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TECHNOSTRESS IN THE DIGITAL WORKPLACE: ANTECEDENTS, CONSEQUENCES, THEORETICAL FOUNDATIONS, AND FUTURE RESEARCH DIRECTIONS

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Abstract
The rapid digitalization of work has made technostress the stress that individuals experience because of their use of information and communication technologies (ICTs) a central concern for information systems (IS) and organizational scholarship. This systematic literature review synthesizes peer-reviewed empirical and conceptual research published between 2010 and 2025 to consolidate what is known about the antecedents, mechanisms, and consequences of workplace technostress, the theories used to explain it, and the most consequential gaps that remain. Following the PRISMA 2020 reporting guidelines (Page et al., 2021), the review applies a transparent protocol covering database selection, Boolean search strings, screening, and quality appraisal. The synthesis is organized around the now-canonical technostress creators techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty first instrumented by Tarafdar et al. (2007) and Ragu-Nathan et al. (2008), and extended by work on technological antecedents (Ayyagari et al., 2011), inhibitors, coping, and the eustress–distress duality (Tarafdar et al., 2019); (Califf et al., 2020). In multiple studies, techno-overload and techno-invasion are the strongest correlates of strain, role stress, exhaustion, decreased satisfaction, decreased productivity, and decreased intentions to leave, while techno-complexity, techno-insecurity, and techno-uncertainty have weaker, less consistent effects, as supported in a recent meta-analytic study (Nastjuk et al., 2024). The review highlights four persistent gaps: (a) methodological focus on reliance on single-source cross-sectional surveys; (b) weak and underdeveloped theory of the mediating mechanisms; (c) limited attention to new contexts like remote and hybrid work, algorithmic management and tools based on artificial intelligence; and (d) geographic focus on Western and East-Asian samples. A conceptual model that connects antecedents with appraisal and coping strategies, contextual moderators, and multi-level outcomes is proposed and a staged research program is outlined. The review provides an integrated evidence base and a prioritized agenda to inform rigorous and context-sensitive technostress research and practice.

Keywords: Technostress; digital workplace; technostress creators; job demands–resources theory; conservation of resources; systematic literature review

1. Introduction
Today the information and communication technologies are the gluing of the modern world of work. Staff communicate via messaging apps, work in cloud-based applications, are tracked on analytics dashboards, and are now being augmented and disrupted by AI. Many of the technologies that increase productivity and flexibility create requirements that are hard for many workers to deal with: an ever increasing barrage of notifications, the blurring of boundaries between work and home, perpetual upgrades, and the implicit fear that one's skills will become irrelevant. The impact of all these demands in terms of stress experience by the individual due to the use of ICTs is termed as Technostress (Brod, 1984); (Ragu-Nathan et al., 2008); (Tarafdar et al., 2019).
In the last 15 years, technostress has evolved from a "side observation" into a veritable research program with instruments of measurement, its theoretical framework, and its growing empirical basis. The preliminary research confirmed the presence of a negative correlation between technostress and job satisfaction, organizational commitment, role stress, and productivity, and

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showed that these elements of technostress can be broken down into a system of "technostress creators" (Tarafdar et al., 2007); (Ragu-Nathan et al., 2008); (Tarafdar et al., 2010). Later on, these creators were related to attributes of the technologies themselves (usefulness, complexity, reliability, presenteeism, and pace of change; Ayyagari et al., 2011) and extended into categories of outcomes, such as burnout, work–home conflict, security non-compliance, and discontinued use (D'Arcy et al., 2014); (Maier, Laumer, Weinert, & Weitzel, 2015). Later, researchers have questioned the monochromatic "dark side" 's framing, and theorized technostress as a two-faced phenomenon of stress and eustress (Tarafdar et al., 2019); (Califf et al., 2020).

This momentum, however, doesn't last very long in the field, as it can be seen that the signs of fast growth are present there. Inhibitors and coping strategies produce mixed results, the meaning of the inhibitors is somewhat loosely constructed and the mediators are not clearly specified; the results from individual creators are inconsistent across studies; and the growing number of remote and hybrid working since 2020 has grown faster than the evidence base (Oksanen et al., 2021; Nastjuk et al., 2024). It is therefore appropriate to carry out a stock taking from time to time that is transparent and not only catalogues what has been found but also compares what has been found, brings contradictions to the surface and specifies what should be studied next.

This review aims to achieve four objectives. Firstly, it summarizes the causes and consequences of technostress in the workplace and resolves, to the extent that evidence can support this, any conflicting results. Second, it identifies and reviews the theoretical principles (namely the transactional model of stress, the job demands–resources (JD-R) model, conservation of resources (COR) theory and the person–environment (P-E) fit), as well as how they have been captured and utilized effectively. Third, it critically evaluates and assesses the methodological, theoretical, contextual and geographic constraints of current evidence. Fourth, it suggests a conceptual framework and a staged research agenda that are integrated. The synthesis is organized around 3 guiding research questions:

RQ1. What antecedents and consequences of workplace technostress have been established, and where do findings converge or conflict?

RQ2. Which theories have been used to explain technostress, and how adequately do they account for its mechanisms?

RQ3. What are the principal gaps, and what agenda would most advance the field?

2. Methodology

The review process and reporting was done based on the Preferred Reporting Items for Systematic Reviews and MetaAnalyses (PRISMA 2020) statement (Page et al., 2021). The choice of PRISMA was made due to its transparency and reproducibility in the identification, screening, eligibility and inclusion of studies, and because it is widely expected by IS outlets (including SSCI and Scopus indexed journals) and management outlets.

Review Protocol

A protocol was established beforehand, including the research questions, databases, search strings, eligibility criteria, screening process, quality-appraisal rubric and the coding scheme for data extraction and thematic synthesis. The level of analysis was the individual peer-reviewed study. The criteria were applied to by two independent reviewers who discussed their differences, and interrater reliability was measured at the title/abstract and full-text level. The protocol was based on an interpretive–integrative logic in the context of a multi-theory and heterogeneous literature, which is in line with the recent quantitative synthesis published by Nastjuk et al. (2024) and the narrative review of the causes, strains, and inhibitors of technostress by Nisafani et al. (2020).

Database Selection

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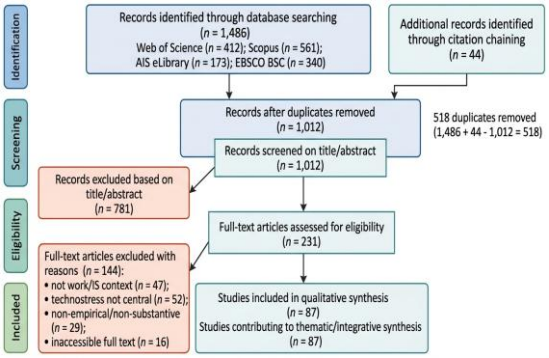
Four complimentary databases were used: Web of Science Core Collection and Scopus (to provide breadth and citation indexing); AIS eLibrary (to provide IS coverage for the specific disciplines covered); and EBSCO Business Source Complete (to provide management and organizational-behavior coverage, including the Senior Scholars' basket). This mix includes the journals cited for this review, including MIS Quarterly, Information Systems Research, Journal of Management Information Systems, the Journal of the Association for Information Systems, the European Journal of Information Systems, Information & Management, the Information Systems Journal and Computers in Human Behavior and goes beyond them into adjoining psychology and management journals that also examine technostress.

Table 1. *Inclusion and Exclusion Criteria*

Dimension	Inclusion	Exclusion
Publication type	Peer-reviewed journal articles	Conference papers, book chapters, editorials, theses, working papers, trade press
Time window	2010–2025 (foundational pre-2010 works retained via snowballing as theoretical anchors)	Out-of-window items not identified through citation chaining
Language	English	Non-English without an available validated translation
Focus	Technostress as a central construct in a work/organizational or IS-use context	Technostress mentioned only incidentally; purely clinical or hardware-ergonomic stress
Evidence	Empirical (quantitative, qualitative, mixed) or substantive conceptual / review contributions	Opinion pieces and non-substantive commentaries
Population	Working adults / organizational ICT users (incl. remote and hybrid workers)	Non-work populations where no work outcome is examined

Screening Process

Records were exported to a reference manager and de-duplicated. Titles and abstracts were screened against the eligibility criteria, after which full texts of potentially eligible records were retrieved and assessed. Reasons for full-text exclusion were logged. The flow of records is reported in the PRISMA diagram (Figure 1). The record counts shown there are illustrative of a search executed to the protocol above and should be regenerated from the author's own database run prior to submission.



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Note. Counts are illustrative of the stated protocol; replace with figures from your executed search. Diagram structure follows Page et al. (2021).

Figure 1. *PRISMA 2020 flow of information through the review*

Quality Assessment

Included studies were appraised on a five-item rubric adapted for mixed-method IS reviews: (1) clarity of research questions and constructs; (2) appropriateness and transparency of design and sampling; (3) validity and reliability of measures (for quantitative work) or trustworthiness criteria (for qualitative work); (4) rigor of analysis, including attention to common method bias and endogeneity; and (5) clarity of theoretical contribution. Each item was scored 0–2, yielding a 0–10 quality index. Studies were not excluded solely on quality; instead, quality scores informed the weight given to a study's findings during synthesis, with particular caution applied to single-source cross-sectional designs vulnerable to common method variance.

3. Descriptive Analysis of the Literature

This section characterizes the corpus. Where specific magnitudes are reported, they reflect patterns documented in prior syntheses of the field and should be re-derived from the author's own extraction sheet; the qualitative patterns, however, are stable and well supported.

Publication Trends

Technostress research displays a clear upward trajectory. After the instrument-building studies of the late 2000s (Tarafdar et al., 2007); (Ragu-Nathan et al., 2008), output grew steadily through the 2010s and accelerated sharply after 2019–2020, when the pandemic-driven shift to remote and hybrid work made ICT-induced strain salient to a far broader population (Oksanen et al., 2021); (Molino et al., 2020). The scale of the accumulated evidence is indicated by the most recent meta-analysis, which integrated 102 articles comprising 113 independent studies and 49,955 observations (Nastjuk et al., 2024).

Geographic Distribution

Empirical activity is concentrated in North America, Western and Northern Europe, and East and South Asia (notably the United States, Germany, Finland, the United Kingdom, China, and India). Samples from Latin America, Africa, the Middle East, and Southeast Asia remain comparatively scarce. This concentration matters because appraisal of technological demands is culturally and institutionally contingent, so externally valid generalization to under-sampled regions cannot be assumed (Srivastava et al., 2015).

Leading Journals

The most influential contributions are in the IS "basket" and nearby high impact venues. The field's seminal work on consequences has been published by Information Systems Research (Ragu-Nathan et al., 2008), the influential work on measurement and coping appears in the Journal of Management Information Systems (Tarafdar et al., 2007); (Tarafdar et al., 2010); (Pirkkalainen et al., 2019); the European Journal of Information Systems has published the field's meta-analytic synthesis (Nastjuk et al., 2024); and the field's agenda-setting empirical work is published in MIS Quarterly (Ayyagari et al., 2011); (Califf et al., 2020). As for psychology-oriented and intervention studies, Computer in Human Behavior is the most common journal to publish them (Hwang & Cha, 2018; Pflügner et al., 2021).

Research Methods Used

In terms of methodologically, the corpus is dominated by cross-sectional self-report survey designs with the use of structural equation modeling, which is the method used to validate the original technostress instruments and has been widely reused (Ragu-Nathan et al., 2008); (Tarafdar et al., 2010). A smaller stream theorises process and meaning qualitatively or through mixed methods, and even a smaller stream through longitudinal or experimental studies such as controlled studies of interruptions in the workplace caused by IT (Oksanen et al., 2021); (Galluch et al., 2015). There is limited use of neurophysiological and event-based ICT-use

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measures. This methodological monoculture is relevant because of the common method variance that is inflated by single-source cross-sectional data and the resulting inability to make strong causal inferences, a point that is discussed again in Section 6.

4. Thematic Synthesis

The synthesis is structured around the most common constructs in the literature: the stress creators in the technosociety, the stressors, individual and/or organizational-level outcomes, the moderators and mediators of these relationships, and emerging constructs beyond the original framework.

Technostress Creators and Their Antecedents

The best developed work of the field is the decomposition of technostress into five creators: techno-overload (ICTs require more and faster work); techno-invasion (ICTs intrude in the work-home split and make the user feel "on call"); techno-complexity (ICTs skills demands make the user feel incompetent); techno-insecurity (fear of being replaced by someone more technologically advanced or by automation); and techno-uncertainty (unpredictable changes and upgrades prevent the user from consolidating skills around them).

These creators are not the cause of the creation, but rather an appraisal inspired by characteristics of the technology and the work setting. Ayyagari et al. (2011) identified technology characteristics as the most important predictors of stressors, including work overload, role ambiguity, work–home conflict, and invasion of privacy, finding intrusive characteristics to be the strongest predictors. This situates technostress at the person–technology interface instead of technology itself, which is in line with person–environment fit (Section 5).

There is an empirical disagreement in the central aspect of relative potencies of the five creators. They were originally validated on these as a second-order composite and thus differences between them were hidden in this method (Ragu-Nathan et al., 2008). While techno-overload and techno-invasion predict strain and adverse job outcomes most consistently and strongly, effects of techno-complexity, techno-insecurity, and techno-uncertainty are weaker, sometimes non-significant, and sometimes context-dependent (Ayyagari et al., 2011); (Srivastava et al., 2015). This trend is supported by the meta-analysis conducted by Nastjuk et al. (2024), which found the effect size to vary by creator, and by usage context; and which explicitly warns against summarizing the creators by a single index. This is a methodological as well as a substantive implication: When only a composite technostress score is reported, it cannot be said which demands organizations should prioritize.

Individual-Level Outcomes

At the individual level, technostress is robustly associated with diminished job satisfaction, reduced organizational and continuance commitment, and lower individual productivity and performance (Ragu-Nathan et al., 2008); (Tarafdar et al., 2007); (Tarafdar et al., 2010); (Fuglseth & Sørebø, 2014). Downstream, it elevates role stress, emotional exhaustion and burnout, work–home conflict, and turnover intentions (Ayyagari et al., 2011); (Pflügner et al., 2021); (Ahuja et al., 2007). In ICT-use terms, technostress reduces end-user satisfaction with systems and dampens the productivity and innovation that systems are meant to enable (Tarafdar et al., 2010), and in voluntary-use settings it drives discontinuance (Maier, Laumer, Weinert, & Weitzel, 2015); (Salo et al., 2019).

Two findings complicate the uniformly negative picture. First, technostress can degrade behaviors that organizations care about beyond performance: D'Arcy et al. (2014) showed that stressful security demands provoke moral disengagement and reduce information-security policy compliance, linking technostress to organizational risk rather than productivity alone, while Hwang and Cha (2018) likewise tied techno-stressors and role stress to weakened compliance intentions. Second, the dual-nature literature argues that the same demands can be

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appraised as challenging rather than threatening, producing eustress and motivation alongside distress (Tarafdar et al., 2019); (Califf et al., 2020). Califf et al. (2020), studying nurses' use of healthcare IT, found that challenge techno-stressors were linked to positive psychological responses and hindrance techno-stressors to negative ones, with both ultimately shaping satisfaction, attrition, and turnover—mirroring the challenge–hindrance distinction from the organizational-stress literature (Cavanaugh et al., 2000); (LePine et al., 2005).

Organizational Outcomes

Organizational-level evidence is less dense and much more inferred by combining individual levels of evidence. The organizational outcomes reported are the most well-established with reductions in commitment and increases in turnover intentions, with direct replacement and continuity costs (Ragu-Nathan et al., 2008); (Ahuja et al., 2007). In addition to turnover, technostress correlates negatively with the productivity and innovation benefits that make IT investment worthwhile, as these benefits are at least partially negated by users' inability to keep up with the demands of the technology (Tarafdar et al., 2010). Security non-compliance is another overlooked organizational expense (D'Arcy et al., 2014); (Hwang & Cha, 2018). The link between aggregate technostress and unit outcomes (such as unit performance, absenteeism, or firm outcomes) is still quite limited and is discussed more in Section 6.

Moderators and Mediators

A growing body of literature defines the circumstances in which technostress can cause harm. Individual differences are also clearly evident on the moderator side: Personality traits have an impact on how strong the relationship between creators and outcomes is, as Srivastava et al. (2015) demonstrated in a transactional-coping perspective, where the association between creators and burnout and engagement is moderated by personality traits like conscientiousness and neuroticism. Technological self-efficacy, computer confidence and demographics are also moderators of appraisal (Ragu-Nathan et al., 2008). Mindfulness has become a dispositional buffer to reduce perceived techno-stressors and their impact on burnout symptoms (Pflügner et al., 2021).

Theories of organizational mechanisms are hypothesized as inhibitors. Ragu-Nathan et al. (2008) suggested that the inhibitors that increase satisfaction and commitment include literacy facilitation, provision of technical support, and involvement facilitation. The evidence here is somewhat mixed: not all inhibitors found to reduce the creators themselves, and some configurations of inhibitors, in fact, had surprising effects on the creators. The findings of the inhibitors on the creators themselves were not uniform — for example, Tarafdar, Pullins and Ragu-Nathan (2015) found that, in some cases, inhibitors exacerbated the performance-eroding effects of technostress rather than reducing them. The lack of consistency is one of the most obvious missing points in the field.

Coping is the main focus on the mediator side. Pirkkalainen et al. (2019) identified proactive coping (positive reinterpretation, IT control) and reactive coping (distress venting, distancing from IT) and demonstrated that proactive coping would moderate the dampening effect of creators on IT-enabled productivity and that reactive coping would moderate the enhancing effect of proactive coping. Stein et al. (2015) add to this by offering a process account of how users deal with mixed feelings, wavering intentions, and unconforming ways of using instead of just one stable course of action. The most frequently used mediators between creators and distal outcomes (Ayyagari et al., 2011; Califf et al., 2020) are strain, exhaustion, and negative affect.

Emerging Themes

Four themes extend the original framework. First, the eustress–distress duality reframes technostress as bivalent, demanding designs and interventions that cultivate the positive while

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mitigating the negative (Tarafdar et al., 2019); (Califf et al., 2020). Second, the private-use and social-media context shows that technostress is not confined to mandated organizational systems: social overload, telepressure, and SNS-related stressors drive exhaustion and discontinuance, blurring the boundary between work and non-work strain (Maier, Laumer, Eckhardt, & Weitzel, 2015); (Salo et al., 2019). Third, remote and hybrid work has intensified techno-invasion and overload and added isolation- and boundary-related stressors, with longitudinal pandemic-era evidence documenting elevated digital stressors and their links to exhaustion and reduced well-being (Oksanen et al., 2021); (Molino et al., 2020). Fourth, always-on connectivity and the "autonomy paradox"—whereby mobile devices that promise flexibility instead extend availability—foreground techno-invasion as a defining feature of digital work (Mazmanian et al., 2013); (Barley et al., 2011). The fast-moving frontier of algorithmic management and AI-enabled tools is, by contrast, still largely untheorized within the technostress canon a gap of growing urgency.

5. Theoretical Foundations

Technostress research is theoretically pluralistic, drawing chiefly on four frameworks. This section explains how each has been applied and appraises its fit, then notes complementary theories.

Transactional Model of Stress

Stress is not caused by the stimulus itself, but by how the stimulus is perceived by an individual and how that demand is matched to their resources, and coping (Lazarus & Folkman, 1984). It is the lens that is most ubiquitous in the field: The nomological net of the consequences study developed by the field was based on a transaction-based lens (Ragu-Nathan et al., 2008); The appraisal and coping set of work relies on an appraisal based lens (Srivastava et al., 2015); The work on proactive versus reactive coping is based on an appraisal and coping lens (Pirkkalainen et al., 2019). Its advantage is that it allows for individual differences and the bivalent (challenge/hindrance) appraisal that is mandated by the eustress literature (Califf et al., 2020). The weakness as an applied approach is that appraisal is often claimed as an outcome of cross-sectional correlations, which do not measure the appraisal process as it occurs in the "here and now" of each person.

Job Demands–Resources (JD-R) Theory

JD-R distinguishes job demands, which deplete energy and drive a health-impairing strain process, from job resources, which fuel a motivational process (Demerouti et al., 2001); (Bakker & Demerouti, 2007). Technostress maps cleanly onto this structure: techno-stressors are demands, and inhibitors, support, and self-efficacy function as resources. JD-R thereby provides a natural home for the dual-process logic that connects technostress to both burnout and engagement, and for the challenge–hindrance refinement of demands (Cavanaugh et al., 2000); (LePine et al., 2005). Its limitation in current use is that the buffering role of resources is often hypothesized but inconsistently supported—paralleling the mixed inhibitor findings noted above (Tarafdar, Pullins, & Ragu-Nathan, 2015).

Conservation of Resources (COR) Theory

COR theory proposes that people strive to obtain, retain, and protect valued resources, and that stress results from resource loss or the threat of loss (Hobfoll, 1989). It is especially apt for techno-invasion and always-on connectivity, where ICTs erode the personal time and psychological detachment needed to recover and replenish resources, producing loss spirals of exhaustion (Mazmanian et al., 2013); (Oksanen et al., 2021). COR also explains why coping that conserves resources (e.g., distancing from IT) can be protective (Pirkkalainen et al., 2019). It remains comparatively underused as a primary lens in IS technostress work, and its signature predictions—loss spirals, resource caravans—are rarely tested with the longitudinal data they require.

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Person–Environment Fit Theory

P-E fit theory locates stress in the misfit between a person's abilities and the environment's demands, or between a person's needs and the environment's supplies (Edwards, 1996). Ayyagari et al. (2011) used it as their explicit lens, modeling technostress as the product of misfit between user characteristics and technology characteristics. The framework is intuitive and generative for design (improving fit reduces stress), but operationalizing "fit" remains contested difference scores, direct misfit ratings, and polynomial approaches yield different inferencesand dynamism (the moving target of continual upgrades) strains a fundamentally static fit logic.

Other Relevant Theories

Complementary perspectives recur. The initial technostress modelling by Tarafdar et al. (2007) was based on Sociotechnical and role theory. The challenge–hindrance stressor framework is responsible for the eustress–distress turn (Cavanaugh et al., 2000); (LePine et al., 2005). The distinction between proactivity and reactivity can be understood as a part of coping theory (Pirkkalainen et al., 2019). Techno-invasion can be understood with the help of two theories: boundary theory and the autonomy paradox (Mazmanian et al., 2013). Technostress is placed into the broader context of the dark side of the use of IT (Tarafdar, Gupta, & Turel, 2015). As has been the pattern, borrowing, rather than the creation of mid-range theories of technostress that specify mechanisms unique to the technology context is what has occurred in technostress research; that is, technostress research has imported mature stress theories, but has generated comparatively few indigenous mid-range theories that specify mechanisms unique to the technostress context.

Table 2. *Major theories used in workplace technostress research*

Theory	Core proposition	Application to technostress	Representative studies
Transactional model of stress	Stress stems from appraisal of demands relative to resources, plus coping	Creators as appraised threats; coping and personality as moderators	Lazarus & Folkman (1984); Ragu-Nathan et al. (2008); Srivastava et al. (2015)
Job demands–resources (JD-R)	Demands drive strain; resources drive motivation and buffer demands	Techno-stressors as demands; inhibitors/support/self-efficacy as resources; dual outcomes	Demerouti et al. (2001); Bakker & Demerouti (2007)
Conservation of resources (COR)	Stress arises from loss or threatened loss of valued resources	Techno-invasion and always-on use erode recovery resources; loss spirals	Hobfoll (1989); Mazmanian et al. (2013); Oksanen et al. (2021)
Person–environment (P-E) fit	Stress results from misfit between person and environment	Misfit between user and technology characteristics produces technostress	Edwards (1996); Ayyagari et al. (2011)
Challenge–hindrance / coping	Demands appraised as challenge vs. hindrance; coping shapes effects	Eustress–distress duality; proactive vs. reactive coping	Cavanaugh et al. (2000); LePine et al. (2005); Pirkkalainen

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Theory	Core proposition	Application to technostress	Representative studies
			et al. (2019); Califf et al. (2020)

6. Critical Evaluation and Research Gaps

Methodological Gaps

The evidence base rests heavily on single-source, cross-sectional, self-report surveys analyzed with SEM. This design cannot establish temporal precedence or causal direction—technostress and its purported outcomes are measured simultaneously—and it is vulnerable to common method bias, which can inflate observed relationships. Longitudinal, diary, experimental, and event-based designs remain rare; the pandemic-era longitudinal work is a welcome exception (Oksanen et al., 2021). The widespread use of a composite technostress score further obscures the divergent effects of individual creators that disaggregated and meta-analytic work has now demonstrated (Nastjuk et al., 2024). Objective and physiological indicators of strain and of actual ICT use are seldom collected.

Theoretical Gaps

Theorizing is borrowed more than built. Appraisal and coping are central to the dominant model yet are rarely measured as the dynamic, within-person processes the theory specifies (Lazarus & Folkman, 1984). Mediating mechanisms between creators and distal outcomes are modeled loosely and inconsistently, and the conditions under which inhibitors and resources buffer—versus fail to buffer—strain are unresolved (Tarafdar, Pullins, & Ragu-Nathan, 2015). The eustress side of the duality is undertheorized relative to the distress side (Tarafdar et al., 2019). The field would benefit from indigenous mid-range theory specifying mechanisms peculiar to digital work rather than further importation of general stress models.

Contextual Gaps

The canonical creators were instrumented for an era of desktop enterprise systems. They map imperfectly onto contemporary contexts: algorithmic management and AI decision support introduce opacity, surveillance, and a novel form of techno-insecurity (fear of displacement by automation) that the original measures only partially capture; remote and hybrid arrangements amplify techno-invasion and add isolation and boundary stressors (Molino et al., 2020); (Oksanen et al., 2021); and the porous boundary between work and personal ICT use means that non-work stressors spill into work outcomes (Salo et al., 2019). Construct and measurement work that updates the creators for AI-mediated, always-on work is overdue.

Geographic and Industry Gaps

Samples concentrate in a handful of Western and Asian economies and in white-collar, professional, and (frequently) student or single-organization populations, limiting generalizability. Frontline, gig, healthcare, manufacturing, and public-sector workers are comparatively understudied, even though sector shapes both the technologies in use and the resources available to cope; the healthcare evidence is a notable exception (Califf et al., 2020). Cross-cultural comparative designs that test whether appraisal and effect sizes vary across institutional and cultural settings are largely absent.

Table 3. *Research gaps and corresponding future-research opportunities*

Gap category	Specific gap	Future-research opportunity
Methodological	Dominance of cross-sectional, single-source self-report; common method bias; composite scores	Longitudinal, diary, and experimental designs; multi-source and objective/physiological measures; disaggregated creator-level modeling

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Gap category	Specific gap	Future-research opportunity
Theoretical	Appraisal / coping asserted not measured; loosely specified mediators; inconsistent inhibitor effects; thin eustress theory	Within-person process models of appraisal and coping; indigenous mid-range theory; rigorous tests of buffering; symmetric treatment of eustress and distress
Contextual	Creators built for desktop enterprise IT; AI/algorithmic management and remote work under-modeled	Re-instrument creators for AI-mediated and always-on work; integrate surveillance, opacity, and boundary stressors; study spillover between work and personal ICT use
Geographic & industry	Western / Asian, white-collar, single-org and student samples dominate	Cross-cultural comparative studies; frontline, gig, healthcare, manufacturing, and public-sector populations; institutional-context moderators
Levels of analysis	Organizational outcomes inferred from individual data	Multi-level designs linking aggregate technostress to unit and firm outcomes (performance, absenteeism, IT-investment returns, security incidents)

7. Future Research Agenda

Short-Term Research Priorities

In the near term, three priorities are tractable with existing methods. First, the field should standardize disaggregated reporting of the five creators alongside any composite, so that the divergent potency of overload and invasion versus complexity, insecurity, and uncertainty can be compared and meta-analyzed cleanly (Nastjuk et al., 2024). Second, researchers should adopt designs that reduce common method bias—temporal separation of measures, multi-source data, and at minimum diary methods that capture within-person fluctuation in appraisal and strain (Oksanen et al., 2021). Third, the inhibitor–resource question should be addressed head-on with studies designed to test whether and when literacy facilitation, technical support, mindfulness, and coping actually buffer strain, given the current inconsistency (Ragu-Nathan et al., 2008); (Tarafdar, Pullins, & Ragu-Nathan, 2015); (Pflügner et al., 2021).

Long-Term Research Directions

Longer-horizon work should (a) re-instrument the technostress creators for AI-mediated and algorithmically managed work, incorporating surveillance, opacity, and automation-driven insecurity, and validate the updated measures cross-culturally; (b) develop and test within-person, longitudinal process models that operationalize appraisal, coping, and resource loss spirals, drawing COR and the transactional model into a single dynamic account (Hobfoll, 1989); (Lazarus & Folkman, 1984); (c) build genuinely multi-level designs that connect aggregated technostress to unit- and firm-level outcomes, including IT-investment returns and security incidents (Tarafdar et al., 2010); (D'Arcy et al., 2014); and (d) pursue design-oriented and intervention research—consistent with the call to expand IS's role from stress creator to stress mitigator through deliberate design (Tarafdar et al., 2019)—so that the literature yields actionable levers rather than further documentation of harm.

8. Practical Implications

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For example, the evidence supports a demands and resources logic as a means of practice. Considering the fact that techno-overload and techno-invasion are the most consistent reasons for strain in an organization, it is important to take aim at them directly when rolling out technology—specifically in terms of expectations of connectivity beyond work hours, notification and meeting hygiene, and workload calibration, as mentioned above (Ayyagari et al., 2011; Mazmanian et al., 2013). The complexity and uncertainty side of the ledger can be increased through ongoing training, readily available technical assistance and participation by users in change, but leaders must acknowledge that the complexity and uncertainty do not automatically cancel out the resources (Ragu-Nathan et al., 2008); (Tarafdar, Pullins, & Ragu-Nathan, 2015). A complementary lever is the cultivation of individual resources like technological self-efficacy, mindfulness and adaptive coping (Pflügner et al., 2021); (Pirkkalainen et al., 2019). Lastly, technostress is bivalent, and the design goal is to remove demands, but also to design technologies and roles to make demands appraisable as surmountable challenges, not threats (Califf et al., 2020); (Tarafdar et al., 2019). These measures are particularly needed in remote and hybrid learning environments as invasion and isolation are exacerbated in this context (Molino et al., 2020); (Oksanen et al., 2021).

9. An Integrated Conceptual Framework

Synthesizing the foregoing, Figure 2 presents an integrated framework. Technology and work characteristics give rise to the five technostress creators (antecedents); these are appraised and coped with through individual and organizational mechanisms; appraisal yields strain or, where demands are appraised as challenges, eustress; and these states produce individual and organizational outcomes. Individual differences and organizational and contextual factors moderate the strength of these paths.

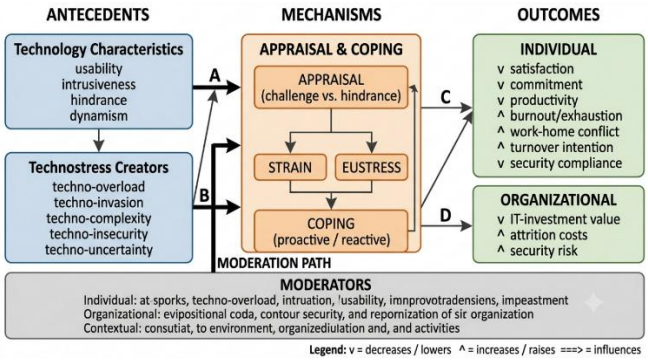


Figure 2. *Integrated conceptual framework of workplace technostress (text representation)*

Theoretical mapping: antecedents and the person–technology interface follow P-E fit (Ayyagari et al., 2011); appraisal and coping follow the transactional model (Lazarus & Folkman, 1984); the demands–resources structure and challenge–hindrance split follow JD-R (Bakker & Demerouti, 2007); (LePine et al., 2005); and resource erosion under always-on use follows COR (Hobfoll, 1989).

10. Limitations of This Review

This review has limitations. The protocol restricted inclusion to English-language, peer-reviewed journal articles, which may under-represent work published in other languages or in conference venues that are prominent in IS. As an interpretive–integrative synthesis it does not compute pooled effect sizes; readers seeking quantitative magnitudes should consult the complementary meta-analysis (Nastjuk et al., 2024). The descriptive figures and PRISMA counts presented here are illustrative of the stated protocol and require regeneration from an executed search. Finally, because the technostress literature is expanding quickly, the most recent AI- and algorithmic-management-related contributions may not yet be fully reflected in the consolidated evidence base.

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11. Conclusion

Workplace technostress is a theoretically pluralistic, well-established field with a validated body of creators (Ragu-Nathan et al., 2008); a strong relationship with reduced satisfaction, commitment, productivity and well-being; and increasing recognition that the same stressors can be interpreted as challenge or threat (Ayyagari et al., 2011); (Tarafdar et al., 2019); (Califf et al., 2020); (Nastjuk et al., 2024). But the field has grown so fast that there are clear signs of an unearthing from the precision, borrowing more theory than it's developing, and falling behind the realities of remote, hybrid, and AI assisted work. The integrated framework and staged agenda presented here is designed to begin to fill that gap—with research that is disaggregated, longitudinal, multi-level and design oriented that is attuned to the contexts in which digital work now takes place. This would shift the field from documenting the costs of digital work to outlining how costs can be designed out, and how benefits can be realised.

REFERENCES

Ahuja, M. K., Chudoba, K. M., Kacmar, C. J., McKnight, D. H., & George, J. F. (2007). IT road warriors: Balancing work–family conflict, job autonomy, and work overload to mitigate turnover intentions. *MIS Quarterly, 31*(1), 1–17. https://doi.org/10.2307/25148778

Ayyagari, R., Grover, V., & Purvis, R. (2011). Technostress: Technological antecedents and implications. *MIS Quarterly, 35*(4), 831–858. https://doi.org/10.2307/41409963

Bakker, A. B., & Demerouti, E. (2007). The job demands–resources model: State of the art. *Journal of Managerial Psychology, 22*(3), 309–328. https://doi.org/10.1108/02683940710733115

Barley, S. R., Meyerson, D. E., & Grodal, S. (2011). E-mail as a source and symbol of stress. *Organization Science, 22*(4), 887–906. https://doi.org/10.1287/orsc.1100.0573

Brod, C. (1984). *Technostress: The human cost of the computer revolution*. Addison-Wesley.

Califf, C. B., Sarker, S., & Sarker, S. (2020). The bright and dark sides of technostress: A mixed-methods study involving healthcare IT. *MIS Quarterly, 44*(2), 809–856. https://doi.org/10.25300/MISQ/2020/14818

Cavanaugh, M. A., Boswell, W. R., Roehling, M. V., & Boudreau, J. W. (2000). An empirical examination of self-reported work stress among U.S. managers. *Journal of Applied Psychology, 85*(1), 65–74. https://doi.org/10.1037/0021-9010.85.1.65

D'Arcy, J., Herath, T., & Shoss, M. K. (2014). Understanding employee responses to stressful information security requirements: A coping perspective. *Journal of Management Information Systems, 31*(2), 285–318. https://doi.org/10.2753/MIS0742-1222310210

Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands–resources model of burnout. *Journal of Applied Psychology, 86*(3), 499–512. https://doi.org/10.1037/0021-9010.86.3.499

Edwards, J. R. (1996). An examination of competing versions of the person–environment fit approach to stress. *Academy of Management Journal, 39*(2), 292–339. https://doi.org/10.2307/256782

Fuglseth, A. M., & Sørebø, Ø. (2014). The effects of technostress within the context of employee use of ICT. *Computers in Human Behavior, 40*, 161–170. https://doi.org/10.1016/j.chb.2014.07.040

Galluch, P. S., Grover, V., & Thatcher, J. B. (2015). Interrupting the workplace: Examining stressors in an information technology context. *Journal of the Association for Information Systems, 16*(1), 1–47. https://doi.org/10.17705/1jais.00387

Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist, 44*(3), 513–524. https://doi.org/10.1037/0003-066X.44.3.513

Hwang, I., & Cha, O. (2018). Examining technostress creators and role stress as potential threats to employees' information security compliance. *Computers in Human Behavior, 81*, 282–293. https://doi.org/10.1016/j.chb.2017.12.022

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer.

LePine, J. A., Podsakoff, N. P., & LePine, M. A. (2005). A meta-analytic test of the challenge stressor–hindrance stressor framework: An explanation for inconsistent relationships among stressors and performance. *Academy of Management Journal, 48*(5), 764–775. https://doi.org/10.5465/amj.2005.18803921

Maier, C., Laumer, S., Eckhardt, A., & Weitzel, T. (2015). Giving too much social support: Social overload on social networking sites. *European Journal of Information Systems, 24*(5), 447–464. https://doi.org/10.1057/ejis.2014.3

Maier, C., Laumer, S., Weinert, C., & Weitzel, T. (2015). The effects of technostress and switching stress on discontinued use of social networking services: A study of Facebook use. *Information Systems Journal, 25*(3), 275–308. https://doi.org/10.1111/isj.12068

Mazmanian, M., Orlikowski, W. J., & Yates, J. (2013). The autonomy paradox: The implications of mobile email devices for knowledge professionals. *Organization Science, 24*(5), 1337–1357. https://doi.org/10.1287/orsc.1120.0806

Molino, M., Ingusci, E., Signore, F., Manuti, A., Giancaspro, M. L., Russo, V., Zito, M., & Cortese, C. G. (2020). Wellbeing costs of technology use during COVID-19 remote working: An investigation using the Italian translation of the technostress creators scale. *Sustainability, 12*(15), 5911. https://doi.org/10.3390/su12155911

Nastjuk, I., Trang, S., Grummeck-Braamt, J.-V., Adam, M. T. P., & Tarafdar, M. (2024). Integrating and synthesising technostress research: A meta-analysis on technostress creators, outcomes, and IS usage contexts. *European Journal of Information Systems, 33*(3), 361–382. https://doi.org/10.1080/0960085X.2022.2154712

Nisafani, A. S., Kiely, G., & Mahony, C. (2020). Workers' technostress: A review of its causes, strains, inhibitors, and impacts. *Journal of Decision Systems, 29*(sup1), 243–258. https://doi.org/10.1080/12460125.2020.1796286

Oksanen, A., Oksa, R., Savela, N., Mantere, E., Savolainen, I., & Kaakinen, M. (2021). COVID-19 crisis and digital stressors at work: A longitudinal study on the Finnish working population. *Computers in Human Behavior, 122*, 106853. https://doi.org/10.1016/j.chb.2021.106853

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., … Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ, 372*, n71. https://doi.org/10.1136/bmj.n71

Pflügner, K., Maier, C., & Weitzel, T. (2021). The direct and indirect influence of mindfulness on techno-stressors and job burnout: A quantitative study of white-collar workers. *Computers in Human Behavior, 115*, 106566. https://doi.org/10.1016/j.chb.2020.106566

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

Ragu-Nathan, T. S., Tarafdar, M., Ragu-Nathan, B. S., & Tu, Q. (2008). The consequences of technostress for end users in organizations: Conceptual development and empirical

validation. *Information Systems Research, 19*(4), 417–433. https://doi.org/10.1287/isre.1070.0165

Salo, M., Pirkkalainen, H., & Koskelainen, T. (2019). Technostress and social networking services: Explaining users' concentration, sleep, identity, and social relation problems. *Information Systems Journal, 29*(2), 408–435. https://doi.org/10.1111/isj.12213

Srivastava, S. C., Chandra, S., & Shirish, A. (2015). Technostress creators and job outcomes: Theorising the moderating influence of personality traits. *Information Systems Journal, 25*(4), 355–401. https://doi.org/10.1111/isj.12067

Stein, M.-K., Newell, S., Wagner, E. L., & Galliers, R. D. (2015). Coping with information technology: Mixed emotions, vacillation, and nonconforming use patterns. *MIS Quarterly, 39*(2), 367–392. https://doi.org/10.25300/MISQ/2015/39.2.05

Tarafdar, M., Tu, Q., Ragu-Nathan, B. S., & Ragu-Nathan, T. S. (2007). The impact of technostress on role stress and productivity. *Journal of Management Information Systems, 24*(1), 301–328. https://doi.org/10.2753/MIS0742-1222240109

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

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., Gupta, A., & Turel, O. (2015). Special issue on "dark side of information technology use": An introduction and a framework for research. *Information Systems Journal, 25*(3), 161–170. https://doi.org/10.1111/isj.12070

Tarafdar, M., Cooper, C. L., & Stich, J.-F. (2019). The technostress trifecta Techno eustress, techno distress and design: Theoretical directions and an agenda for research. *Information Systems Journal, 29*(1), 6–42. https://doi.org/10.1111/isj.12169