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Managing Technostress with Leadership

Summary

This study explores the relationship between technostress and leadership style. Technostress is the mental strain caused by excessive use of digital tools, which negatively affects employee well-being and performance. The research shows that supportive, transformational, and change-oriented leadership styles help reduce stress, while authoritarian, destructive or passive (laissez-faire) leadership increases it. Leaders can mitigate stress through role modeling, technical support, gradual technology implementation, and open communication. A supportive organizational culture acts as a protective factor, while technostress – especially techno-invasion, overload, and complexity – intensifies work–family conflicts. The thesis also offers practical recommendations for leaders to support successful adaptation to digital environments.

Keywords: leadership, technostress, technostressors
JEL codes: J81, I31

Introduction

In today's technology-centric workplaces, technostress has become a major concern, impacting both employee well-being and organizational effectiveness. Technostress refers to the mental and emotional pressure individuals feel when they struggle to keep up with new or constantly evolving technologies. As digital tools become more integral to daily work, issues like constant connectivity, overwhelming information flow and frustration with device usage can significantly diminish both productivity and overall mental health. This study examines, through a review of the literature, whether leadership can influence technostress in workplaces and organizations.

With the accelerating pace of digital transformation and the growing dependence on information technologies in both remote and hybrid work environments, it has become more crucial than ever to explore how leadership can help alleviate technostress. Technological advancement has been a consistent element across all eras of history. While innovations are often designed to enhance quality of life and promote well-being, they can also become sources of stress, presenting new challenges that require deliberate coping strategies. Technostress describes the mental and emotional pressure individuals face when adapting to new or rapidly evolving technologies. It includes the adverse impacts technology can have on human behavior, decision-making and physical health—whether those effects are direct or indirect (Dragano et al., 2020; Daud, 2025).

As a member of Generation Z, I witness firsthand the growing influence of information technology in both academic and professional settings. This increasing reliance on digital tools has led to a rise in technostress, which negatively impacts employee performance and overall organizational productivity. Common indicators of technostress include anxiety, fatigue, information overload and frustration – often stemming from the constant use of digital devices and the pressure to remain perpetually available. Navigating digital platforms and adapting swiftly to technological advancements present ongoing challenges in both educational and workplace environments. To address these challenges, effective leadership is essential in guiding how individuals and organizations respond to the pressures of technological change (Dragano et al., 2020; Daud, 2025).

Literature Review

Leadership style

Leadership styles are defined differently by various experts, as they rely on different theoretical approaches and examine diverse workplace environments. In the early stages of leadership research, the primary focus was on organizing corporate operations efficiently (Szabolcsi, 2016; Klein, 2002).

According to Klein (2002), he defines leadership style as the consistent behavioral patterns demonstrated by a leader, which are observed and interpreted by their subordinates (Klein, 2002). Bakacsi (2004) describes leadership as a component of managerial activity that primarily emphasizes managing human resources within an organization. It involves the leader's capacity to influence organizational members toward achieving shared objectives. Unlike the mere use of authority, leadership considers the aspirations and needs of followers (Bakacsi, 2004). Northouse (2019) views leadership as a dynamic process through which an individual exerts influence over a group to accomplish a common goal (Northouse, 2019). In the late 1930s, Kurt Lewin introduced one of the earliest scientific frameworks for categorizing leadership styles, identifying three core types: democratic (participative), laissez-faire (delegative) and autocratic. This model was pioneering for its time, as it was grounded in empirical research and continues to serve as a foundational reference in leadership psychology (Xiaoxiong, 2024).

In the 1940s and 1950s, leadership research focused on identifying traits of successful leaders, emphasizing the leader's personality over the role of subordinates. Classical theories saw success as system-based, while trait theories highlighted the leader's individual abilities. From the late 1950s, attention shifted to leadership behaviors and by the 1960s, the focus expanded to include the leader-follower relationship. Behavioral approaches either emphasize personality or decision-making, while contingency theories argue that effective leadership depends on adapting style to the situation (Szabolcsi, 2016; Bakacsi, 2004).

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Technostress

The concept of technostress was introduced by Craig Brod in 1982. Brod (1982) defined technostress as the inability of an individual or an organization to adjust to the implementation and functioning of new technology (Brod, 1982).

With the rise of the digital age, information and communication technologies (ICT)—such as the internet, smartphones and tablets—have become central to modern work. These tools enhance productivity and support flexible work, but they also bring challenges like constant availability, communication overload and tech-related stress (Stadin et al., 2019; Stadin et al., 2016).

The rise of new technologies has increased demands on employees, leading to greater psychosocial stress at work—a negative side effect of digitalization (Rohwer et al., 2022; Califf et al., 2020). This was further intensified by the pandemic, which forced many to quickly adapt to remote work and unfamiliar digital tools, often without adequate support (Schmidt et al., 2021).

As a result, technostress has become a key topic in recent research. The complexity of digital systems presents daily challenges, blurring the line between work and personal life. Constant connectivity through smart devices makes it difficult to disconnect, harming mental health, personal relationships and long-term job performance. On an organizational level, this can lead to employee burnout and reduced overall effectiveness (Dragano et al., 2020; Körner et al., 2019).

Ragu-Nathan et al. (2008) identified five fundamental technostress factors that represent key sources of stress for users arising from the organizational use of information and communication technologies. The authors developed the concept of technostress and its dimensions based on theoretical foundations – such as stress theories – and empirical research, thereby ensuring both the scientific rigor and practical relevance of the framework (Ragu-Nathan et al., 2008).

The first type of technostress is techno-invasion. This stressor stems from the way technology allows work to intrude into personal life and free time, making it difficult to disconnect – even on weekends. Example: It often happens that I have to respond to work messages in the evening or on weekends, leaving me with very little time to rest. The another type of technostress is techno-overload. This form of stress arises when digital technologies require individuals to work faster and handle more tasks than before. Example: I often have to manage multiple platforms simultaneously and I frequently feel that the volume of tasks exceeds my capacity. The third type of technostress is techno-complexity. This form of stress arises when individuals do not feel adequately prepared to use new technological or IT systems. Example: When a new software is introduced, I often feel lost because I don't receive enough support to learn how to use it. The next technostressor is techno-insecurity. This refers to the fear of not being able to keep up with technological advancements and the rapid pace of change, which may lead to being replaced by someone more skilled in using these technologies. Example: I often feel anxious that if I don't quickly adapt to new digital tools, I could be left behind. The fifth type of technostress is techno-uncertainty. This describes the anxiety and frustration caused by the frequent changes in the technological environment at work. Example: In the past six months, the software we use has been replaced several times and I've had to relearn the basics each time, which has drained a lot of my energy. (Ragu-Nathan et al.; 2008).

Rademaker et al. (2023) developed a comprehensive conceptual model that illustrates how leadership influences employees' experience of technostress across the different stages of the technostress process. This process begins with the use of ICT tools (Figure 1) and progresses through the appraisal of these tools as stressors, ultimately leading to the experience of strain (Rademaker et al., 2023).

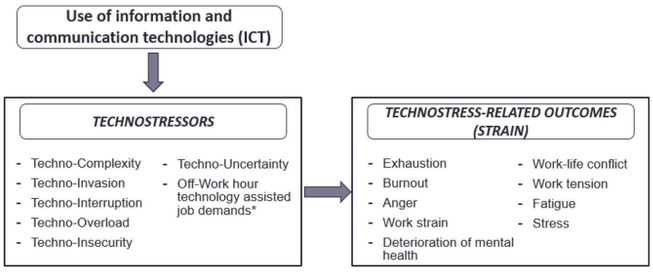

Figure 1. Types and consequences of technostress
Source: Authors' own figure based on Rademaker et. al., 2023

Technological strain initially causes fatigue, which negatively affects employees' job satisfaction. Technostress does not directly reduce job satisfaction but exerts its influence indirectly through exhaustion (Fieseler et al., 2014).

Method

This research examines the impact of leadership on technostress through secondary data analysis and a review of the relevant literature. It also seeks to determine whether certain leadership styles can either reduce or intensify the level of technostress.

Technostress and leadership

Since 2009, academic interest in the connection between technostress and leadership has been steadily increasing, with the number of publications peaking in 2021 at 8 (Figure 2). A significant rise in research output began in 2019, largely influenced by the COVID-19 pandemic. Remarkably, 60% of the studies published from 2020 onward explicitly reference the pandemic as a contributing factor (Rademaker et al., 2023).

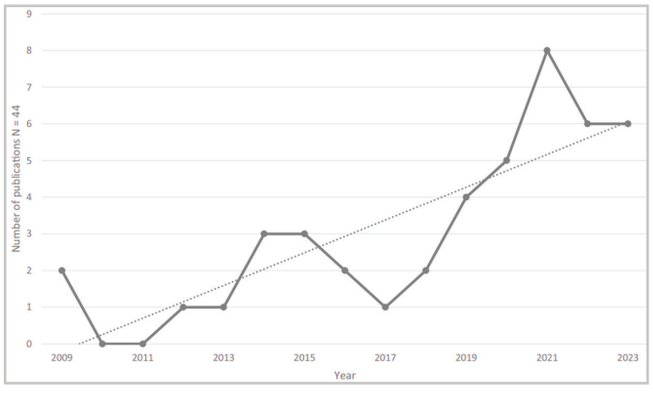

Figure 2. Leadership and technostress research frequency (2009 – 2023)
Source: Rademaker et. al., 2023

According to Alphonse et al. (2018), a study examined the impact of technostress on employee well-being within the framework of corporate social responsibility, based on inter-

views with the managers of the companies. The research identified four key areas where leadership can influence both risk management and well-being: job content, work environment, organizational structure and interpersonal relations. While leaders acknowledged the importance of managing technostress, practical implementation often lagged behind. The study also highlighted the crucial role of trust—both personal and impersonal—in shaping how employees engage with technology and perceive digital tools (Alphonse et al., 2018).

Boyer-Davis (2018) found a notable link between leadership style and technostress among employees using information and communication technologies. The study revealed a negative, though statistically insignificant, correlation between transformational leadership and technostress—indicating that supportive and motivational leadership does not contribute to increased stress. In contrast, both transactional and passive-avoidant leadership styles showed a significant positive correlation with technostress, suggesting that leadership approaches focused on rewards or problem avoidance may heighten employees' experience of technostress (Boyer-Davis, 2018).

Results

Leadership has been shown to play a critical role in shaping how employees engage with information and communication technologies, in influencing whether ICT use is perceived as a source of harmful stress and in determining whether such stressors extend into their personal lives. Prior research highlights that social, familial and technical support from leaders, along with empowering leadership styles and high-quality leader-member relationships, can significantly mitigate technostress and reduce work-family conflict related to ICT use (Rademaker, 2025).

According to Yener et al. (2024) effectively managing technostress requires leaders to adopt multiple, complementary approaches. One of their primary roles is to lead by example in maintaining a healthy balance between technology use and personal life—for instance, by avoiding non-urgent communication outside of working hours. Additionally, they should foster a work environment that supports flexible work arrangements and encourages a healthy lifestyle. Developing employees' technological skills is also essential, as it helps reduce feelings of overload, uncertainty and complexity. Leaders must support employees in adapting to new technologies through gradual implementation and personalized training. It is also important to establish regular feedback and open communication channels to identify difficulties early on. Furthermore, leaders should work to strengthen employees' technological self-efficacy and cultivate an organizational culture that promotes positive adaptation to digital changes. These leadership actions not only enhance employee well-being but also contribute to improved organizational performance and engagement (Yener et al., 2024).

The study conducted by Rademaker et al. (2023) highlights the crucial role leaders play in shaping technostress: certain leadership behaviors can intensify, while others can alleviate employees' technology-related stress. Among the stress-inducing leadership styles is destructive leadership, which increases workload and reduces employee autonomy through hostile or obstructive behavior. Another negative factor is when leaders expect employees to be available outside of working hours, blurring the boundaries between work and personal life. An overly task-oriented, authoritarian leadership style can also contribute to technostress, especially when the use of digital tools is made mandatory without providing adequate support. In contrast, leadership behaviors that help reduce technostress include supportive and change-oriented leadership (Rademaker et al., 2023).

Supportive leaders offer technical, social and family-friendly assistance and promote a health-conscious approach, helping employees manage digital workloads. Transformational and empowering leadership styles foster autonomy and flexibility, reduce technological uncertainty and enhance mental well-being. The study emphasizes that leaders influence technostress not only directly but also through digital communication channels (Rademaker et al., 2023).

According to Fieseler et al. (2014) the motivational and supportive leadership can help buffer these negative effects of technostress, even if the root causes – like excessive ICT use – remain present. However, the study found that managerial efforts specifically aimed at regulating ICT use had no significant effect on employees' perceived technostress or exhaustion, raising questions about the effectiveness of such interventions (Fieseler et al., 2014).

An another study conducted by Çiçek and Kılınç (2021) aimed to explore the impact of transformational leadership on technostress within the logistics sector. The findings revealed that transformational leadership significantly reduces various forms of technostress, particularly the feelings of overload (techno-overload), complexity (techno-complexity) and uncertainty (techno-uncertainty) (Çiçek et al., 2021).

The research examined four dimensions of leadership: idealized influence (charisma), inspirational motivation, intellectual stimulation, and individual consideration. Several of these dimensions showed a significant negative correlation with specific aspects of technostress. However, no significant effect was found in relation to techno-insecurity (technological insecurity) and techno-invasion (the intrusion of technology into personal life), suggesting that these factors are more influenced by individual characteristics and are less susceptible to leadership behavior. The study also provided practical recommendations for the manager's level. It is essential that employees are assigned tasks that align with their abilities and that they receive adequate support in adapting to technological changes. Leaders should be given the opportunity to take on active, supportive and developmental roles during organizational transformation. When communicating changes, it is especially important to foster understanding and acceptance rather than resistance among employees. This study clearly confirmed that transformational leadership can be an effective tool in reducing technostress, particularly in work environments where the use of digital technologies is intensive and part of everyday operations (Çiçek et al., 2021).

According to the study conducted by Turel and Gaudioso (2018), the negative effects of technostress – particularly distress and psychological strain – can be mitigated in the presence of a supportive leadership climate. The research examined two distinct samples (U.S. public sector employees and Italian IT professionals) to explore how leadership and competitive environments influence the perception and consequences of technostress. The findings revealed that a high level of leader-

ship support – such as assistance, recognition and understanding from supervisors – reduces the likelihood that technological demands will lead to distress or exhaustion. In contrast, a highly competitive and pressure-filled organizational climate tends to intensify stress levels. Overall, the study concludes that a supportive leadership style serves as a protective factor against the harmful effects of digital work environments (Turel et al., 2018).

According to Rademaker (2025), the technostressors – particularly techno-invasion (the intrusion of technology into personal life), the techno-overload (excessive workload) and techno-complexity (technological complexity) – significantly contribute to the emergence of work-family conflicts. This research showed that the greater the technological pressure, the more likely it is that work-related stress spills over into private life (Rademaker, 2025).

The study also highlighted that the laissez-faire leadership style – characterized by a lack of guidance, decision-making and support – on its own increases the level of work-family conflict. It particularly intensifies the relationship between techno-invasion and work-family conflict, as the absence of managerial control allows technology to further permeate employees' personal lives. Interestingly, laissez-faire leadership did not significantly affect the relationship between techno-overload and work-family conflict. Moreover, in the case of techno-complexity, it showed a mitigating effect, suggesting that the greater autonomy often associated with this leadership style may, in some cases, help employees cope with technological challenges. Laissez-faire leadership is a leadership style characterized by the absence of active managerial behavior. Leaders who adopt this style tend to avoid decision-making, provide little to no guidance and rarely offer feedback or support to their subordinates. This passive approach often results in employees feeling uncertain about expectations and left to solve problems on their own – especially when facing the challenges of a digital work environment (Rademaker, 2025).

Conclusion

In summary, it can be stated that leadership style and behavior fundamentally determine how employees experience stress arising from the use of digital technologies. The following key findings emerged from the present research:

Leadership plays a crucial role in managing technostress: Leaders' behaviors and styles significantly influence whether the use of information and communication technologies (ICT) is perceived as a source of stress by employees.

Supportive and empowering leadership reduces technostress: The leadership styles such as transformational, supportive, or change-oriented help alleviate various forms of technostress (e.g., overload, complexity, uncertainty) and improve employee well-being.

Destructive and authoritarian leadership increases technostress: Highly task-oriented, hostile, or controlling leadership styles raise workload, reduce autonomy and intensify stress.

Laissez-faire leadership has mixed effects: This passive leadership style increases work-family conflict, especially in the case of techno-invasion, but may sometimes ease techno-complexity by granting greater autonomy.

Leaders' role modeling and support are essential: Leaders should set an example in maintaining work-life balance, support the development of technological skills, ensure gradual technology implementation and promote open communication.

A supportive organizational culture acts as a protective factor: Leadership support—such as recognition, assistance and understanding—reduces the likelihood that technological demands will lead to distress or exhaustion.

Technostress contributes to work-family conflict: Especially in the cases of techno-invasion, techno-overload and techno-complexity, there is a higher risk that work-related stress will spill over into personal life.

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