

When Digital Hindrance Stressors Lead to Cyberloafing: Insights from Self-regulation Theory

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Abstract: With the continuous advancement of digital transformation, digital technologies such as big data and artificial intelligence have greatly reshaped corporate office practices. While these technologies significantly improve organizational work efficiency, they also produce digital hindrance stressors, which bring negative effects on employees' mental states and work behaviors. In digital office settings, employees are faced with growing digital-related work pressure, and cyberloafing as a type of work-deviant behavior occurs more frequently. Drawing on self-regulation theory, this study selects self-regulation impairment as the mediating variable and self-regulation trait as the moderating variable. It systematically analyzes the underlying influence path through which digital hindrance stressors act on employees' cyberloafing behavior via self-regulation impairment, under the moderating effect of self-regulation trait.

Keywords: Digital Hindrance Stressors; Cyberloafing; Self-regulation Impairment; Self-regulation Trait.

1. Introduction

The widespread application of modern information technologies, represented by mobile Internet, has facilitated employees' task completion and enhanced work efficiency, while also inducing cyberloafing in the workplace. Cyberloafing refers to employees' use of the internet during work hours to engage in activities unrelated to their job tasks (Wu et al., 2020). According to survey findings, employees spend up to two hours per day cyberloafing during working hours, which translates into an annual organizational cost of approximately USD 85 billion (Zakrzewski, 2016). Given the prevalence of cyberloafing and its detrimental impact on organizations, exploring its antecedents holds considerable practical importance. Prior research on the antecedents of cyberloafing has primarily examined the effects of leadership styles (Zhu et al., 2021; Peng et al., 2023; Zhang et al., 2022), job characteristics (Korzyński & Protsiuk, 2024; Usman et al., 2021), and employee traits (Zhang et al., 2015; Blanchard & Henle, 2008). However, only a limited number of studies have examined the antecedents of cyberloafing from the perspective of hindrance technostressors. To fill this gap, we propose that digital hindrance stressors—conceptualized as a form of hindrance technostressors in the context of digital transformation and defined as stressors arising from digital technologies that exert direct or indirect pressure on employees' attitudes, psychological states, and behavior—constitute a potentially important antecedent (Gimpel et al., 2025). Employees exposed to digital hindrance stressors may experience depletion of cognitive and emotional resources, which can trigger cyberloafing to facilitate emotion regulation and resource recovery. Therefore, we posit that digital hindrance stressors may represent an important contextual factor in eliciting employees' cyberloafing.

Self-regulation theory posits that individuals rely on self-regulatory resources to control or restrain undesirable impulses triggered by situational factors and to adjust subsequent behavioral responses (Baumeister et al., 2007). These resources, however, are limited in capacity (Chen et al., 2022). As a salient negative situational factor in the workplace (Hargrove et al., 2013), digital hindrance stressors can evoke

employees' negative emotions, leaving them in a prolonged state of concern or worry (Gimpel et al., 2025). To cope with these adverse effects, employees draw upon their limited self-regulatory resources, leading to self-regulation impairment, which may, in turn, give rise to deviant behaviors such as cyberloafing (Chen et al., 2022). Accordingly, self-regulation impairment is posited to mediate the relationship between digital hindrance stressors and cyberloafing. At the same time, self-regulation theory suggests that self-regulatory traits can, to some extent, buffer against the depletion of individuals' emotional and cognitive resources caused by stressors (Fürstenberg et al., 2024; Cole et al., 2004). When self-regulatory traits are stronger, employees expend fewer self-regulatory resources in coping with digital hindrance stressors, thereby reducing self-regulation impairment. Thus, self-regulatory traits are expected to moderate the relationship between digital hindrance stressors and self-regulation impairment.

2. Hypothesis Development

2.1. Digital Hindrance Stressors and Cyberloafing

Self-regulation theory posits that when individuals experience stressors, they engage in a series of behaviors to mitigate their impact (Thau & Mitchell, 2010), and cyberloafing serves as an important coping behavior to alleviate the influence of such stressors. When employees are confronted with digital hindrance stressors such as excessive workloads, frequent work interruptions, and ongoing digital technology updates, they not only find it more difficult to accomplish their tasks but also experience psychological frustration (Gimpel et al., 2025; Ayyagari et al., 2011; Tarafdar et al., 2007). In such circumstances, employees are more likely to divert their attention through covert cyberloafing—such as browsing non-work-related websites or chatting via WeChat or QQ—in order to quickly alleviate the stress caused by hindering digital stressors. Second, due to strict performance monitoring and the requirement for immediate responsiveness outside regular working hours, digital hindrance stressors blur the boundaries between

employees' work and personal life, thereby reducing their sense of control in both domains (Day et al., 2012; Ayyagari et al., 2011; Turel et al., 2011; Gimpel et al., 2025). Scholars suggest that cyberloafing serves as an important means for employees to restore this sense of control (Koay et al., 2022). Consequently, employees are more likely to engage in "brief-escape" cyberloafing behaviors to regain their sense of control. Thereby, we propose:

Hypothesis 1. Digital hindrance stressors are positively related to employee cyberloafing.

2.2. Mediating Role of Employee Self-regulation Impairment.

Self-regulation impairment refers to a state in which an individual's ability to manage their emotions, behaviors, and cognitive resources is weakened or depleted (Wagner & Heatherton, 2014; Thau & Mitchell, 2010). According to self-regulation theory, individuals tend to engage in self-regulation when confronted with ambiguous or aversive situations; however, this process consumes substantial cognitive and emotional resources, potentially resulting in self-regulation impairment (Wagner & Heatherton, 2014; Fürstenberg et al., 2024). Therefore, digital hindrance stressors may deplete employees' self-regulatory resources, leading to self-regulation impairment. First, digital hindrance stressors often give rise to stronger negative emotional reactions among employees (Gimpel et al., 2025). When experiencing such negative emotions, employees may face a conflict between the desire to vent these emotions through negative expressions or behaviors and the goal of manifesting positive emotions or behaviors to complying with workplace norms and achieve performance standards (Baranik et al., 2016). In this case, efforts to reconcile the mismatch between employees' authentic emotions and behavioral tendencies and the organizationally prescribed emotions and behaviors require substantial self-regulatory resources (Zhang et al., 2022), resulting in self-regulation impairment. Second, Digital hindrance stressors increase ambiguity and uncertainty in task completion and blur the boundaries between work and personal life (Gimpel et al., 2025), leading employees to perceive a reduced sense of control and remain in a prolonged state of vulnerability at work (Wagner and Heatherton, 2014; Fürstenberg et al., 2024). In such circumstances, employees must expend additional resources to overcome this vulnerability and maintain work performance (Fürstenberg et al., 2024), which in turn results in self-regulation impairment. Third, although no studies have directly examined the impact of digital hindrance stressors on employees' self-regulation impairment, indirect empirical evidence suggests that techno-invasion positively affects self-regulation impairment (Chen et al., 2022).

Self-regulation theory suggests that self-regulation impairment can result in adverse behavioral outcomes (Baumeister et al., 1998). Accordingly, self-regulation impairment may trigger employees' cyberloafing. First, visiting general news websites and checking nonwork-related e-mail are example of cyberloafing that can facilitates employees' attainment of pleasure (Lim, 2002). Because individuals with self-regulation impairment possess fewer self-regulatory resources to control themselves and restrain impulses, they find it more difficult to resist temptations and are more inclined to act impulsively (Baumeister et al., 2007; Hagger et al., 2010). Thus, when employees experience self-regulation impairment, they find it difficult to resist the

immediate gratification brought by cyberloafing, thereby becoming more likely to engage in it more frequently. Second, employees experiencing self-regulation impairment are more likely to exhibit maladaptive behaviors as a means of distancing themselves from stressor-related pressures at work (Herman & Polivy, 2011; Zhang et al., 2022). Indulgent behaviors—such as visiting general news websites and checking nonwork-related e-mail—can function as coping strategies that help employees temporarily distance themselves from the distress caused by digital hindrance stressors. Third, existing research indicates that individuals with impaired self-regulation exhibit more deviant behaviors (Chen et al., 2022; Mao et al., 2022), and cyberloafing constitutes an important dimension of such behaviors (Lim, 2002). Accordingly, it is proposed that employees' self-regulation impairment positively predicts their engagement in cyberloafing.

Hypothesis 2. Self-regulation impairment mediated the relationship between digital hindrance stressors and employee cyberloafing.

2.3. Moderating Role of Employee Self-regulation Trait

The self-regulation trait refers to a stable capacity that enables individuals to actively adjust their emotions, behaviors, and cognitions to adapt to environmental changes and achieve desired goals (Carver & Scheier, 2012; Fürstenberg et al., 2024). According to self-regulation theory, the self-regulation trait buffers the depletion of individuals' emotional and cognitive resources caused by work stressors (Fürstenberg et al., 2024; Cole et al., 2004). Accordingly, this study proposes that the self-regulation trait moderates the relationship between digital hindrance stressors and self-regulation impairment.

Employees with high self-regulation trait are adept at allocating attention and engaging in cognitive reappraisal (Ochsner and Gross, 2005; Jiang et al., 2013). These abilities not only enable them to more readily shift their focus away from stress-inducing stimuli but also allow them to recognize opportunities for personal growth and development through reinterpreting such stimuli (Ochsner and Gross, 2005; Jiang et al., 2013; Fürstenberg et al., 2024). When confronted with digital hindrance stressors, employees high in self-regulation can alleviate their negative effects by redirecting attention away from them, while also uncovering potential benefits through cognitive reappraisal—such as enhancing digital skills and improving work performance. Consequently, they are more likely to proactively formulate effective strategies to cope with digital hindrance stressors, thereby mitigating the detrimental impact of such stressors on self-regulation impairment. In contrast, employees with low trait self-regulation possess limited capacities for attentional shifting and cognitive processing (Jiang et al., 2013; Fürstenberg et al., 2024). This not only makes it difficult for them to comprehensively perceive and understand stress-inducing stimuli but also leaves them more vulnerable to their negative effects (Jiang et al., 2013; Fürstenberg et al., 2024). When confronted with digital hindrance stressors, employees with low self-regulation trait are more likely to appraise these stressors negatively and to be more strongly influenced by their adverse impact.

Hypothesis 3. Employee self-regulation trait moderates the positive relationship between digital hindrance stressors and employee self-regulation impairment.

3. Theoretical Implications

First, we broaden the limited understanding of how digital hindrance stressors relates to employees' cyberloafing. Prior research on the effects of digital hindrance stressors has predominantly focused on a single dimension, such as technology intrusion or work overload, to examine their influence on employees (Chen et al., 2022; Camacho & Barrios, 2022). To date, only one studies have conceptualized digital hindrance stressors as an integrated construct, and confirmed its significant impact on employee job satisfaction and burnout (Gimpel et al., 2025); our finding that digital hindrance stressors also positively predict employees' cyberloafing, responding to the call for understanding the consequences of digital hindrance stressors (Gimpel et al., 2025). We also advance the literature on cyberloafing by demonstrating that, beyond leader factors (e.g., abusive supervision and responsible leadership) and individual traits such as future orientation (Zhang et al., 2015; Koay et al., 2022; Zhu et al., 2021), workplace stressors—such as digital hindrance stressors—also play a critical role in explaining why employees engage in cyberloafing.

Second, our findings lend support to the self-regulation perspective, indicating that digital hindrance stressors can induce employee cyberloafing through mechanisms beyond the emotional exhaustion pathway highlighted in prior studies, specifically by undermining employees' self-regulatory capacity. Based on self-regulation theory, the present study suggests that digital hindrance stressors might erode employees' self-regulation resources, ultimately resulting in self-regulation impairment.

High levels of self-regulation impairment induced by digital hindrance stressors reduce employees' ability to resist temptation and heighten their impulsivity, thereby increasing the likelihood of cyberloafing. Moreover, these findings were demonstrated while emotional exhaustion was controlled, highlighting the unique mechanism of self-regulation impairment through digital hindrance stressors promotes employee cyberloafing behaviors. Our results, in conjunction with the evidence from Zhou et al. (2023) and Lim et al. (2021), illustrate a broader picture of how hindrance stressors exert positive effects on employees' cyberloafing.

Third, consistent with self-regulation theory, we found that self-regulation traits have the potential to weaken the positive influence of digital hindrance stressors on employee self-regulation impairment. This finding implies that the self-regulation trait may serve as a protective mechanism by either diverting attention away from digital hindrance stressors or perceiving their potential benefits, which in turn buffers the resource-depleting effects of such stressors on employees' self-regulation, thereby highlighting the importance of cultivating employees' self-regulation capacity. This finding also broadens prior research on self-regulation trait, which has predominantly examined the moderating effect of self-regulation trait in the influence of environment factors (i.e., task conflict and paradoxical leadership behavior) and individual factors (i.e., late-night smartphone usage) (Nauman et al., 2023; Jiang et al., 2013; Fürstenberg et al., 2024), and highlight the potential buffering role of self-regulation trait in mitigating the detrimental impact of hindrance stressors (e.g., digital hindrance stressors on employees' self-regulation impairment).

4. Summary

First, drawing on self-regulation theory, this study identifies self-regulation impairment as a mediator between digital hindrance stressors and employees' cyberloafing. This highlights the explanatory value of self-regulation impairment in this relationship. However, conservation of resources theory and cognitive appraisal theory also provide plausible mechanisms. Accordingly, future research should incorporate representative constructs from these frameworks into integrative models to further evaluate the relative explanatory power of self-regulation impairment. Second, grounded in self-regulation theory, this study highlights the role of self-regulatory traits as an individual-level boundary condition in the effects of digital hindrance stressors. Yet, boundary conditions may also arise at higher levels, such as employee-oriented leadership or HR practices that emphasize employee well-being. Future research should therefore integrate multilevel perspectives by examining how individual, leadership, and organizational factors jointly moderate the influence of digital hindrance stressors, thereby advancing a more contextualized understanding. Moreover, although the study employed a three-wave design to measure digital hindrance stressors, self-regulation impairment, and cyberloafing, the data remain cross-sectional in nature, limiting causal inference. Building on Chen et al. (2025), future work could adopt experience sampling methods to capture daily dynamics of digital hindrance stressors, self-regulation impairment, and cyberloafing, and replicate the theoretical model, thus providing stronger evidence for causal mechanisms.

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