outcomes (burnout, exhaustion, job satisfaction, performance) AND moderators (self-efficacy, IT mindfulness, organizational support)*". This query returned 1,000 potentially relevant records for initial screening.

Eligibility Criteria

Studies were included based on the following criteria: (1) explicit measurement of technostress or its specific dimensions (techno-overload, techno-invasion, techno-complexity, techno-insecurity, techno-uncertainty); (2) examination of coping strategies in response to technology-related stressors; (3) involvement of working adults/employees using ICT as part of job responsibilities; (4) measurement of at least one relevant outcome (burnout, exhaustion, job satisfaction, performance, well-being, techno-eustress, or techno-distress); (5) empirical research design (quantitative, qualitative, mixed-methods, systematic review, or meta-analysis); (6) minimum sample size of 10 participants (or systematic review/meta-analysis status); and (7) publication in English or other languages with sufficient metadata for extraction. Exclusion criteria comprised theoretical papers without empirical data, editorials, opinion pieces, and studies focusing solely on general workplace stress without specific reference to technology.

Study Selection

The selection process involved two stages. First, abstract screening of the initial 1,000 records identified 121 papers meeting preliminary eligibility criteria. Second, full-text screening of these 121 papers against all inclusion criteria resulted in 58 final studies. Following the PRISMA flow 1,000 records identified through database searching; 879 records excluded during abstract screening; 121 full-text articles assessed; and 63 excluded during full-text screening (due to lack of coping measurement, non-workplace samples, or theoretical focus), leaving 58 studies for qualitative synthesis.

Data Extraction

Data extraction utilized a structured protocol implemented through a large language model to ensure consistency across the nine extraction domains: (1) *Technostress Creators & Outcomes*, specific creators examined, associated outcomes (burnout, satisfaction, performance), effect directions, and eustress/distress categorizations; (2) *Coping Strategies & Measurement*, strategy types (problem-focused, emotion-focused, proactive, reactive), operationalization methods, scales used, and distinctions between deliberate versus instinctive approaches; (3) *Coping Effectiveness & Conditions*, evidence of strategy effectiveness, magnitude of effects (correlations, regression coefficients, β -values), contextual conditions (sector, remote/hybrid status, ICT intensity), and interaction effects; (4) *Moderating Factors*, individual moderators (self-efficacy, IT mindfulness, age, gender), organizational moderators (leadership, POS, technical support), and task/technology moderators; (5) *Eustress vs. Distress Framework*, explicit examination of techno-eustress, theoretical frameworks modeling positive technostress, and conditions generating eustress versus distress; (6) *Study Population & Context*, industry/sector, job roles, organizational characteristics, work arrangements, geographic location, and sample demographics; (7) *Theoretical Framework*, foundational theories (Technostress Model, Job Demands-Resources, Transactional Model of Stress and Coping); (8) *Study Design & Methods*, research design (cross-sectional, longitudinal, experimental), analytical approaches, sample sizes, and time frames; and (9) *Quality Indicators*, limitations affecting interpretation (common method variance, self-report bias, generalizability constraints).

Quality Assessment and Risk of Bias

Given the predominance of cross-sectional designs (35 of 58 studies), the study noted limitations regarding causal inference and common method variance. Four longitudinal studies (Hauk et al., 2019; Nascimento et al., 2025; Zhang et al., 2025; Goetz & Boehm, 2020) provided stronger evidence for directional effects. The single experimental intervention study

(Makowska-Tłomak et al., 2022) offered the only causal evidence regarding technostress reduction through structured programs. This study assessed studies for self-report bias, response rates, and sample representativeness, noting that several employed time-lagged designs or multi-method approaches to mitigate common method variance (Hang et al., 2022; Jakstiene et al., 2025).

Results

Characteristics of Included Studies

The 58 included sources span publication years from 2010 to 2025 and encompass a wide range of industries, geographic contexts, and methodological approaches. The majority employ cross-sectional survey designs, though several longitudinal, qualitative, mixed-methods, and review studies are also represented. Full texts were retrieved for all 58 sources. The studies were conducted across at least 20 countries, with a notable concentration in Germany (12 studies), followed by South Africa, Indonesia, Pakistan, and Portugal. Education was the most frequently studied sector (approximately 22 studies), followed by healthcare (5 studies), finance/banking (4 studies), and IT/technology-intensive industries (3 studies). Sample sizes ranged from 10 participants in qualitative case studies to 8,019 in the largest longitudinal survey. The dominant study design was cross-sectional survey (35 studies), supplemented by six systematic or scoping reviews, five qualitative studies, five mixed-methods designs, and four longitudinal studies. Only one study employed an intervention design (Makowska-Tłomak et al., 2022).

RQ1: Technostress Creators and Associated Outcomes

The five canonical technostress creators from the Tarafdar framework, techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty, were studied across the corpus with varying frequency.

Techno-overload was the most frequently examined creator, appearing in the vast majority of studies either as a named construct or through related concepts such as information overload and work overload. Techno-invasion was the second most studied, followed by techno-complexity, techno-insecurity, and techno-uncertainty. A substantial number of studies (approximately 25) examined all five canonical creators simultaneously (Hang et al., 2022; Harunavamwe & Ward, 2022; Harunavamwe & Kanengoni, 2023; Hauk et al., 2019; Kot, 2022; Rohwer et al., 2022; Tarafdar et al., 2010). Several studies introduced additional or emergent creators beyond the standard five, including AI-induced stress (Alanazi & Altukhys, 2025), techno-unreliability and IT-based monitoring (Valta et al., 2021), and communication overload (Kamandulyté, 2025).

Regarding outcomes, burnout and emotional exhaustion were the most consistently linked consequences, reported across virtually every quantitative study. Job satisfaction and work engagement showed consistent negative associations with technostress creators (Bail et al., 2023; Kot, 2022; Tu et al., 2025). Work performance and productivity were negatively associated in most studies (Di Dalmazi et al., 2022; Pirkkalainen et al., 2019; Tarafdar et al., 2010, 2015), with the notable exception of Saleem et al. (2021), who found a positive association between technostress and performance under conditions of training and creative self-efficacy. Work-family conflict emerged as a key social outcome of techno-invasion specifically (Azpíroz-Dorransoro et al., 2023; Jain et al., 2024; Kräft et al., 2024; Lauber, 2016).

The specificity of creator-outcome linkages was addressed in several studies. Techno-overload most consistently predicted affective strain and emotional exhaustion (Di Dalmazi et al., 2022; Kassim et al., 2021). Techno-invasion was distinctly linked to work-family/work-privacy conflict and both affective and cognitive strain (Di Dalmazi et al., 2022; Kräft et al.,

2024). Techno-complexity was strongly linked to cognitive strain and occupational strains with large effect sizes ($\beta = 0.72$; Fieseler et al., 2014; Wahl et al., 2023). Techno-insecurity showed significant associations with burnout in academic samples ($\beta = 0.316$; Hashim et al., 2024) and with negative health outcomes (Goetz & Boehm, 2020). Techno-uncertainty was notable for its dual nature: it predicted burnout in many studies (Hashim et al., 2024) but was identified as a challenge stressor positively influencing voice behavior and intrinsic motivation (Buzás et al., 2025).

RQ2: Coping Strategies Examined and Their Operationalization

The coping strategies identified across the 58 studies can be organized into several overlapping categories: problem-focused, emotion-focused, proactive, reactive, and organizational-level strategies. The most frequently examined individual coping strategies were seeking support and training/skill-building (problem-focused), mindfulness and emotional regulation (emotion-focused), and psychological detachment (proactive). At the organizational level, the Ragu-Nathan et al. (2008) technostress inhibitors framework, comprising literacy facilitation, technical support provision, and involvement facilitation, was the most widely used measurement approach, employed in at least six studies (Cazan & Maican, 2023; Hang et al., 2022; Hashim et al., 2024; Kot, 2022; Tu et al., 2025).

The distinction between proactive and reactive coping was most explicitly operationalized by Pirkkalainen et al. (2019), who conceptualized positive reinterpretation and IT control as deliberate proactive strategies and distress venting and distancing from IT as instinctive reactive behaviors. Hauk et al. (2019) distinguished between functional coping (active coping, seeking social support) and dysfunctional coping (behavioral disengagement), using scales with strong reliability ($\alpha = .87-.91$). Nascimento and Correia (2025) developed and validated the Flexible Coping with Technostress Scale (FCTS-PT), a 6-item instrument capturing the adaptability of coping strategy deployment. Few studies examined coping portfolios or combinations of strategies. Pirkkalainen et al. (2019) analyzed interaction effects between proactive and reactive strategies. Valta et al. (2021) proposed a three-pillar framework combining IT preparation, employee skill improvement, and corporate culture creation. Most studies, however, examined strategies in isolation rather than as coordinated bundles.

RQ3: Effectiveness of Coping Strategies and Contextual Conditions

Technology self-efficacy and training consistently showed positive effects across studies. Tarafdar et al. (2015) found that technology competence improved technology-enabled innovation and performance, while Saleem et al. (2021) demonstrated that training significantly moderated the technostress-performance relationship, with high levels of training converting technostress into a positive performance driver. Cazan and Maican (2023) reported that technology self-efficacy was the strongest predictor of e-learning platform use and satisfaction, counteracting uncertainty-induced stress. In AI-integrated environments, digital literacy served as a powerful mediator buffering technostress effects on productivity (Khalid et al., 2025).

IT mindfulness emerged as a consistently effective proactive strategy. Zhang et al. (2025) found that it accounted for 8.1% of unique variance in self-care efficacy, with an interaction coefficient of $b = 0.364$ in moderating the overload-efficacy relationship. Nascimento et al. (2025) identified IT mindfulness as the strongest predictor of positive psychological responses in a longitudinal design. Azpíroz-Dorransoro et al. (2023) found that mindfulness reduced both techno-stressors and emotional exhaustion. Psychological detachment showed buffering effects specifically for certain burnout dimensions. Nuutinen and Bordi (2024) reported that detachment moderated the effect of technostress on cynicism and a sense of inadequacy ($\beta =$

-0.13 for technostress × detachment on cynicism). Mondo et al. (2023) found that psychological detachment moderated the mediated path from workload to well-being through techno-invasion. Digital detox behaviors, turning off notifications, avoiding screens before bed, and taking offline breaks, showed positive effects in a sample of 403 German teleworkers, though the magnitude was not quantified (Gaju, 2025).

Emotional regulation was identified as an inhibitor of technostress among higher education teachers, enhancing perceived efficacy in ICT use, job satisfaction, and empathy (Miranda Rosas et al., 2024). However, the evidence for emotion-focused strategies was more mixed than for problem-focused approaches. Guerrero Vásquez and Granizo Lara (2023) found that several coping strategies, including both active coping and emotional strategies like positive reinterpretation, correlated positively with technostress symptoms rather than negatively, suggesting that in some contexts, the deployment of coping strategies is a marker of distress severity rather than evidence of mitigation. Reactive coping behaviors showed context-dependent effectiveness. Pirkkalainen et al. (2019) found that distress venting and distancing from IT diminished the negative effect of technostress creators on productivity, but these were more effective when combined with proactive strategies. Kassim et al. (2021) reported that reactive coping showed a significant relationship with technostress reduction, whereas proactive coping did not reach significance. Conversely, Hauk et al. (2019) found that behavioral disengagement was a maladaptive strategy, though older workers used it less and thereby experienced less strain.

Organizational technostress inhibitors (literacy facilitation, technical support, involvement facilitation) showed consistent but variable effects. Tu et al. (2025) found technostress inhibitors had a significant negative relationship with burnout ($\beta = -0.210, p < .001$) and technostress creators ($\beta = -0.324, p < .001$), and a positive effect on commitment ($\beta = 0.503, p < .001$). Hang et al. (2022) reported significant positive moderating effects for literacy facilitation ($\beta = 0.092, p < .05$) and technical support ($\beta = 0.134, p < .01$) on the technostressor-well-being relationship. Hashim et al. (2024) found that literacy facilitation moderated the technology uncertainty-burnout link ($\beta = 0.206, p = .006$) and involvement facilitation moderated the technology invasion-burnout link ($\beta = 0.166, p = .05$). Perceived organizational support (POS) was particularly influential in hybrid and virtual work settings. Harunavamwe et al. (2025) reported that POS partially mediated the technostress-work engagement relationship and fully mediated the technostress-workplace flourishing relationship. Harunavamwe and Ward (2022) found that POS displayed the strongest direct effect on workplace flourishing.

Communication measures showed both positive and adverse effects. Pflügner et al. (2020) identified five communication measures that reduced techno-invasion and techno-overload, but none was limitation-free; some measures reduced one form of technostress while exacerbating another. Similarly, Valta et al. (2021) found that measures like an email ticket system and corporate culture around email reduced specific stressors, but presence days and wellness activities did not directly reduce techno-stressors. Leadership emerged as an important organizational resource. Rademaker and Süß (2025) found that transformational leadership showed a dual effect: it increased perceived techno-stressors but also enhanced recovery, reducing emotional exhaustion overall. Health-oriented leadership moderated the social environment-work-privacy conflict relationship among nurses (Kräft et al., 2024). Fieseler et al. (2014) reported significant indirect effects of supportive leadership communication ($\beta = -0.39$) on work and occupational strains.

The sole intervention study, by Makowska-Tłomak et al. (2022), found that a blended online intervention based on cognitive behavioral therapy and social cognitive therapy significantly decreased digital transformation stress among active participants ($MT_1 = 3.23$, $MT_2 = 3.00$, $t(432) = 1.96$, $p = .051$) and disengagement ($MT_1 = 3.20$, $MT_2 = 2.39$, $t(430) = 2.59$, $p = .010$). However, no significant increase in self-efficacy was observed.

Effectiveness patterns varied across work arrangements. Resources like POS and work-life balance policies were particularly critical in hybrid and virtual settings (Harunavamwe & Kanengoni, 2023; Harunavamwe & Ward, 2022; Harunavamwe et al., 2025). ICT self-efficacy and literacy support showed stronger effects for hybrid workers compared to office-based workers (Jakstiene et al., 2025). School support buffered technostress effects more effectively when ICT availability demands were high, suggesting that organizational resources become more important as technology demands increase (Nuutinen & Bordi, 2024). In the education sector, training and creative self-efficacy were effective in converting technostress into performance gains (Saleem et al., 2021), while in healthcare, health-oriented leadership and work-life balance interventions were prioritized (Kräft et al., 2024; Virone et al., 2021). In the banking and finance sector, literacy facilitation and technical support provision showed significant moderating effects on well-being (Hang et al., 2022), while social support and mindfulness reduced emotional exhaustion (Azpíroz-Dorronsoro et al., 2023).

RQ4: Individual and Organizational Moderators

Self-efficacy (technology-specific or general) was the most frequently identified individual moderator, appearing across at least eight studies. It consistently buffered the negative effects of technostressors on outcomes including job satisfaction, performance, and well-being (Cazan & Maican, 2023; Ibrahim et al., 2021; Lauber, 2016; Tarafdar et al., 2015). IT mindfulness functioned similarly, attenuating the negative impact of technology overload on self-care self-efficacy (Zhang et al., 2025) and strengthening positive psychological responses to technostressors over time (Nascimento et al., 2025). Age showed a paradoxical pattern: older workers perceived higher techno-complexity (Leitner & Rašticová, 2024; Vijay & Mane, 2026) but demonstrated lower technology-related strain due to reduced use of maladaptive coping (behavioral disengagement) and greater reliance on problem-focused strategies (Hauk et al., 2019; Vijay & Mane, 2026). The F-ratio of 31.42 in Vijay and Mane (2026) indicated substantial differences in coping mechanisms between age groups.

POS was the most extensively studied organizational moderator, with three studies from the same research group (Harunavamwe et al.) consistently demonstrating its mediating role between technostress and positive work outcomes in South African higher education (Harunavamwe & Kanengoni, 2023; Harunavamwe & Ward, 2022; Harunavamwe et al., 2025). Goetz and Boehm (2020) provided evidence from the largest sample ($N = 8,019$) that the combined availability of organizational support for strengths use and friendship opportunities created an intensified buffering effect against technological insecurity that surpassed additive individual effects. Notably, several moderators showed non-linear or dual effects. Transformational leadership simultaneously intensified perceived techno-stressors while providing recovery resources (Rademaker & Süß, 2025). Resilience helped manage technostress in general but, paradoxically, employees with high resilience experienced stronger negative impacts on well-being from techno-exhaustion (Singh et al., 2022). Involvement facilitation had mixed effects, with some studies showing positive moderation and others showing negative effects depending on context (Hang et al., 2022).

RQ5: Techno-Eustress vs. Techno-Distress Frameworks

Most studies in the corpus (approximately 42 of 58) focused exclusively on techno-distress, the negative side of technostress. Only a minority explicitly examined or acknowledged technoeustress. The challenge-hindrance stressor framework was the primary lens through which eustress was distinguished from distress. Buzás et al. (2025) classified techno-uncertainty and techno-overload as challenge stressors with positive effects on voice behavior, intrinsic motivation, and affective commitment, while techno-insecurity and techno-complexity emerged as hindrance stressors with negative effects. This dual classification was supported by Wang et al. (2023), who found that work overload was positively associated with challenge appraisal but negatively with threat appraisal, while work-home conflict showed the reverse pattern.

Nascimento et al. (2025) provided the most sustained longitudinal examination of technoeustress, using a holistic technostress model to demonstrate that technology usefulness led to positive psychological responses over time, mediated by IT mindfulness, coping flexibility, and synergic literacy. This study explicitly framed technostress as a process that includes both negative (techno-distress) and positive (technoeustress) sides (Nascimento et al., 2025). Willermark et al. (2023) contributed a novel conceptual contribution with the concept of "technorest", situations where technology reduces rather than increases stress, alongside "techno-shields" (technology features that protect against stress) and "techno-security" (increased feelings of safety through technology use). Several studies also noted that technology can serve as both stressor and resource (Ibrahim et al., 2021; Jakstiene et al., 2025; Rohwer et al., 2022), but did not develop formal frameworks for this duality.

Coping strategies related differently to eustress and distress contexts. Challenge coping responses, such as problem-solving, skill acquisition, and positive reinterpretation, were associated with eustress outcomes (Jain et al., 2024), while avoidance and emotion-focused coping were more common in distress contexts (Alanazi & Altukhys, 2025). Saleem et al. (2021) demonstrated that the presence of training and creative self-efficacy could transform what would otherwise be distress into eustress, yielding performance gains.

Discussion

The findings across the 58 studies reveal several patterns of convergence and divergence that merit careful interpretation. The predominant finding is a negative association between technostress creators and outcomes such as burnout, job satisfaction, and performance. However, this relationship is not uniform. Saleem et al. (2021) found a positive technostress-performance link among Pakistani university instructors during COVID-19, while virtually all other studies found negative associations (Tarafdar et al., 2010, 2015; Tu et al., 2025). This divergence is best explained through the challenge-hindrance framework: when individuals possess adequate resources (training, self-efficacy), technostress can function as a challenge stressor prompting growth (Jain et al., 2024; Buzás et al., 2025). The critical variable is not the technostressor itself but the resource environment in which it occurs. Studies finding negative effects predominantly examined populations under high demand with limited support (Di Dalmazi et al., 2022; Harunavamwe & Ward, 2022; Harunavamwe & Kanengoni, 2023), while the positive finding emerged in a context where training and self-efficacy were explicitly measured as moderators (Saleem et al., 2021).

The inconsistency in coping effectiveness findings can be partially explained by contextual and methodological differences. Proactive and problem-focused strategies (self-efficacy, training, IT mindfulness) show the most consistent positive effects across the broadest range of contexts (Tarafdar et al., 2015; Zhang et al., 2025; Nascimento et al., 2025; Cazan & Maican, 2023). These strategies operate by expanding the individual's resource base,

consistent with Conservation of Resources theory (Alanazi & Altukhys, 2025; Goetz & Boehm, 2020). Reactive strategies show more variable effectiveness because their utility depends on the nature of the stressor. Distancing from IT is effective when the stressor is techno-invasion (boundary-related) but less helpful for techno-complexity (competence-related) (Pirkkalainen et al., 2019). Behavioral disengagement is generally maladaptive (Hauk et al., 2019), but younger workers use it more frequently, which may partly explain age-related differences in strain outcomes (Hauk et al., 2019).

Organizational strategies face a specific challenge: many reduce one techno-stressor while potentially exacerbating another. For instance, communication policies that restrict after-hours email may reduce techno-invasion but increase techno-overload during work hours (Pflügner et al., 2020). Valta et al. (2021) explicitly confirmed that no single organizational measure reduces all techno-stressors simultaneously, necessitating tailored combinations. The substantial proportion of studies conducted during or referencing the COVID-19 pandemic (approximately 25 studies) introduces important contextual considerations. Organizational support mechanisms were consistently more critical in remote and hybrid settings (Harunavamwe & Kanengoni, 2023; Harunavamwe & Ward, 2022; Harunavamwe et al., 2025), likely because these arrangements reduce access to informal social resources. ICT self-efficacy and literacy support showed particularly strong effects for hybrid workers compared to office-based workers (Jakstiene et al., 2025), suggesting that the buffering function of personal digital resources becomes more important when physical organizational support structures are less accessible.

The overwhelming reliance on cross-sectional surveys (35 of 58 studies) limits causal interpretation across the corpus. The four longitudinal studies (Goetz & Boehm, 2020; Hauk et al., 2019; Nascimento et al., 2025; Zhang et al., 2025) provide stronger evidence for directional effects: Hauk et al. (2019) demonstrated temporal stability of age-coping relationships over 8 months (Hauk et al., 2019), and Nascimento et al. (2025) showed that IT mindfulness and coping flexibility predicted positive psychological responses across two waves (Nascimento et al., 2025). The single intervention study (Makowska-Tłomak et al., 2022) provides the only experimental evidence that a structured program can reduce technostress, with effect sizes that are modest but significant. The field's heavy reliance on self-report data across studies raises concerns about common method variance, though several studies attempted to mitigate this through time-lagged designs (Hang et al., 2022; Zhang et al., 2025) or multi-method approaches (Jakstiene et al., 2025; Khalid et al., 2025; Leitner & Rašticová, 2024).

The evidence supports a contingency model of technostress coping: the effectiveness of any given strategy depends on (a) which technostress creator is dominant, (b) what individual resources are available, (c) what organizational support structures exist, and (d) whether the work arrangement is remote, hybrid, or in-person. Proactive strategies targeting competence and awareness (self-efficacy, IT mindfulness, training) represent the most robustly supported approaches, effective across diverse populations from German teleworkers (Gaju, 2025) to Pakistani university instructors (Saleem et al., 2021) to Chinese STEM teachers (Tu et al., 2025). Organizational strategies are most impactful when they address the specific techno-stressor present in the context and when they account for potential adverse effects on other stressor dimensions (Pflügner, 2023; Pflügner et al., 2020; Valta et al., 2021).

Limitations

This review is constrained by several methodological limitations inherent in the primary literature. First, the overwhelming reliance on cross-sectional, self-report designs, comprising 35 of the 58 included studies, fundamentally precludes causal inference and obscures the

temporal sequencing of coping deployment and outcome change, while simultaneously risking inflation of observed relationships due to common method variance. Second, substantial heterogeneity in the operationalization of coping strategies, ranging from validated psychometric scales to ad-hoc single-item indicators, complicates cross-study comparisons and likely obscures true effect sizes. Third, the contextual specificity of findings, particularly those derived from pandemic-era remote work contexts characterized by unprecedented ICT dependence, may limit generalizability to stable post-pandemic arrangements, while geographic concentration in Germany and South Africa potentially restricts applicability to other cultural contexts. Finally, publication bias toward significant pathological outcomes may have resulted in systematic underrepresentation of null findings and the near-total neglect of techno-eustress in approximately three-quarters of studies, thereby distorting the field's understanding of technology's dual nature as both stressor and resource.

Future Research Directions

Future inquiry must prioritize methodologically rigorous designs that enable causal inference, including longitudinal studies with multiple waves to disentangle directional relationships between coping resources and outcome trajectories, and experimental or quasi-experimental trials testing multi-component interventions combining training, mindfulness, and organizational support. The field urgently requires standardized, validated instruments capable of assessing coping portfolios and interaction effects between strategies rather than isolated behaviors, alongside objective measures of technology use (e.g., digital trace data) to complement self-reports and mitigate common method variance. Substantively, research must systematically investigate the techno-eustress paradigm by explicitly testing conditions under which techno-overload and techno-uncertainty function as challenge versus hindrance stressors, examining moderators such as autonomy and growth mindset, while also exploring emergent AI-induced stressors not captured by traditional frameworks. Finally, context-specific research should examine how coping effectiveness varies across the remote-hybrid-co-located continuum, with particular attention to the mechanisms of digital leadership and perceived organizational support in distributed work arrangements, and lifespan perspectives on how coping repertoires evolve with age and technological generational shifts.

References

- Alanazi, A., & Altukhys, A. (2025). Mapping the Impact: A Systematic Review of the Psychological and Social Repercussions of Technostress. *American Journal of Applied Scientific Research*, 11(4), Article 3951289, 203–210. <https://doi.org/10.11648/j.ajasr.20251104.13>
- Azpíroz-Dorronsoro, C., Fernández-Muñiz, B., Montes-Peón, J. M., & Vázquez-Ordás, C. J. (2024). Technostress and work-family conflict in ICT-user employees during the COVID-19 pandemic: the role of social support and mindfulness. *Behaviour & Information Technology*, 43(8), 1531–1553. <https://doi.org/10.1080/0144929X.2023.2220051>
- Bail, C., Harth, V., & Mache, S. (2023). Digitalization in Urology-A Multimethod Study of the Relationships between Physicians' Technostress, Burnout, Work Engagement and Job Satisfaction. *Healthcare (Basel, Switzerland)*, 11(16). <https://doi.org/10.3390/healthcare1162255>
- Buzás, B., Simon, A. C., Kiss, O. E., & Faragó, K. (2025). Navigating the digital landscape: Unraveling the interplay of challenge and hindrance components of technostress on employee voice behavior. *Frontiers in Psychology*, 16, 1434275. <https://doi.org/10.3389/fpsyg.2025.1434275>

- Cazan, A.- M., & Maican, C.- I. (2023). Factors determining the use of e-learning and teaching satisfaction. *Comunicar*, 31(74), 89–100. <https://doi.org/10.3916/c74-2023-07>
- Di Dalmazi, M., Mandolfo, M., Stringhini, C., & Bettiga, D. (2022). Influence of Technostress on Work Engagement and Job Performance During Remote Working. In D. Harris & W.-C. Li (Eds.), *Lecture Notes in Computer Science. Engineering Psychology and Cognitive Ergonomics* (Vol. 13307, pp. 149–163). Springer International Publishing. https://doi.org/10.1007/978-3-031-06086-1_12
- Fieseler, C., Grubenmann, S., Meckel, M., & Muller, S. (2014). The Leadership Dimension of Coping with Technostress. In *2014 47th Hawaii International Conference on System Sciences* (pp. 530–539). IEEE. <https://doi.org/10.1109/HICSS.2014.73>
- Gaju, A. (2025). Digital Detox in the Age of Hyperconnectivity: Organizational Strategies for Mitigating Technology Overload and Enhancing Employee Flourishing. *Proceedings of the International Conference on Research in Human Resource Management*, 2(1), 1–15. <https://doi.org/10.33422/icrhrm.v2i1.1119>
- Goetz, T. M., & Boehm, S. A. (2020). Am I outdated? The role of strengths use support and friendship opportunities for coping with technological insecurity. *Computers in Human Behavior*, 107, 106265. <https://doi.org/10.1016/j.chb.2020.106265>
- Guerrero Vásquez, E. M., & Granizo Lara, L. V. (2023). Estrategias de Afrontamiento ante el Tecnoestrés en docentes de la parroquia rural El Retiro, Machala, Ecuador. *LATAM Revista Latinoamericana De Ciencias Sociales Y Humanidades*, 4(3). <https://doi.org/10.56712/latam.v4i3.1082>
- Hang, Y., Hussain, G., Amin, A., & Abdullah, M. I. (2022). The Moderating Effects of Technostress Inhibitors on Techno-Stressors and Employee's Well-Being. *Frontiers in Psychology*, 12, 821446. <https://doi.org/10.3389/fpsyg.2021.821446>
- Harunavamwe, M., & Kanengoni, H. (2023). Hybrid and virtual work settings; the interaction between technostress, perceived organisational support, work-family conflict and the impact on work engagement. *African Journal of Economic and Management Studies*, 14(2), 252–270. <https://doi.org/10.1108/ajems-07-2022-0306>
- Harunavamwe, M., & Ward, C [Chené] (2022). The influence of technostress, work-family conflict, and perceived organisational support on workplace flourishing amidst COVID-19. *Frontiers in Psychology*, 13, 921211. <https://doi.org/10.3389/fpsyg.2022.921211>
- Harunavamwe, M., Ward, C [Chene], & Marange, T. (2025). Influence of technostress on work engagement and workplace flourishing: the mediating role of perceived organizational support. *Cogent Psychology*, 12(1), Article 2561437. <https://doi.org/10.1080/23311908.2025.2561437>
- Hauk, N., Göritz, A. S., & Krumm, S. (2019). The mediating role of coping behavior on the age-technostress relationship: A longitudinal multilevel mediation model. *PloS One*, 14(3), e0213349. <https://doi.org/10.1371/journal.pone.0213349>
- Ibrahim, A. M., Osman, M. N., Gusau, A. L., & Thi, P. (2021). Correlation of technostress creators with employees' work-life balance in the context of journalists' use of information and communication technology at work: Moderating role of self-efficacy. *International Journal of Media and Information Literacy*, 6(2), 338. <https://doi.org/10.13187/ijmil.2021.2.338>
- Jain, S., Varma, V., Vijay, T. S., & Cabral, C. (2024). Technostress at workplace: Antecedents, decisions and outcomes (ADO) and future research pathways through a systematic literature review. *Asian Journal of Business Research*, 14(3), 87–110. <https://doi.org/10.14707/ajbr.240182>

- Jakstiene, R., Urbanaviciute, I., Ziedelis, A., & Lazauskaite-Zabielske, J. (2025). Struggling or Thriving With Technology at Work: A Mixed-Method Analysis of Personal and Organizational ICT Resources. *Human Behavior and Emerging Technologies*, 2025(1), Article 5422987. <https://doi.org/10.1155/hbe2/5422987>
- Kamandulytė, R. (2025). General and Digital Job Demands and Occupational Burnout: Understanding the Role of Personal and Organizational Resources. *Psichologija*, 74, 43–57. <https://doi.org/10.15388/psichol.2026.74.3>
- Kassim, E. S., Syed Ahmad, S. F., Bahari, A. H., Mohammad Fadzli, F. N., & Mohamad Adzmi, N. S. H. (2021). The Effect of Technostress on Emotional Exhaustion and Coping Strategies. *International Journal of Academic Research in Business and Social Sciences*, 11(5). <https://doi.org/10.6007/ijarbss/v11-i5/9856>
- Khalid, M. A., Sohail, M., Baig, M. M. B., Yusaf, S., Iqbal, A., & Syed, M. I. (2025). The Human-Centric Paradox of AI in HRM: How Technostress and Digital Literacy Co-Determine Employee Productivity in Smart Work Environments. *Inverge Journal of Social Sciences*, 4(4), 214–227. <https://doi.org/10.63544/ijss.v4i4.191>
- Kot, P. (2022). Role of technostress in job satisfaction and work engagement in people working with information and communication technologies. *Pakistan Journal of Psychological Research*, 37(3), 331–349. <https://doi.org/10.33824/pjpr.2022.37.3.20>
- Kräfte, J., Wirth, T., Harth, V., & Mache, S. (2024). Digital stress perception among German hospital nurses and associations with health-oriented leadership, emotional exhaustion and work-privacy conflict: A cross-sectional study. *BMC Nursing*, 23(1), 213. <https://doi.org/10.1186/s12912-024-01825-z>
- Lauber, F. (2016). *Negative Auswirkungen von Technostress auf die psychische Gesundheit von Mitarbeitenden eines Schweizer Telekommunikations-Unternehmens*. <https://doi.org/10.26041/FHNW-902>
- Leitner, I., & Rašticová, M. (2024). Exploring technostress dynamics in consulting companies in Germany: A mixed-methods approach. *Problems and Perspectives in Management*, 22(2), 586–599. [https://doi.org/10.21511/ppm.22\(2\).2024.46](https://doi.org/10.21511/ppm.22(2).2024.46)
- Makowska-Tłomak, E., Bedyńska, S., Skorupska, K., & Paluch, J. (2022). Blended Online Intervention to Reduce Digital Transformation Stress by Enhancing Employees' Resources in COVID-19. *Frontiers in Psychology*, 13, 732301. <https://doi.org/10.3389/fpsyg.2022.732301>
- Miranda Rosas, L. F., Quiroz Moya, M. S., Sanhueza Burgos, C. M., & Castellanos Alvarenga, L. M. (2024). Regulación Emocional y Tecnoestrés en docentes de educación superior. Una revisión sistemática. *Revista Logos Ciencia & Tecnología*, 16(1). <https://doi.org/10.22335/rlct.v16i1.1878>
- Mondo, M., Pileri, J., Barbieri, B., Bellini, D., & Simone, S. de (2023). The Role of Techno-Stress and Psychological Detachment in the Relationship between Workload and Well-Being in a Sample of Italian Smart Workers: A Moderated Mediated Model. *Social Sciences*, 12(10), 530. <https://doi.org/10.3390/socsci12100530>
- Nascimento, L., & Correia, M. (2025). Flexible coping with technostress in higher education teachers: Adaptation and validation of a scale. *Revista De Estudos E Investigação En Psicologia Y Educación*, 12(2), e11499. <https://doi.org/10.17979/reipe.2025.12.2.11499>
- Nascimento, L., Correia, M. F., & Califf, C. B. (2025). Techno-eustress under remote work: a longitudinal study in higher education teachers. *Education and Information Technologies*, 30(12), 16633–16670. <https://doi.org/10.1007/s10639-025-13459-y>

- Nuutinen, S., & Bordi, L. (2024). Technology use and employee well-being among teachers during Covid-19: moderating effects of school support and detachment from work. *International Journal of Educational Management*, 39(8), 57–76. <https://doi.org/10.1108/ijem-04-2023-0211>
- Pflügner, K. (2023). *Healthy workplace technology use: Understanding the formation and mitigation of technostress* [Doctoral dissertation]. University of Bamberg. <https://doi.org/10.20378/irb-91822>
- Pflügner, K., Reis, L., Maier, C., & Weitzel, T. (2020). Communication Measures to Reduce Techno-Invasion and Techno-Overload. In S. Laumer, J. Quesenberry, D. Joseph, C. Maier, D. Beimborn, & S. C. Srivastava (Eds.), *Proceedings of the 2020 Computers and People Research Conference* (pp. 114–122). ACM. <https://doi.org/10.1145/3378539.3393855>
- Pirkkalainen, H., Salo, M., Tarafdar, M., & Makkonen, M. (2019). Deliberate or Instinctive? Proactive and Reactive Coping for Technostress. *Journal of Management Information Systems*, 36(4), 1179–1212. <https://doi.org/10.1080/07421222.2019.1661092>
- Rademaker, T., & Süß, S. (2025). The Role of Transformational Leadership in Coping with Followers' Technostress. A Quantitative Analysis. *Management Revue*, 36(2), Article 44017. <https://doi.org/10.31083/mrev44017>
- Rohwer, E., Flöther, J.- C., Harth, V., & Mache, S. (2022). Overcoming the "Dark Side" of Technology-A Scoping Review on Preventing and Coping with Work-Related Technostress. *International Journal of Environmental Research and Public Health*, 19(6). <https://doi.org/10.3390/ijerph19063625>
- Saleem, F., Malik, M. I., Qureshi, S. S., Farid, M. F., & Qamar, S. (2021). Technostress and Employee Performance Nexus During COVID-19: Training and Creative Self-Efficacy as Moderators. *Frontiers in Psychology*, 12, 595119. <https://doi.org/10.3389/fpsyg.2021.595119>
- Singh, P., Bala, H., Dey, B. L., & Filieri, R. (2022). Enforced remote working: The impact of digital platform-induced stress and remote working experience on technology exhaustion and subjective wellbeing. *Journal of Business Research*, 151, 269–286. <https://doi.org/10.1016/j.jbusres.2022.07.002>
- Tarafdar, M., Pullins, E. B., & Ragu-Nathan, T. S. (2015). Technostress: negative effect on performance and possible mitigations. *Information Systems Journal*, 25(2), 103–132. <https://doi.org/10.1111/isj.12042>
- Tarafdar, M., Tu, Q., & Ragu-Nathan, T. S. (2010). Impact of Technostress on End-User Satisfaction and Performance. *Journal of Management Information Systems*, 27(3), 303–334. <https://doi.org/10.2753/MIS0742-1222270311>
- Tu, L., Rao, Z., Jiang, H., & Dai, L. (2025). Technostress, Burnout, and Job Satisfaction: An Empirical Study of STEM Teachers' Well-Being and Performance. *Behavioral Sciences (Basel, Switzerland)*, 15(7). <https://doi.org/10.3390/bs15070992>
- Valta, M., Pflügner, K., & Maier, C. (2021). Guiding Companies to Reduce Technostress: A Mixed-Methods Study Deriving Practice-Oriented Recommendations. In T. Bui (Ed.), *Proceedings of the Annual Hawaii International Conference on System Sciences, Proceedings of the 54th Hawaii International Conference on System Sciences*. Hawaii International Conference on System Sciences. <https://doi.org/10.24251/HICSS.2021.757>
- Vijay, S., & Mane, A. (2026). An Empirical Investigation into Age-Stratified Technostress and Adaptive Coping Modalities among Female Professionals in Pune. *International*

- Journal of Scientific Research in Engineering and Management*, 10(01), 1–9.
<https://doi.org/10.55041/ijrsrem.ibfe142>
- Virone, C., Kremer, L., & Breil, B. (2021). *Which Factors of Digitisation Bias the Work-Related Stress of Healthcare Employees? A Systematic Review*. *Studies in Health Technology and Informatics* (pp. 916–920). <https://doi.org/10.3233/SHTI210312>
- Wahl, I., Wolfgruber, D., & Einwiller, S. (2024). Mitigating teleworkers' perceived technological complexity and work strains through supportive team communication. *Corporate Communications: An International Journal*, 29(3), 329–345. <https://doi.org/10.1108/CCIJ-05-2023-0061>
- Wang, Q., Zhao, G., & Yao, N. (2024). Understanding the Impact of Technostress on University Teachers' Online Teaching During the COVID-19 Pandemic with the Transactional Theory of Stress (TTS). *The Asia-Pacific Education Researcher*, 33(1), 187–198. <https://doi.org/10.1007/s40299-023-00718-0>
- Willermark, S., Högberg, K., & Nilsson, P. (2023). Exploring technostress in disruptive teaching practices. *International Journal of Workplace Health Management*, 16(4), 328–343. <https://doi.org/10.1108/IJWHM-10-2022-0161>
- Zhang, B., Zhu, Z., Yang, L., Shu, M., Liu, Y., & Zhao, L. (2025). Digital Overload, Self-care self-efficacy, and Innovation Performance in the Age of AI: The Moderating Role of IT Mindfulness. *International Business Research*, 18(4), 1. <https://doi.org/10.5539/ibr.v18n4p1>