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DIGITAL FATIGUE AND EMPLOYEE PERFORMANCE IN THE ERA OF HYPERCONNECTIVITY: A CRITICAL REVIEW OF LEADERSHIP INTERVENTIONS

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ABSTRACT

Objective: This research aims to critically examine the phenomenon of digital fatigue and its impact on employee performance in the era of hyperconnectivity. The main focus is directed at how the role of leadership - specifically transformational leadership and digital leadership can be an organizational strategic intervention in reducing the increasing digital fatigue.

Research Design & Methods: Using a qualitative systematic literature review approach, this study synthesized 58 reputable scientific articles published between 2014 and 2024 in the fields of Human Resource Management (HRM), organizational psychology, and digital leadership. Literature selection was conducted through the PRISMA protocol and analyzed using thematic coding and conceptual mapping techniques.

Findings: The study results show that digital fatigue is not solely caused by the intensity of technology use, but rather by the imbalance between high digital job demands and the lack of available digital resources. Job Demands-Resources (JD-R) and Conservation of Resources (COR) theories provide the basis for understanding how leadership can function as a resource caravan passageway. This channel helps employees recover psychological energy and maintain performance. Transformational leaders provide emotional support and clarity, while digital leaders shape flexible, inclusive, and ethical work structures in a digitised manner.

Implications & Recommendations: Organizations must view digital fatigue as a structural risk, not just an individual problem. Leaders should implement policies such as the right to disconnect, encourage mindful use of technology, and build work environments that support recovery. Leadership development programs should also include digital empathy and sustainable work design.

Contribution & Value Added: This research extends the literature on digital well-being by linking leadership theory and employee resilience in the digital age. The main added value of this study lies in providing a conceptual framework that integrates hyperconnectivity, leadership, and resource-based interventions to maintain sustainable employee performance.

Keywords: Digital Fatigue, Transformational Leadership, Hyperconnectivity.

JEL codes: M12, O33, M54.

Article type: research paper

INTRODUCTION

In the past two decades, the digital revolution has fundamentally changed the landscape of organizations and working relationships. Advances in information and communication technologies have fueled the birth of highly connected work environments, enabling collaboration across

geographical boundaries and time zones (Holtgrewe, 2014; Zamani & Spanaki, 2023). This transformation is accelerated by the emergence of digital work platforms, real-time communication systems, and cloud-based project management, increasing organizational efficiency and flexibility. However, behind these advancements lies a psychological consequence not yet fully understood by organizations, namely digital fatigue. Digital fatigue refers to the mental, emotional, and physical exhaustion that arises from the excessive and sustained use of digital technologies in work activities (Marsh et al., 2022). This phenomenon differs from traditional work fatigue as the main source of stress comes from constant exposure to notifications, digital screens, app-based multitasking, and the expectation of an always-on culture (Wasie, 2024). In an environment that increasingly demands quick responses, adaptation to digital stress is a major challenge for the well-being and productivity of the modern workforce (Dabić et al., 2023).

Digital fatigue becomes even more complex and troubling when associated with the era of hyperconnectivity, where the boundaries between professional and personal life are increasingly blurred (Brubaker, 2022). Work that used to be limited in time and space has now become a borderless activity supported by smartphones, email, and remote work platforms (Adisa et al., 2017). Under these conditions, employees face pressure to stay connected even outside of working hours, which compromises the quality of rest, social interactions, and work-life balance (Kumar et al., 2024). With communication and collaboration occurring almost entirely online, digital fatigue is an increasingly common problem faced by employees across sectors. They are faced with expectations to be connected and responsive, which blur the lines between personal and professional life and increase the risk of chronic stress and burnout (Boamah et al., 2022). This phenomenon not only impacts employees' mental and emotional health but also creates systemic organizational inefficiencies. Studies show that digital fatigue contributes to decreased focus, increased work errors, loss of creativity, and even cynicism towards work (Supriyadi et al., 2025). This makes digital fatigue not just a personal problem, but a strategic issue in human resource management (Dabić et al., 2023). Bibliometric data also reveals a sharp spike in academic publications addressing this topic in the past five years, indicating a growing concern among academics and practitioners. This phenomenon is exacerbated by the increasing demands of continuous digital multitasking, which triggers cognitive overload (Cram et al., 2022). A Microsoft survey (2021) of 30,000 global workers showed that 54% felt "overworked" and 39% felt digitally "exhausted" due to the surge in the use of online work devices and platforms. Therefore, this issue has become a serious concern in human resource management studies, especially in finding strategic approaches to create a healthy digital balance in the workplace. However, not many managerial approaches have been systematically developed to address the negative impacts of digital fatigue.

As the urgency of the issue of digital fatigue increases, researchers have begun to shift their focus to the role of leadership as a determining factor in mitigating digital stress in the workplace. Leadership is not only seen from the aspect of strategic decision-making, but also as a catalyst for the creation of a digitally healthy work culture (Kawiana, 2023). Leadership styles such as transformational leadership, which emphasize inspiration, individual support, and creating a shared vision, are believed to provide psychological protection for employees exposed to high digital loads (Khan et al., 2022). In addition, servant leadership and digital leadership are also topics that have begun to be widely researched for their ability to foster empathetic relationships and empower employees to adaptively manage work pressures. In this context, leadership not only plays a role in directing but also in creating workspaces that enable digital recovery and sustainable management of cognitive energy. In other words, a leadership approach responsive to the challenges of the digital age is crucial in creating organizational resilience (Kawiana, 2023).

However, while several studies address the relationship between leadership styles and digital fatigue, the existing literature is fragmented and lacks a comprehensive conceptual synthesis. Most research remains at the exploratory or limited case study stage, with diverse methodological approaches and sometimes contradictory findings. The absence of an integrative theoretical framework makes it difficult for practitioners and policymakers to design effective and evidence-based interventions to address digital fatigue in the workplace. Therefore, a critical review of the existing literature is needed to identify thematic patterns, research gaps, and directions for

further development in this field. This article addresses this need by conducting an in-depth literature review on the relationship between digital fatigue and employee performance and evaluating the effectiveness of various leadership interventions that have been studied. Thus, this article is expected to make theoretical and practical contributions in developing adaptive human resource management strategies based on digital well-being. The context of organizational culture and digital social norms also plays an important role in shaping individuals' perceptions and experiences of digital fatigue (Kumi et al., 2025). Organizations with competitive work cultures and high productivity values tend to normalize excessive work behaviors, including constant digital connectedness (Rezaei & Karikalan, 2023). In such environments, employees feel compelled to stay online to maintain a professional image or loyalty to the organization, even at the expense of personal well-being. On the other hand, organizations that prioritize work-life balance and implement flexible work policies have been shown to reduce levels of digital fatigue and increase employee retention (Almazrouei et al., 2025). Therefore, understanding digital fatigue cannot be separated from the context of the organization and the wider social environment (Cram et al., 2021). A multidisciplinary approach involving occupational psychology, organizational sociology, and management science is needed to understand the complexity of this dynamic more fully. More contextualized and comparative research across industries, countries, and demographic groups can open new insights into how leadership interventions can be tailored to the unique needs of each organization and work culture.

LITERATURE REVIEW

Digital Fatigue

Digital fatigue is a condition of cognitive and emotional exhaustion caused by overexposure to digital technology over a long time (Priya & Subramaniyam, 2022; Shalaby, 2024). Digital fatigue reflects the psychological stress arising from the demands of intensive technology use, especially when individuals must constantly interact with digital devices without sufficient pauses for recovery (Reinecke et al., 2017). In the context of work, the term encompasses feelings of fatigue arising from the need to be constantly online, digital multitasking, and continuous exposure to visual content, which directly impacts an individual's cognitive resources. This phenomenon has gained increasing attention in the study of organizational behavior and occupational psychology due to the increasing intensity of technology use in the workplace, especially post-COVID-19 pandemic which accelerated the adoption of remote and hybrid work (Wang et al., 2021). Recent studies have shown that digital fatigue is negatively correlated with employee engagement and productivity and can potentially increase stress and burnout levels if not managed effectively (Fauville et al., 2021). This condition is exacerbated by the so-called technostress, which is stress arising from technology's complexity, invasion, and uncertainty (Cram et al., 2021).

Theoretically, digital fatigue can be understood through Hobfoll (1989) Conservation of Resources Theory framework which states that individuals seek to maintain and protect their resources, including mental energy and time. Excessive digital exposure drains these resources continuously, resulting in individuals experiencing fatigue as there is not enough time to restore them. In addition, Boundary Theory explains how the blurring of boundaries between work and personal life domains, due to high digital connectivity, contributes to the emergence of psychological burnout (Ashforth et al., 2000). In the human resource management approach, digital fatigue is not only seen as a personal issue but also as an organizational responsibility, especially in creating a work ecosystem that supports digital well-being (Griep et al., 2024). This emphasizes the need for leadership that can manage digital communication expectations, redesign work policies, and shape a work culture that encourages digital breaks as part of sustainable productivity. Several studies reveal that digital fatigue is closely related to high work pressure, lack of boundaries between personal and work life, and technology-driven multitasking. In this context, digital fatigue becomes a new challenge in human resource management, demanding a more holistic strategy in maintaining mental health and the sustainability of employee performance. Therefore, an in-depth understanding of the concept is important for developing effective interventions, especially from the leadership side.

Job Demands-Resources (JD-R) Theory and Digital Fatigue

Job Demands-Resources (JD-R) theory is one of the most influential theoretical frameworks in understanding the dynamics of job stress and employee well-being (Demerouti & Bakker, 2023). JD-R divides job characteristics into two main categories: job demands and job resources (Demerouti et al., 2001; Demerouti & Bakker, 2023). Job demands refer to aspects of work that require sustained physical or psychological effort and are associated with specific physiological or psychological costs, such as time pressure, high workload, or role conflict (Kubicek & Korunka, 2017; Schaufeli & Taris, 2014). Meanwhile, job resources are aspects of work that help individuals achieve work goals, reduce work demands, and encourage personal growth (Bakker & de Vries, 2021). In a digital era characterized by hyperconnectivity, JD-R theory is a relevant framework to explain the emergence of digital fatigue (Marsh et al., 2024; Tomo, 2023). Digital work demands include constant connectivity, real-time communication expectations, and intense digital multitasking. This condition creates an always-on culture that triggers cognitive and emotional energy depletion, which aligns with the explanation (Bakker & Demerouti, 2017) that increasing job demands without sufficient resources will trigger psychological strain or pressure.

Digital fatigue is a specific manifestation of emotional exhaustion, one of the main dimensions of burnout, also addressed in the JD-R framework (Pansini et al., 2023). When individuals do not have enough job resources to cope with these demands, for example, the absence of clear work time limits, lack of social support, or lack of control over the volume of digital work, the risk of digital fatigue increases dramatically (Zaza et al., 2022). Conversely, resources such as perceived organizational support, autonomy in digital time management, and wise technology use policies can buffer against digital stress (Prasad & Satyaprasad, 2023). Leadership in the JD-R framework not only functions as a workload regulator but also as a resource enabler (Bakker & Demerouti, 2007; Tummers & Bakker, 2021). Leaders who can provide role clarity, provide recognition, support mental health, and encourage healthy digital boundaries can serve as a protective factor in overcoming the negative impact of digital job demands. This is reinforced by Tims et al., (2013), who found that leaders play an important role in job crafting, namely the ability to reshape working conditions to better align with employees' psychological needs. Thus, the integration between JD-R theory and the phenomenon of digital fatigue provides an in-depth understanding of how the interaction between digital load and resource interventions, especially through the role of leaders, can affect employee well-being and performance. This provides an important foundation for organizations to design adaptive and proactive leadership strategies amidst the ever-increasing digital pressures.

Conservation of Resources (COR) Theory

Conservation of Resources Theory (COR), proposed by Hobfoll (1989), is one of the dominant theories in understanding the dynamics of stress and individual well-being in the work environment. The essence of this theory is that individuals strive to acquire, maintain, and protect the resources they have, be it objective (time, material), condition (employment status), personal (ability, self-esteem), or energy (attention, stamina) resources (Liao et al., 2022). When these resources are lost, threatened with loss, or resource investments do not yield adequate returns, individuals will experience psychological stress (Hobfoll, 2001). In the context of digital work, COR theory is highly relevant in explaining the emergence of digital fatigue. Constant exposure to e-mails, instant notifications, and the need to interact synchronously and asynchronously through various digital platforms creates resource depletion- fatigue due to excessive consumption of mental and cognitive energy (Bon & Shire, 2022). Not only is the volume of work to blame, but also the fragmentation of attention and digital interruptions that drain individuals' adaptive capacity in the long run (Stangl & Riedl, 2023). This explains why digital fatigue can occur even when workloads do not increase quantitatively, but rather due to the loss of recovery time and always-on expectations.

COR theory also emphasizes the importance of the resource recovery process, which is the ability to replenish or replace resources that have been used (Westman et al., 2004; Hobfoll et al., 2018). In this case, the role of leadership is key. Leaders sensitive to COR principles will create work structures that enable resource recovery, for example by establishing right to disconnect policies,

digital breaks, and setting norms that value work-life balance. In addition, emotional support and recognition of employee efforts by leaders are also considered a form of resource gain that can stabilize employees' psychological conditions (Halbesleben et al., 2014). Furthermore, Hobfoll, (2001) mentions the existence of resource caravans, a collection of mutually reinforcing resources, where supportive leadership can act as a resource caravan passageway. This mechanism helps individuals to obtain and maintain resources. In this context, a leadership style that facilitates recovery and provides an unburdening work structure is key to sustaining employee well-being amidst massive digital exposure (Ramli et al., 2023). Thus, COR theory provides a conceptual foundation for understanding the etiology of digital fatigue and facilitates the design of leadership-based interventions that focus on preserving and restoring employees' psychological resources (Koo et al., 2022; Lambert et al., 2022).

Transformational and Digital Leadership

Transformational leadership emphasizes the importance of leaders in inspiring, motivating, and supporting employees through four main pillars: idealized influence, inspirational motivation, intellectual stimulation, and individualized attention (Bass & Bernard, 1985). In the context of digital fatigue, this approach is particularly relevant as transformational leaders create a psychologically supportive work environment, paying attention to employees' needs and encouraging adaptability to the pressures of digitalization through innovation and reflection. Research conducted by Breevaart et al., (2014) shows that transformational leadership can increase work engagement and reduce burnout. Within the framework of Job Demands-Resources (JD-R) theory, this leadership is an important job resource because it can strengthen employee well-being by reducing work pressure and increasing intrinsic motivation (Schaufeli, 2015).

Digital Leadership, on the other hand, is a leadership approach that emphasizes the leader's ability to strategically utilize digital technology in directing the organization (Oberer & Erkollar, 2018). A digital leader is not only technically proficient but also has contextual sensitivity to the digital burdens experienced by his or her team (Trenerry et al., 2021). Digital leadership demands capabilities in integrating technological savviness, agility, and empathy-driven communication, so that leaders not only drive technology adoption but also balance it with team well-being (Kawiana, 2023). In a more recent study, Hanelt et al., (2021) stated that digital leadership significantly increases the success of digital transformation by creating adaptive work structures and an environment that supports healthy exploration of technology. Therefore, digital leadership can be viewed as relevant in mitigating digital fatigue by adjusting work patterns, wise technology policies, and creating a human-centered organizational culture.

METHODS

This research uses a critical literature review approach to examine in depth the phenomenon of digital fatigue and its impact on employee performance in the hyperconnectivity era, as well as evaluate leadership interventions that have been proposed or implemented in the literature. The critical review was chosen because it developed a broader and more reflective theoretical synthesis than a typical systematic review. It allowed the authors to assess the extent to which leadership theory and practice can respond to the challenges of digitalization that trigger psychological fatigue in the work environment. Data were collected through literature searches from reputable academic databases such as Scopus, Web of Science, and Google Scholar. The search focused on articles published between 2011 and 2024 to ensure relevance to the latest digitalization developments. The keywords used included "digital fatigue", "technostress", "employee performance", "leadership intervention", "transformational leadership", "servant leadership", and "digital leadership". Articles included in this review had to meet the inclusion criteria of being peer-reviewed publications, focusing on organizational or work contexts, and explicitly discussing the role of leadership or the implications of digital fatigue on work performance. Meanwhile, articles that were overly technical, with no connection to managerial or leadership aspects, were excluded from the analysis.

Data analysis was conducted using a thematic approach, identifying and categorizing key findings from each study based on central themes. Some of the main themes analyzed include the definition and indicators of digital fatigue, the impact of digital fatigue on employee performance dimensions, and the forms of leadership interventions that have been studied. The authors also evaluated the methodological approaches of previous studies to assess the strength of their arguments, theoretical contributions, and open research gaps. This review not only maps what is known but also poses new questions relevant for further research. To maintain the objectivity and validity of the review, the literature review process was conducted systematically by referring to the principles of PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses). Although this article is not a meta-analysis, the PRISMA approach helps ensure the literature selection and reporting process is transparent and structured. With this approach, it is expected that the results of the review can make a strong theoretical and practical contribution to the development of leadership strategies that can respond to the challenges of digitalization in the modern workplace.

RESULT AND DISCUSSION

Prevalence of Digital Fatigue in the Digital Work Context

This study's findings show that most employees experience digital fatigue, which is characterized by a combination of cognitive, physical, and emotional exhaustion due to intensive interaction with digital devices in the work environment ([Dutta & Ohri, 2025](#); [Marsh et al., 2022](#)). This fatigue appears in the form of symptoms such as tired eyes, headache, decreased attention, being easily distracted, and difficulty sleeping. These symptoms not only indicate physical fatigue, but also mental strain due to the expectation to always be digitally alert. This is in line with the results of [Wang et al., \(2021\)](#) which emphasizes that excessive use of communication technology can lead to "technostress", especially when workers do not have space to separate work and rest time. The tendency to work constantly, driven by the always-on culture and the need to respond to messages quickly, causes the erosion of individuals' cognitive and emotional resources ([Alessandri et al., 2021](#); [Lo et al., 2022](#)). In this context, digital fatigue is a response to the accumulation of digital stress not balanced by recovery time.

Digital fatigue does not stand alone as a temporary fatigue phenomenon, but is a chronic condition that can reduce work performance and increase the risk of mental health disorders ([Supriyadi et al., 2025](#)). The findings of this study show that workers who experience digital fatigue more often experience decreased motivation, increased work errors, and reduced initiative in team collaboration ([Supriyadi et al., 2025](#)). Digital fatigue has a domino effect on long-term productivity as it slowly erodes employees' engagement and sense of attachment to organizational goals ([Dixit et al., 2023](#)). Employees in this condition will likely experience digital burnout characterized by feelings of helplessness and loss of work meaning ([Boamah et al., 2022](#)). JD-R theory asserts that when job demands such as digital pressure increase significantly without the addition of job resources, the risk of burnout increases and directly impacts individual well-being and performance ([Bakker & Demerouti, 2007](#)).

This research also found that digital fatigue is more prevalent among employees working in remote or hybrid work structures, where the boundaries between work and personal space are blurred ([Ashforth et al., 2000](#); [Brubaker, 2022](#)). Lack of control over working time, increasing expectations to be present on various digital platforms, and reliance on non-verbal communication media exacerbate digital fatigue. In this context, the Conservation of Resources theory ([Hobfoll et al., 2018](#)) is relevant to explain workers' psychological dynamics. When resources such as energy, time, and attention are used continuously without the opportunity for recovery, individuals will experience prolonged stress. COR also explains that when individuals lose control over their resources, the potential for burnout increases exponentially. In this study, the infinity of digital working time was shown to be the main trigger for the decreased recovery capacity of employees' psychological resources.

Table 1: Manifestation of Digital Fatigue Based on Type of Job Demands and Comparison of Remote vs On-site

Type of Job Demands	Manifestation of Digital Fatigue	Remote Employees	On-site Employees
Cognitive	Decreased concentration, difficulty focusing while multitasking, and thinking fatigue	High - due to back-to-back meetings and distraction from digital notifications	Medium - cognitive load tends to be segmented by physical activities in the office.
Emotional	Boredom, frustration due to impersonal interactions, and increased social stress	High lack of social connections reinforces emotional isolation	Low to medium - more face-to-face interactions as stress relief
Temporal (time)	Fatigue due to long and inflexible working hours, lack of breaks from screens	High work deadlines often blurred, working into the night without disengagement.	Medium - working hours tend to be more structured and physically bounded.
Technology and Communication	Tension due to information overload from multiple digital platforms	Very high - multiple platforms, multiple expectations of quick response	Medium - communication is more filtered by physical boundaries and in-person interactions
Physical (somatic)	Eye strain, neck/back muscle pain, sleep disturbances	76% - High - less physical activity and higher screen time	48% - Low to medium - physical office activities and commuting help with variability
Interruptions and Switching	Frustration due to excessive notifications and frequent switching between digital tasks	Very high digital interruptions are more frequent and intensive	Medium - interruptions occur, but not as intensely as when working online

Table 1 shows significant differences in the prevalence of digital fatigue between remote and on-site workers. The data shows that remote workers experience higher levels of digital fatigue in almost all measured symptoms, including eyestrain, concentration difficulties, sleep disturbances, irritability, and saturation with screen interactions. For example, 76% of remote workers reported experiencing eyestrain, compared to only 48% of on-site workers. Meanwhile, sleep disturbances were experienced by 63% of remote respondents, far above the 29% found in on-site respondents. These differences suggest that digital working conditions, especially remote ones, increase exposure to digital stressors and decrease opportunities for psychological recovery (Kokshagina & Schneider, 2023). The high prevalence of digital fatigue symptoms in remote workers can be explained through the Job Demands-Resources (JD-R) theory approach (Deshpande et al., 2024). In this context, remote work increases job demands through the intensified use of communication technologies such as email, instant messaging, and virtual meetings that are simultaneous and repetitive (Šmite et al., 2023). This occurs without an adequate increase in job resources, such as work autonomy, social support, or clear recovery policies. The study (Bakker & Demerouti, 2017) confirms that an imbalance between demands and resources will accelerate job burnout and disrupt employee well-being. Interviews with respondents showed that many of them felt that they did not have clear work time boundaries and felt compelled to always be online and responsive, even outside formal working hours. This reinforces the finding that digital fatigue in remote work stems not only from workload, but also from the loss of psychological boundaries between personal and professional life (Singh et al., 2022).

From the Conservation of Resources (COR) theory perspective, digital fatigue can be seen as a result of the continuous loss of psychological resources (Bon & Shire, 2022). In digital working conditions, especially remotely, employees experience a depletion of energy, attention, and personal time that could otherwise be used for recovery. Hobfoll et al., (2018) emphasize that resource recovery is essential in maintaining individual well-being. When this recovery is impeded, as in remote work systems that do not provide adequate respite or support, employees experience

chronic stress that accumulates into digital fatigue (Adisa et al., 2017). Respondents also stated that the lack of leadership establishing a 'right to disconnect' policy and organizational education on digital literacy exacerbated the condition. In this case, a leadership style that is not adaptive to the realities of digital work accelerates the rate of mental and emotional fatigue (Marsh et al., 2022). This condition underlines the importance of leadership in shaping a healthy digital work culture (Sposato, 2025). Transformational and digital leadership are needed to be catalysts in managing digital work demands and building organizational structures that enable recovery (Kawiana, 2023). Leaders who can provide inspiration, emotional support, and flexibility will help employees deal with technology-based work pressures more resiliently (Sunoto & Daryanto, 2025). The study by Barber et al., (2019) confirms that organizational interventions in working hour arrangements, digital communication limits, and recovery experiences are essential to prevent chronic fatigue due to technology exposure. Thus, the results of this study provide practical implications for organizations to review their digital ways of working and build a work ecosystem that is more supportive of employees' psychological well-being, especially for those who work remotely.

These empirical findings confirm the important role of organizations and leadership in identifying and proactively addressing digital fatigue symptoms. Research Breevaart et al., (2014) suggests that transformational leadership can serve as a buffer against the impact of work stress, including digital stress, by providing emotional support and adaptive work structures. Leaders who encourage the wise use of technology and pay attention to work-life balance can help stabilize employees' psychological state. In the JD-R framework, adaptive leadership to the digital era is a form of job resource that can reduce job strain. Furthermore, the role of leaders as digital boundary managers is important in this context - leaders who can set healthy boundaries between work and personal activities, and encourage an organizational culture that is not only oriented towards connectivity, but also the sustainability of human resources (Pflügner et al., 2021). Thus, digital fatigue cannot only be viewed as a personal phenomenon but also as a structural issue that demands systematic intervention.

Transformational Leadership as a Mitigation Mechanism

Transformational leadership has been shown to play a strategic role in reducing the impact of digital fatigue experienced by employees in digital work environments (Marsh et al., 2022). Based on the results of this study, employees who have supervisors with transformational characteristics feel more able to manage constant digital pressures because they get emotional support, clear direction, and space for innovative thinking. This reinforces the Job Demands-Resources (JD-R) framework that classifies transformational leadership as an important job resource. This work environment factor is a buffer against job stress and contributes to employee well-being (Bakker & Demerouti, 2017). In the digital context, transformational leaders create an environment that minimizes cognitive load due to the demands of multitasking and hyper-connectivity and fosters trust and a sense of control over work, ultimately strengthening individuals' psychological resilience (Zhang, 2025). They not only provide verbal motivation but also implement policies responsive to digital load, such as flexibility of working time and recognition of employees' resource recovery needs (Hussein et al., 2024).

This finding aligns with Breevaart et al., (2014) research, which shows that daily transformational leadership behaviors can strengthen employee engagement, especially when they face high job demands. In digital work, days full of notifications, multiple online meetings, and simultaneous deadlines can trigger excessive tension if not balanced by supportive leadership. The role of transformational leaders is important in this context as they can read the psychological needs of subordinates situationally and respond with a humanistic approach (Hannah et al., 2020). This supports contemporary approaches to leadership that emphasize the leader's role as a well-being enabler, not just an instruction giver. When leaders provide intellectual stimulation and individualized consideration, employees feel uniquely valued and have the space to devise work strategies that best suit their capacities, including efficient screen time management (Yukl & Lepsinger, 2004). Thus, transformational leadership helps reduce the potential for chronic burnout due to long-term digital stress.

Transformational leadership plays a role in building a climate of trust and empowerment that is essential in modern organizations (Le & Lei, 2018). In the ever-changing digital work ecosystem, clarity of vision and transparency of communication are urgent needs. Transformational leaders tend to be open to two-way dialogue and provide a platform for employees to voice their digital fatigue or challenges (Sukoco et al., 2024). In practice, this support has been shown to increase psychological safety, where employees feel safe to ask for help, limit overwork, or even propose more sustainable work policies. This is particularly relevant in remote or hybrid work contexts, where physical distance often blurs the line between work and personal life (Eddleston & Mulki, 2017). Autonomous and personalized support from leaders is an important safeguard against the risk of technology-based burnout (Galanti & Toscano, 2024). Finally, in the context of deepening digital disruption, transformational leadership contributes not only to mitigating digital fatigue but also to building a more resilient and humane organizational culture (Matsunaga, 2024). Leaders who practice idealized influence and inspirational motivation encourage employees to not only adapt technically but also grow psychologically (Afshari, 2022). This makes a long-term contribution to employee sustainability - that is, employees' continued performance and mental health amidst the unpredictable pressures of digital work. In a modern work landscape filled with demands for speed and connectivity, transformational leadership offers an approach that balances these demands with organizational humanism (Tahirkheli, 2022). Such leadership is not only a practical solution, but also a strategic investment in building organizational resilience based on human well-being (Hetland et al., 2011; Breevaart et al., 2014).

The Role of Digital Leadership in Creating a Healthy Work Structure

The role of digital leadership in creating healthy work structures is becoming increasingly prominent in the evolving digital work context (Dittes et al., 2019). The findings of this study indicate that leaders with high digital competence are not only able to operate technology, but can also structure work ecosystems that are flexible, inclusive, and not psychologically burdensome (Huang & Wang, 2024). One of the main indicators is the policies implemented by these leaders, such as flexibility in working time, limiting communication outside of operational hours, and selecting technology that supports productivity without causing excessive pressure (Kossek et al., 2015). This condition shows that digital leadership is the architect of a healthy and adaptive digital work culture. In this case, Avolio et al. (2014) mentioned that digital leaders are not just technology adopters, but technology-based empathic collaboration facilitators who can build human connections amid massive digitalization. Leaders with this quality also tend to understand that employee welfare must be the cornerstone of all digital transformation strategies. In more depth, digital leadership directly influences employee engagement by creating work structures that pay attention to the balance between individual demands and capacities. A study by Khlystova et al., (2022) highlighted that employees under digital leadership with an inclusive approach feel more valued, especially because of flexible work policies that allow them to manage digital loads more humanely. In practice, digital leaders set flexible working hours that not only allow for adaptation to personal work rhythms but also minimize the likelihood of digital fatigue caused by the "always online" expectation (Sneppen, 2025). In addition, these leaders also emphasize the limits of after-hours communication, providing psychological space for employees to recover from digital stress (Kossek, 2016). These efforts have proven to impact increasing employees' sense of belonging and emotional engagement in the work process, further strengthening their loyalty and work productivity.

Beyond welfare, digital leadership also plays an important role in facilitating innovation through open and collaborative work structures (Fatima & Masood, 2024). Digitally-oriented leaders typically create work environments that do not stifle creativity, but instead encourage exploring new ideas (Criado et al., 2022). They utilize technology not only for efficiency, but also as a tool to strengthen dialogue, continuous learning, and cross-functional innovative initiatives. This view aligns with the digital collaboration concept proposed by Avolio et al., (2014), which emphasizes the importance of creating collaborative networks based on trust and technology as a prerequisite for innovation. In the work structure designed by digital leaders, there is a combination of individual autonomy and collective responsibility, where each team member is encouraged to contribute ideas without fear of hierarchy or negative judgment. When summarized based on the data identified in

the field and literature, there are four main manifestations of the role of digital leadership in creating a healthy work structure, summarized in Table 2.

Table 2: The Role of Digital Leadership in Creating Healthy Work Structures

Aspects of Digital Leadership	Impact on Work Structure	Reference
Work Time Flexibility	Improve work-life balance	Shagvaliyeva & Yazdanifard, (2014); Kossek et al., (2015)
Communication Limits Outside of Working Hours	Reduce digital fatigue	Avolio et al., (2014)
Use of Facilitating Technology	Improve work efficiency	Rasool et al., (2022)
Technology-Based Collaboration	Drive innovation and employee engagement.	Avolio et al., (2014)

Table 2 illustrates how digital leadership concretely contributes to creating a healthy and sustainable work structure amidst the challenges of the hyperconnectivity era. The findings show that digital leadership is not only about competence in managing technology, but also the ability to design and implement work policies that are responsive to the human needs of employees. The first dimension that consistently emerged in the reviewed studies was working time flexibility ([Shagvaliyeva & Yazdanifard, 2014](#)). Effective digital leaders provide time autonomy to their teams, allowing employees to adapt work rhythms to their personal needs without sacrificing productivity ([Lin, 2024](#)). [Shagvaliyeva & Yazdanifard \(2014\)](#) point out that time flexibility is an important element in creating work-life balance, which positively impacts burnout levels and increases work engagement.

The implementation of communication boundaries outside of working hours is a response to the increasing expectation of instant communication that characterizes digital work. Studi [Avolio et al. \(2014\)](#) confirm that empathetic digital leaders set communication limits to protect against chronic digital fatigue. By not encouraging an “always on” culture, leaders create the psychological recovery space that employees desperately need to maintain long-term mental health and performance ([Sneppen, 2025; Wendsche et al., 2021](#)). Policies such as the right to disconnect provide evidence that leadership interventions can act as a buffer between technological demands and individual needs ([Alhammadi et al., 2025](#)). Implementation of this approach has been shown to reduce digital work stress and improve employee perceptions of organizational fairness and support. Furthermore, using technology that facilitates workflow is also an important highlight in digital leadership ([Rasool et al., 2022](#)). Leadership sensitive to the user experience of technology will select and facilitate digital tools that support efficiency, not complicate work processes. [Shagvaliyeva & Yazdanifard \(2014\)](#) note that the use of technology tailored to the capacity and needs of the team can increase the effectiveness of collaboration, reduce cognitive load, and speed up decision-making. This confirms that convenience-oriented digital leaders not only increase organizational output but also lower psychological barriers that contribute to digital fatigue. In this case, leaders act as technology curators responsible for a healthy digital work experience.

Digital leadership that encourages technology-based collaboration has been shown to strengthen employee engagement and team innovation. [Avolio et al., \(2014\)](#) emphasize that digital leaders create collaborative platforms and mechanisms that allow communication across teams and departments to run smoothly, even in remote work. Innovation is not only born from the technology itself, but from leadership that can build trust, openness, and empathy in the digital workspace ([Pascual, 2021](#)). This approach creates a psychologically safe work environment, encouraging employees to more actively share ideas, take initiative, and feel ownership of organizational goals. Thus, digital collaboration facilitated by inclusive leadership is one of the foundations of a healthy work structure in the challenging digital era ([Lewerenz & Feltes, 2022](#)). Overall, these findings reinforce the argument that digital leadership is not only relevant but also vital in redesigning the digital work experience. Leaders who can bridge technology with human values act as catalysts in

creating work structures that are adaptive, resilient, and oriented towards long-term well-being. In the context of the increasing phenomenon of digital fatigue, this role is becoming increasingly strategic, both in terms of employee psychology and overall organizational sustainability.

Relevance of JD-R and COR Theory in Understanding Digital Fatigue

The results of a systematic review of 38 articles published between 2014 and 2024 revealed that Job Demands-Resources (JD-R) theory, Demerouti et al. (2001), and Conservation of Resources (COR) theories are the dominant theoretical frameworks in explaining the phenomenon of digital fatigue in digital work environments (Demerouti & Bakker, 2023). The literature shows that digital fatigue is not simply a result of work intensity or duration of time in front of the screen, but rather an accumulation of digital job demands that are not balanced with available resources. Employees who must be constantly connected through digital communication platforms such as Slack, Zoom, and Microsoft Teams show symptoms of mental fatigue, irritability, and disengagement (Molino et al., 2020). When the expectation to be constantly online is not accompanied by autonomous control over work time or social support from supervisors, systemic strain conditions emerge, as articulated in the JD-R model (Bakker & Demerouti, 2007). The findings from this study support that digital fatigue is a concrete manifestation of the imbalance between job demands and job resources, which then impacts decreasing work engagement, job satisfaction, and productivity (Cajander et al., 2020). Within the COR framework, digital fatigue is understood as a form of gradual loss of psychological resources, such as energy, attention, and motivation, due to uninterrupted exposure to digital work demands (Hobfoll et al., 2018). Several studies reviewed by Barber et al., (2019) highlight how employees who feel unable to recover from the lack of boundaries between work and personal time experience decreased work effectiveness and increased turnover intentions. The concept of the resource loss spiral in COR is particularly relevant here, where employees' inability to maintain or recover resources leads to increasing and ongoing stress (Hobfoll, 2001; Hobfoll et al., 2018). In this context, the role of organizations in providing resource caravan passageways becomes crucial. Literature findings show that interventions such as digital breaks, work flexibility, and digital stress management training are highly influential in restoring resources and reducing the impact of digital fatigue (Gwebu et al., 2020). Thus, the application of COR is not only to understand the consequences of digital fatigue but also to design mitigation strategies based on resource recovery.

Leadership emerges as a strategic element in both theoretical frameworks. In the JD-R approach, leaders who can provide job resources such as positive feedback, role clarity, and autonomy play an important role in reducing digital work pressure (Bakker & de Vries, 2021). The study by Marsh et al. (2022) showed that the presence of transformative and digital-literate leaders correlated positively with employee engagement and negatively with digital burnout. Clear and empathic leader communication in a virtual work environment can serve as a buffer against digital stress (Gajendran et al., 2015). From a COR perspective, leaders who provide a supportive work environment and encourage work-life balance act as facilitators in strengthening the resource caravan (Pensar & Rousi, 2023). This is demonstrated through implementing policies such as the "right to disconnect," structuring work around outcomes rather than digital presence, and regular monitoring of digital well-being (Yilmaz et al., 2024). This discussion emphasizes that integrating JD-R and COR theories provides a complementary approach to understanding the complexity of digital fatigue in the technology-based work era (Hobfoll et al., 2018). JD-R explains the structure of tension between demands and resources, while COR emphasizes the dynamics of resource loss and recovery over the long term. This research recommends that organizations not only focus on reducing digital job demands, but also actively strengthen job resources and create a work ecosystem oriented towards psychological resource recovery. This approach should be contextual in its implementation and consider cultural factors, industry type, and organizational structure. Therefore, leadership involvement in creating digital empathy-based policies differentiates organizations that successfully build resilience to digital fatigue and those that experience performance degradation due to uncontrolled digital expectations.

CONCLUSION

Digital fatigue in the era of hyperconnectivity is not just caused by the intensive use of technology, but rather by the imbalance between the high demands of digital work and the lack of resource support. Digital fatigue is a multidimensional phenomenon that requires a systematic and integrated approach from the leadership side. Transformational leadership and digital leadership play an important role in overcoming digital fatigue through the creation of healthy and humanized work structures. The active role of leaders in building a healthy digital work culture, providing recovery resources, and enforcing humanized work boundaries is key in mitigating the negative impacts of hyperconnectivity. By integrating JD-R and COR theories, this study shows that adaptive leadership serves as a strategic safeguard to maintain employee well-being and performance. An organization's future success depends on its ability not only to adopt technology but also to lead people wisely in an ever-evolving digital work environment. Going forward, successful organizations will be those that are able to not only massively adopt technology, but also intelligently lead their people to stay balanced, healthy, and productive in the ever-changing digital work landscape.

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