



# Navigating the Dark Side of Digital Leadership in Higher Education: Exploring the Mediating Role of Technostress and the Moderating Role of Resilience on Cyberloafing

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## Research Article

### Abstract

**Purpose:** Drawing on Conservation of Resources (COR) Theory, this study investigates the direct effect of digital leadership on cyberloafing, the mediating role of technostress, and the moderating role of resilience in the relationship between technostress and cyberloafing among university faculty members.

**Methods:** Data were collected from 303 faculty members employed at private universities in Bangladesh using a survey questionnaire. The proposed relationships among digital leadership, technostress, resilience, and cyberloafing were examined using SPSS version 27 and AMOS version 24.

**Results:** The results reveal that digital leadership positively influences both technostress and cyberloafing. Technostress also has a significant positive effect on cyberloafing and partially mediates the relationship between digital leadership and cyberloafing. Furthermore, resilience moderates the relationship between technostress and cyberloafing by weakening the positive impact of technostress on cyberloafing.

**Implications:** The findings suggest that educational institutions should be cautious when implementing technology-driven leadership practices, as they may unintentionally increase employees' technological stress and cyberloafing behavior. Universities should also promote resilience-building initiatives to help faculty members effectively cope with technology-related demands.

**Originality:** This study extends the digital leadership literature by uncovering its potential negative consequences through the mechanism of technostress. It further contributes to COR theory by demonstrating how resource depletion resulting from technology-related stress can foster cyberloafing, while resilience serves as a valuable personal resource that mitigates this effect.

**Keywords:** Digital leadership, Cyberloafing, Technostress, Resilience, Higher education, Bangladesh

## 1. Introduction

Education plays a crucial role in shaping individual development and broader societal progress (Semonti et al., 2026). Within this system, teachers serve as key contributors to intellectual, social, and emotional development, making their effectiveness essential for long-term societal advancement (Aboramadan et al., 2021; Bakir & Dahlan, 2023). However, maintaining employee productivity and sustained work

engagement has become increasingly challenging in modern educational institutions, particularly within highly digitalized work environments (You et al., 2024). The growing integration of digital technologies into teaching, administration, communication, and performance management has fundamentally transformed how employees perform their work activities (Anwar & Saraih, 2024). Although digital transformation offers greater flexibility, efficiency, and connectivity, it has also introduced new workplace challenges that may negatively affect employee behavior and organizational productivity (Karakose et al., 2024). One emerging concern in digitally intensive workplaces is cyberloafing (Tandon et al., 2022), which refers to employees' use of internet resources, social media, or digital devices for non-work-related activities during working hours (Roy et al., 2024; Tandon et al., 2022). Cyberloafing is often viewed as a counterproductive workplace behavior because it reduces productivity and misuses organizational resources (Lim & Teo, 2024). However, recent studies suggest that employees may also engage in cyberloafing as a coping strategy to temporarily escape work pressure and psychological exhaustion (An et al., 2025). In educational institutions, excessive cyberloafing can be particularly problematic, as it may reduce teaching effectiveness, lower employee concentration, and disrupt institutional performance (Arslantas et al., 2024). As organizations become increasingly dependent on digital technologies, leadership practices have also evolved considerably (Nguyen et al., 2026). Traditional face-to-face leadership approaches are gradually being replaced by technology-enabled leadership styles characterized by virtual communication, digital coordination, and online performance management (Anwar & Saraih, 2024; Avwokeni, 2026). In this context, digital leadership (DL) has emerged as an important organizational capability that enables leaders to guide employees through rapidly changing technological environments (Tigre et al., 2023). Digital leadership refers to leaders' ability to effectively utilize digital technologies, support innovation, facilitate virtual collaboration, and help employees adapt to digital work systems (Larjovuori et al., 2016). Existing studies have primarily highlighted the positive outcomes of digital leadership, including enhanced innovation, employee engagement, flexibility, and organizational adaptability (Zeike et al., 2019; Zhu et al., 2022). Despite these positive contributions, the increasing dependence on digital technologies may also create unintended negative consequences for employees (Reiby & Sagberg, 2023). Continuous connectivity, constant online availability, excessive virtual communication, and technology-driven monitoring systems may overwhelm employees and blur the boundaries between work and personal life (Ferhani & Isseki, 2025). Employees operating under digitally intensive leadership environments may experience cognitive overload, emotional fatigue, and psychological strain, which can ultimately encourage disengaged workplace behaviors such as cyberloafing (Nguyen et al., 2026; Reiby & Sagberg, 2023). However, despite the growing adoption of digital leadership practices, limited research has examined its potential dark side, particularly regarding its influence on negative employee behaviors (Karakose et al., 2022).

To explain this relationship, the present study introduces technostress as an important mediating mechanism. Technostress refers to the stress individuals experience due to their inability to effectively cope with technological demands and continuous digital adaptation (Tarafdar et al., 2007; Wang et al., 2008). In digitally demanding workplaces, employees are often required to continuously adapt to new systems, remain constantly connected, and manage excessive information flows, which may gradually deplete their cognitive and emotional resources (Senadjki et al., 2024; Tarafdar et al., 2015). As a result, employees experiencing technostress may engage in cyberloafing as a temporary coping strategy to recover psychological energy and reduce work-related strain. Drawing on Conservation of Resources Theory (Hobfoll, 1989), this study argues that continuous technological demands, excessive connectivity, and digitally intensive leadership practices may deplete employees' cognitive and emotional resources, thereby increasing technostress and encouraging cyberloafing behavior as a coping mechanism for temporary psychological recovery (Fuglseth & Sørebo, 2014; Nastjuk et al., 2024). However, employees with higher resilience may possess stronger psychological resources that help them cope more effectively with

technological stress and reduce engagement in cyberloafing behaviors (Roy & Islam, 2025). Despite the growing importance of digital transformation in modern workplaces, limited research has examined the dark side of digital leadership, particularly its influence on cyberloafing behavior through technostress and the buffering role of resilience (Hessari et al., 2025; Karakose et al., 2022). Therefore, further investigation is necessary to better understand how digitally intensive leadership practices shape employee behavioral outcomes in contemporary organizations.

Against this backdrop, the present study aims to achieve three key objectives. First, the study examines the direct relationship between digital leadership and cyberloafing behavior among employees in educational institutions. Second, the study investigates the mediating role of technostress in explaining how digitally intensive leadership practices contribute to cyberloafing behavior. Third, the study explores the moderating role of resilience in weakening the positive relationship between technostress and cyberloafing. Accordingly, this study makes several important contributions to the literature on the dark side of digital leadership and deviant workplace behavior. First, the study extends the growing digital leadership literature by shifting attention from its predominantly positive outcomes toward its unintended negative behavioral consequences, particularly cyberloafing, thereby addressing ongoing research calls for a more balanced understanding of digital leadership outcomes (Hessari et al., 2025; Karakose et al., 2022). Second, the study contributes to the technostress literature by identifying technostress as a key psychological mechanism through which digital leadership indirectly influences employee behavior. Third, by incorporating resilience as a moderating resource, the study advances Conservation of Resources Theory by demonstrating how personal psychological resources can buffer the adverse effects of technological stress in digitally transformed workplaces. Finally, the study contributes to the emerging discussion on employee well-being and workplace behavior within educational institutions, where digital transformation is rapidly reshaping leadership practices, communication systems, and work experiences.

## **2. Theoretical review and hypothesis development**

### **2.1. Digital leadership and Cyberloafing**

In contemporary workplaces, leadership is no longer confined to face-to-face interactions; instead, it is increasingly enacted through digital platforms, virtual communication systems, and technology-enabled coordination mechanisms (Tigre et al., 2023; Topcuoglu et al., 2023). As organizations continue to undergo digital transformation, leaders are expected not only to manage employees but also to guide them through rapidly evolving technological environments (AlDhaheri et al., 2026; Zeike et al., 2019). In this context, Digital Leadership (DL) has emerged as a critical organizational capability in technology-driven workplaces (Huvanandana & Charoensukmongkol, 2026). Digital leadership refers to leaders' ability to effectively utilize digital technologies, foster innovation, manage virtual communication, and support employees in adapting to digital work environments (Larjovuori et al., 2016). Digital leaders promote flexibility (Alam et al., 2025), technological learning (Mollah et al., 2023), collaboration (Saputra et al., 2021), and efficient information sharing (Treves et al., 2026), thereby enabling organizations to remain competitive in increasingly digitalized markets. Prior studies have largely emphasized the positive outcomes of digital leadership, including enhanced employee performance, creativity, work engagement, innovation, and organizational adaptability (Chatterjee et al., 2023; Zhu et al., 2022). Through effective digital communication and technological support, digital leaders can create more connected and responsive work environments that enhance employees' work experiences (Chatterjee et al., 2023). However, despite these advantages, the growing reliance on digital technologies may also generate unintended negative consequences for employees (Reiby & Sagberg, 2023). Continuous connectivity, frequent virtual interactions, excessive digital monitoring, and rising technological demands may overwhelm employees and blur the boundaries between work and personal life (Ferhani & Isséki, 2026). Employees may feel

pressured to remain constantly available and responsive in digitally intensive workplaces, which can increase stress, fatigue, and psychological strain (Ferhani & Isseki, 2025; Reiby & Sagberg, 2023). Consequently, digital leadership does not always translate into favorable behavioral outcomes, particularly when employees struggle to cope with persistent technological demands (Lettner et al., 2023).

One such behavioral outcome is cyberloafing, which refers to employees' use of the internet, social media, or digital devices for non-work-related activities during working hours (Roy et al., 2024). This includes activities such as browsing social networking sites, online shopping, watching entertainment content, or engaging in personal online communication while at work (Lim & Teo, 2024). Although cyberloafing is typically viewed as a counterproductive workplace behavior due to its association with reduced productivity and resource misuse, some scholars argue that it may also function as a short-term coping mechanism for psychological recovery from work pressure and digital exhaustion (An et al., 2025). In line with COR theory, individuals strive to obtain, maintain, and protect valued resources such as energy, time, attention, and psychological well-being. When employees experience resource depletion due to excessive technological demands, constant connectivity, or digital pressure, they become more vulnerable to stress and exhaustion (Hobfoll, 1989; Roy & Islam, 2025; Roy et al., 2025). In such situations, employees may engage in cyberloafing as a coping strategy to temporarily conserve or restore depleted psychological resources (Roy et al., 2024). Accordingly, it can be hypothesized that:

*H1: DL has a positive impact on cyberloafing.*

## **2.2. Mediating Role of Technostress**

In today's hyperconnected workplaces, technology has become both an indispensable resource and a persistent source of pressure (Cooke et al., 2019; Ding, 2026). Although digital tools are designed to enhance efficiency, constant connectivity, rapid technological change, and expectations of immediate responsiveness often create psychological strain among employees (Tarafdar et al., 2007). This phenomenon, commonly referred to as technostress, has emerged as a critical challenge in modern organizations where employees are required to continuously adapt to evolving digital systems and communication platforms (Rademaker et al., 2025). Technostress generally refers to the stress individuals experience due to their inability to effectively cope with the demands associated with information and communication technologies (ICTs) (Tarafdar et al., 2007). It manifests through feelings of overload, complexity, uncertainty, and invasion of personal boundaries driven by excessive technology use (Yang et al., 2025).

Within digitally transformed organizations, leadership practices play an important role in shaping employees' technological experiences (Rademaker et al., 2025). Digital leadership emphasizes the use of digital technologies, virtual communication, and technology-driven management approaches to improve organizational effectiveness and innovation (Chavez et al., 2026; Yang et al., 2025). While such leadership can foster flexibility and connectivity, it may also unintentionally intensify employees' technological demands (Westerman et al., 2014; Zeike et al., 2019). Digital leaders often encourage rapid adaptation to digital systems, continuous online availability, multitasking across platforms, and technology-enabled performance monitoring (Larjovuori et al., 2016). These expectations can easily overwhelm employees, particularly when organizational support or digital competence is insufficient (Ayyagari et al., 2011; Tarafdar et al., 2007). Prior research suggests that excessive digital demands and technology-driven work environments significantly increase technostress, as employees perceive continuous technological adaptation as cognitively and emotionally exhausting (Ayyagari et al., 2011). Consequently, employees operating under digitally intensive leadership may experience heightened stress, fatigue, and frustration associated with technology use (Salanova et al., 2013).

Technostress may subsequently encourage employees to engage in cyberloafing as a coping mechanism. Cyberloafing refers to employees' use of organizational internet access or digital devices for non-work-

related purposes during working hours (Roy et al., 2024). Employees experiencing high levels of technostress often attempt to psychologically detach from these demands by temporarily shifting their attention toward leisure-oriented online activities such as browsing social media, watching videos, or engaging in personal messaging (Baturay & Toker, 2015). Such behaviors may offer short-term emotional relief and cognitive recovery from continuous technological pressure (Koay et al., 2017; Vitak et al., 2011). Prior studies further indicate that stressed employees frequently engage in cyberloafing to reduce tension, restore depleted energy, and escape work-related strain (Lim, 2002). Accordingly, technostress may act as an important psychological mechanism through which digital leadership indirectly influences cyberloafing behavior (Ayyagari et al., 2011; Tarafdar et al., 2007). In accordance with COR, individuals strive to obtain, protect, and preserve valuable personal resources such as energy, attention, emotional stability, and psychological well-being (Hobfoll, 1989). Stress occurs when these resources are threatened or excessively depleted. In digitally demanding workplaces, continuous technological adaptation, constant connectivity, and information overload consume employees' cognitive and emotional resources, thereby generating technostress (Ghasemi et al., 2024). As resource depletion intensifies, employees may engage in cyberloafing as a defensive coping strategy to conserve or restore their psychological resources. From this perspective, it can be hypothesized that:

*H2: DL positively impacts technostress*

*H3: Technostress positively impacts Cyberloafing*

*H4: Cyberloafing positively mediates the relationship between digital leadership and cyberloafing*

### **2.3. Moderating role of resilience**

In an increasingly digitalized work environment, individuals are not only exposed to technological demands but also differ significantly in how effectively they cope with such pressures (Fletcher & Sarkar, 2013; Luthans et al., 2006). Among the psychological resources that shape employees' responses to digital stressors, resilience has received growing attention as a key protective capacity (Roy & Islam, 2025, 2026b). Resilience refers to an individual's ability to adapt positively, recover quickly, and maintain psychological functioning in the face of adversity, stress, or change (Fletcher & Sarkar, 2013; Luthans et al., 2006). Rather than being a fixed trait, it reflects a dynamic process through which employees mobilize internal and external resources to cope with challenging work conditions and sustain performance (Windle, 2011).

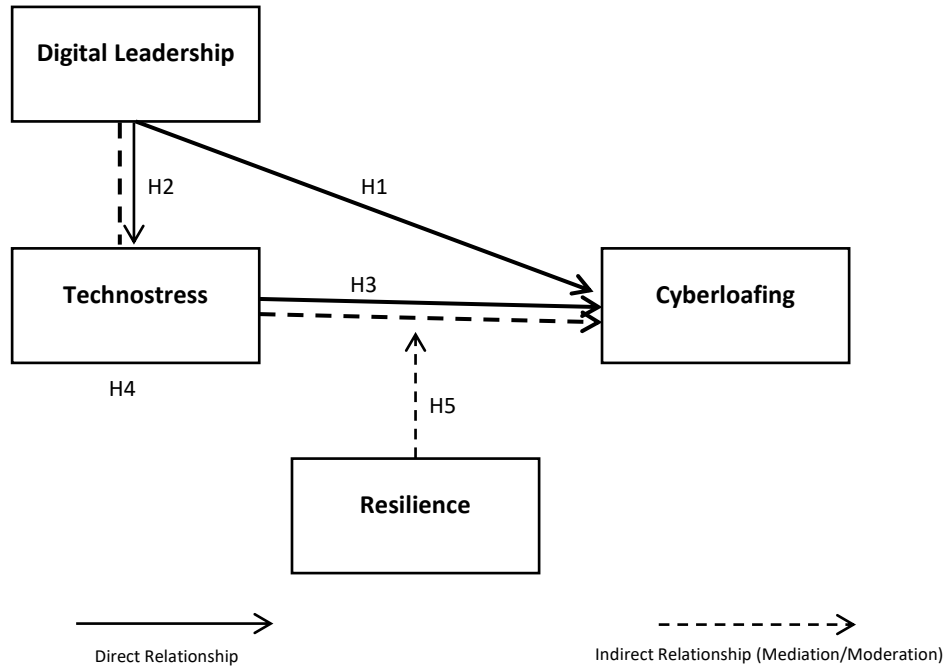
In digital work environments, technostress arises when employees struggle to cope with the demands of continuous connectivity, rapid technological updates, and complex digital systems (Tarafdar et al., 2007). However, the extent to which technostress translates into negative behavioral outcomes such as cyberloafing is not uniform across individuals (Ragu-Nathan et al., 2008). Employees with higher levels of resilience are generally better equipped to regulate emotional strain and maintain focus on task-related activities, even under intense technological pressure (Roy & Islam, 2026a, 2026b). In contrast, less resilient employees are more likely to feel overwhelmed by technostress and may seek temporary psychological escape through non-work-related online activities, thereby increasing cyberloafing behavior (Koay et al., 2017; Vitak et al., 2011). Accordingly, resilience can be understood as a key personal resource that weakens the positive relationship between technostress and cyberloafing.

From the perspective of Conservation of Resources (COR) Theory, resilience functions as an important psychological resource that enables individuals to conserve and replenish depleted energy in stressful environments (Bhamra et al., 2011; Hobfoll, 1989). COR theory argues that stress occurs when valued resources are threatened, lost, or insufficiently replenished, and individuals are motivated to protect remaining resources through adaptive or defensive strategies (Hobfoll, 1989). Within this framework, technostress represents a resource-draining condition, whereas cyberloafing may emerge as a maladaptive coping response aimed at temporary psychological recovery (Luthans et al., 2006). However, resilient

employees possess greater resource reservoirs and stronger recovery capacity, which enables them to buffer the adverse effects of technostress and reduce the likelihood of engaging in cyberloafing. Accordingly, it can be hypothesized that:

*H5: Resilience moderates the relationship between technostress and cyberloafing.*

The research model is shown in Figure 1.



**Fig. 1: Conceptual model**

### 3. Methods

#### 3.1. Participants and Procedures

This study used a quantitative research design to examine the relationships among the key variables. Data were collected from full-time faculty members working at several private universities in Bangladesh, including institutions in Dhaka, Khulna, and Chittagong. The sample included professors, associate professors, assistant professors, senior lecturers, and lecturers. The questionnaires were distributed in person by the research team, and respondents were asked to complete them within a day. To reduce the risk of common method bias, the data were gathered in two stages, following the approach suggested by Podsakoff et al. (2012). In the first stage (Time 1), participants provided demographic information and responded to items measuring digital leadership. Out of 600 distributed questionnaires, 361 usable responses were collected, giving a response rate of 60.1%. Two weeks later, the second stage (Time 2) was carried out with the same participants to collect data on technostress, cyberloafing, and resilience. At this point, 340 questionnaires were returned. Each survey was coded so responses from both waves could be accurately matched. After screening the data, 28 responses were removed because of missing or incomplete information. Then, multivariate outliers were checked using Mahalanobis distance at  $p < 0.001$  (Kline, 2011), which led to the exclusion of 9 additional cases.

To further check for common method bias, Harman's single-factor test was applied. The results showed that the largest single factor explained 29.8% of the variance, which is well below the 50% threshold. This suggests that common method bias was not a major concern in this study (Fuller et al., 2016). After all screening steps, the final sample consisted of 303 valid responses, with an overall response rate of 50.5%.

Participation was entirely voluntary, and confidentiality was assured throughout the process. The data collection effort was also supported by department heads at the participating universities. Regarding demographics, 68.6% of respondents were male. Most participants were between 31 and 35 years old. A large proportion (81.2%) held postgraduate degrees, and 85.1% were married. In terms of experience, most had less than five years of service, and nearly half of the sample (49.1%) were lecturers.

### 3.2. Measures

All constructs in this study were assessed using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The measurement items for each construct are provided in Appendix Table A1.

*Digital leadership* was measured using a six-item scale developed by Zeike et al. (2019). A sample item includes: “My leader is a digital expert.” The scale showed strong internal consistency, with a Cronbach’s alpha of 0.882. *Technostress* was assessed using a four-item scale adapted from Maier et al. (2015). A representative item is: “I am forced to change my habits to adapt to new developments in technology.” The reliability of this scale was high, with a Cronbach’s alpha of 0.898.

*Cyberloafing* was measured using an eight-item scale developed by Lim (2002). One example item is: “I visit sports-related websites to take a break from work tasks.” This scale also demonstrated strong reliability, with a Cronbach’s alpha of 0.897. *Resilience* was operationalized using a five-item scale adopted from Al-Hawari et al. (2020). A sample item is: “I feel I can handle many things at a time in my job.” The scale exhibited satisfactory reliability, with a Cronbach’s alpha of 0.863.

In line with prior empirical studies (Roy et al., 2024), several demographic variables were included as controls including, marital status, designation, work experience, and education level.

## 4. Results

### 4.1. Measurement Model Assessment

Confirmatory Factor Analysis (CFA) was employed to evaluate the extent to which the proposed measurement model fits the observed data. Consistent with the recommendations of Hair et al. (2011), Hu and Bentler (1999), Henseler et al. (2015), and Kline (2011), multiple model fit indices were examined, including the Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR). A model is generally considered acceptable when the CFI and TLI values exceed 0.90 and the RMSEA and SRMR values remain below 0.08.

The CFA findings presented in Table 1 indicate that the proposed four-factor model demonstrates a good fit with the data ( $\chi^2/df = 1.325 < 5$ , TLI = 0.976, CFI = 0.979, RMSEA = 0.033, SRMR = 0.040). All items showed factor loadings above the minimum acceptable level of 0.50 (Hair et al., 2011). Although factor loadings higher than 0.70 are generally recommended (Vinzi et al., 2009), lower loadings are often observed in social science research. In such cases, items should not be removed automatically; instead, their removal should be evaluated based on potential improvements in composite reliability, content validity, and convergent validity. Items with loadings between 0.40 and 0.70 should only be considered for deletion if their removal leads to an increase in composite reliability (CR) or Average Variance Extracted (AVE) beyond recommended thresholds (Hair et al., 2016). In the present study, removing any item did not lead to any meaningful improvement in CR or AVE, as the construct values were already above the recommended levels. Therefore, no item was retained.

To further assess discriminant validity, the proposed four-factor model was compared with several alternative models, as reported in Table 1. The results indicate that the hypothesized model provides a better fit to the data than the alternative models, supporting the distinctiveness of the constructs used in this study. Additionally, the CR values ranged from 0.864 to 0.899, exceeding the recommended threshold of 0.70

(Hair et al., 2011). The AVE values ranged from 0.526 to 0.690 (see Table 2), which are higher than the minimum criterion of 0.50 suggested by Fornell and Larcker (1981). Moreover, the Fornell–Larcker criterion was satisfied, as the square root of the AVE for each construct was greater than the correlations among the constructs (see Table 3). These findings confirm adequate discriminant validity.

**Table 1: Confirmatory factor analysis**

Model	$\chi^2$	<i>df</i>	$\chi^2/df$	CFI	TLI	RMSEA	SRMR
Null model	3745.180	253					
One-factor model	2123.315	230	9.232	0.458	0.404	0.165	0.162
Two-factor model	1703.009	229	7.437	0.578	0.534	0.146	0.151
Three-factor model	953.843	227	4.202	0.792	0.768	0.103	0.099
Four-factor model	296.704	224	1.325	0.979	0.976	0.033	0.040

**Note:** CFI = Comparative Fit Index; TLI = Tucker–Lewis index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Squared Residual; DL = Digital Leadership; Four-factor model: Baseline model; Three-factor model: Resilience and Technostress were combined into one factor; Two-factor model: Resilience and Technostress were combined into one factor and DL and Cyberloafing were combined into another factor; One-factor model: All variables combined.

**Table 2: Factor loading, Cronbach's alpha, Composite reliability (CR), and average variance extracted (AVE)**

Construct & Indicator	Loading	Cronbach's alpha	CR	AVE
Digital Leadership	0.670-0.787	0.882	0.883	0.557
Technostress	0.791-0.865	0.898	0.899	0.690
Cyberloafing	0.644-0.789	0.897	0.898	0.526
Resilience	0.715-0.798	0.863	0.864	0.559

**Note(s):** DL = Digital leadership; CR = Composite reliability; and AVE = Average variance extracted.

**Table 3: Descriptive statistics, correlations, and discriminant validity**

Variables	Mean	SD	DL	Technostress	Cyberloafing	Resilience
DL	3.7827	.80835	<b><u>0.746</u></b>			
Technostress	3.1675	1.07606	.160**	<b><u>0.830</u></b>		
Cyberloafing	3.7450	.80076	.253**	.382**	<b><u>0.725</u></b>	
Resilience	1.6337	.67974	-.046	-.269**	-.375**	<b><u>0.748</u></b>

**Note:** N = 303. Underlined and bold elements on the diagonal are the square root of AVE. Values below the diagonal elements are the correlations between constructs. SD = Standard Deviation; DL = Digital leadership.

## 4.2. Hypothesis Testing

The hypotheses were examined using structural equation modeling with 5,000 bootstrap samples. The results presented in Table 5 and Figure 2 show that DL has a significant positive effect on cyberloafing ( $\beta = 0.186$ ,  $SE = 0.054$ ,  $p < 0.01$ ) and technostress ( $\beta = 0.266$ ,  $SE = 0.088$ ,  $p < 0.01$ ). Furthermore, technostress was found to significantly influence cyberloafing ( $\beta = 0.112$ ,  $SE = 0.044$ ,  $p < 0.05$ ). These results support Hypotheses H1–H3.

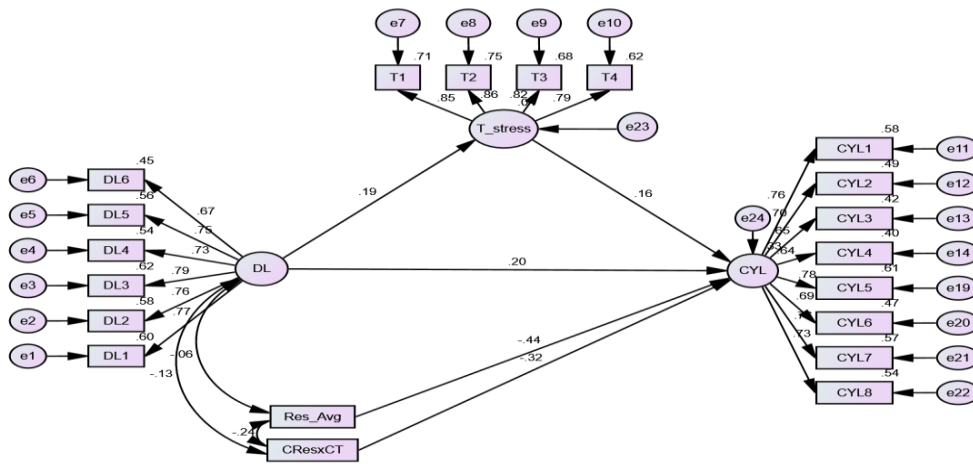
To test the mediating role of technostress, the indirect relationship between DL and cyberloafing was examined. The indirect effect was calculated by multiplying the path coefficient between DL and technostress ( $\beta = 0.266^{**}$ ) with the path coefficient between technostress and cyberloafing ( $\beta = 0.112^{*}$ ), resulting in a significant indirect effect ( $\beta = 0.030$ ,  $p < 0.05$ ). The confidence interval for this indirect effect did not include zero (LL = 0.005 UL = 0.074), indicating the presence of mediation. Therefore, Hypothesis H4 was supported.

The moderating role of resilience was also investigated by including an interaction term (technostress  $\times$  resilience) in the model to determine whether resilience influences the relationship between technostress and cyberloafing. The results revealed a significant negative interaction effect ( $\beta = -0.342$ ,  $p < 0.01$ , LL = -0.466, UL = -0.225), confirming the presence of moderation.

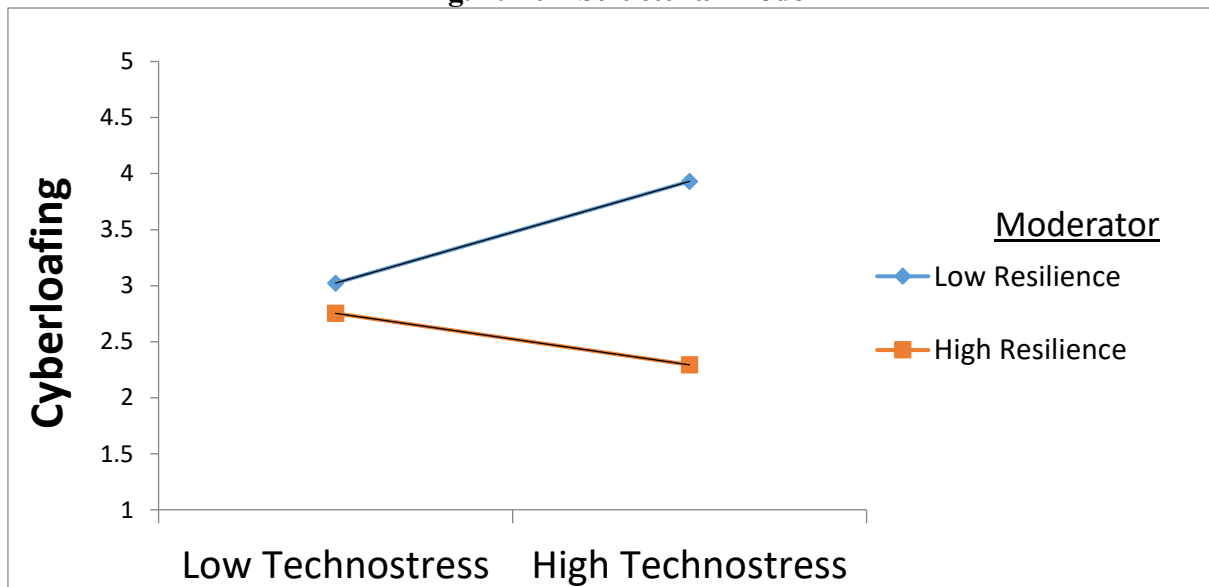
**Table 4: Results of hypothesis testing**

Variables	$\beta$	SE	CR	Bootstraps at 95%	
				LL CI	UL CI
DL -> Cyberloafing	0.186**	0.054	3.435	0.079	0.319
DL-> Technostress	0.266**	0.088	3.028	0.088	0.467
Technostress-> Cyberloafing	0.112*	0.044	2.585	0.018	0.204
Indirect effect					
DL-> Technostress -> Cyberloafing	0.030*	0.014	2.142	0.005	0.074
Moderation analysis					
Technostress	0.112*	0.044	2.585	0.018	0.204
Resilience	-0.477**	0.066	-7.194	-0.626	-0.357
Technostress*Resilience -> Cyberloafing	-0.342**	0.064	-5.344	-0.466	-0.225

Note: \*p<0.05, \*\*p<0.01. DL = Digital leadership; SE = Standard error; CR = Critical ratio; BC = Bias-corrected; CI = Confidence interval.



**Fig. 2: Full Structural Model**



**Fig. 3. Slope of moderation**

A simple slope analysis (Figure 3) further clarifies the interaction pattern. When resilience is low, the relationship between technostress and cyberloafing is positive and stronger, indicating that employees experiencing higher levels of technostress are more likely to engage in cyberloafing behaviors. In contrast, when resilience is high, the relationship becomes weaker and negative. The interaction plot shows that resilience buffers the adverse effect of technostress on cyberloafing. Specifically, individuals with low resilience demonstrate a substantial increase in cyberloafing as technostress rises, whereas those with high resilience exhibit lower levels of cyberloafing even under high technostress conditions. This pattern supports the moderating role of resilience, indicating that variations in resilience alter how technostress relates to cyberloafing, thereby supporting H5.

## 5. Discussion

This study examined how digital leadership influences cyberloafing by exploring the mediating role of technostress and the moderating role of resilience. Drawing on Conservation of Resources (COR) Theory (Hobfoll, 1989), it was argued that digital leadership practices may function as contextual stressors that trigger resource depletion, ultimately increasing employees' psychological strain and cyberloafing tendencies. The findings show that digital leadership significantly increases technostress and indirectly contributes to cyberloafing behavior among employees. In addition, technostress was found to have a positive effect on cyberloafing and to partially mediate the relationship between digital leadership and cyberloafing. Finally, the results indicate that resilience moderates the technostress–cyberloafing relationship, such that the positive association between technostress and cyberloafing is stronger when employee resilience is low and weaker when resilience is high. Overall, these results provide several important theoretical and practical implications.

### 5.1. Theoretical contributions

This study offers several contributions to the literature on the dark side of digital leadership, cyberloafing, technostress, and resilience. First, the findings support Hypothesis 1 by demonstrating that digital leadership positively influences cyberloafing behavior among employees. Although prior studies have primarily emphasized the positive outcomes of digital leadership, such as enhanced innovation, employee engagement, flexibility, and organizational adaptability (Chatterjee et al., 2023; Zeike et al., 2019; Zhu et al., 2022), limited attention has been given to its potential negative behavioral consequences. Existing studies have suggested that excessive digital connectivity, virtual monitoring, and technology-driven work demands may create psychological strain among employees (Ferhani & Isseki, 2025; Lettner et al., 2023). The present study advances the existing literature by empirically demonstrating that digital leadership may also contribute to counterproductive workplace behaviors such as cyberloafing. In doing so, this study extends the emerging “dark side” perspective of digital leadership by showing that technologically intensive leadership practices may unintentionally encourage employees to disengage from work through non-work-related online activities.

Second, the findings support Hypothesis 2, indicating that digital leadership significantly increases technostress among employees. Previous literature has argued that digitally driven leadership practices often require employees to remain continuously connected, rapidly adapt to technological systems, and manage multiple digital platforms simultaneously (Larjovuori et al., 2016; Noor et al., 2025; Westerman et al., 2014). Studies by Tarafdar et al. (2007) and Ayyagari et al. (2011) further suggested that excessive technological demands create cognitive overload and emotional exhaustion, ultimately generating technostress. Consistent with these arguments, the present findings confirm that digital leadership can function as a stress-inducing organizational condition when employees lack sufficient recovery opportunities or technological coping resources. This study contributes to the literature by positioning

digital leadership as an important antecedent of technostress, thereby broadening the understanding of how leadership behaviors shape employees' psychological experiences in digitally intensive workplaces.

Third, the findings support Hypothesis 3 by revealing that technostress positively affects cyberloafing behavior. Prior studies have shown that employees experiencing technological overload, complexity, and digital fatigue often seek temporary relief through non-work-related internet activities (Baturay & Toker, 2015; Koay et al., 2017). Similarly, Lim (2002) and Vitak et al. (2011) argued that cyberloafing may serve as a short-term coping mechanism that enables employees to psychologically detach from stressful work conditions. The current study reinforces these earlier findings by empirically confirming that technostress significantly contributes to cyberloafing in digitally demanding work environments. More importantly, this study advances the literature by explaining cyberloafing not merely as deviant behavior but also as a stress-response mechanism associated with technological resource depletion. Thus, the findings enrich the behavioral consequences literature of technostress within modern digital workplaces.

Fourth, the findings support Hypothesis 4 by demonstrating the mediating role of technostress in the relationship between digital leadership and cyberloafing. While earlier studies separately examined the influence of digital work environments on technostress (Tarafdar et al., 2007) and the relationship between stress and cyberloafing (Koay et al., 2017), limited research has integrated these variables into a single explanatory framework. The present study addresses this gap by revealing that digital leadership indirectly increases cyberloafing through heightened technostress. This finding extends Conservation of Resources Theory (Hobfoll, 1989) by illustrating how technologically demanding leadership practices deplete employees' cognitive and emotional resources, which subsequently encourages cyberloafing as a coping strategy to restore psychological energy. Therefore, this study provides a more comprehensive explanation of the psychological mechanism underlying the relationship between digital leadership and employee behavioral outcomes.

Finally, the findings support Hypothesis 5 by confirming that resilience moderates the relationship between technostress and cyberloafing. Specifically, the positive relationship between technostress and cyberloafing becomes weaker when employees possess higher levels of resilience. Prior studies have emphasized that resilient employees are better able to regulate stress, adapt to challenging environments, and maintain psychological functioning under pressure (Fletcher & Sarkar, 2013; Luthans et al., 2006). Existing literature also suggested that resilient individuals possess stronger coping capacities that reduce the negative effects of workplace stressors (Bhamra et al., 2011). Consistent with these arguments, the present findings demonstrate that resilience acts as an important personal resource that buffers the adverse behavioral consequences of technostress. This study advances the literature by integrating resilience into the digital leadership–technostress–cyberloafing framework and highlighting its protective role within digitally stressful work environments. In doing so, the study contributes to COR theory by demonstrating how personal psychological resources can weaken the resource depletion process that leads to cyberloafing behavior.

Overall, this study contributes to the growing literature on the unintended consequences of digital transformation by demonstrating that digital leadership may simultaneously generate both organizational benefits and employee-related challenges. By integrating digital leadership, technostress, cyberloafing, and resilience within a single moderated mediation framework grounded in Conservation of Resources Theory, the study offers a more comprehensive understanding of how technologically intensive leadership practices influence employee behavior in modern workplaces. Furthermore, the findings extend the emerging “dark side” perspective of digital leadership by emphasizing the importance of psychological resource depletion and recovery processes in explaining employees' behavioral responses to digitally demanding work environments.

## 5.2. Practical Implications

The findings of this study offer several practical implications for university administrators and organizational leaders seeking to reduce cyberloafing and create healthier work environments.

First, the results demonstrate that digital leadership significantly increases cyberloafing behavior among employees. This finding highlights that excessive reliance on digital communication, constant virtual supervision, and continuous online expectations may unintentionally encourage employees to disengage from work through non-work-related internet activities. Organizations should therefore adopt more balanced digital leadership practices that promote flexibility without creating excessive digital pressure. For example, managers can establish clear boundaries regarding after-hours communication, reduce unnecessary virtual meetings, and avoid excessive digital monitoring systems that may increase employee frustration and disengagement. Leaders should also encourage healthier digital work routines by allowing employees adequate mental breaks during intensive online work periods.

Second, the findings reveal that digital leadership positively affects technostress. This highlights the importance of managing employees' technological workload and digital adaptation demands more carefully. Organizations should provide sufficient technological support, regular digital skills training, and user-friendly technological systems to reduce employees' feelings of overload and complexity. For instance, universities and organizations can arrange periodic workshops on new digital platforms, provide technical assistance teams, and introduce technologies gradually rather than forcing employees to adapt to multiple systems simultaneously. Additionally, leaders should recognize that not all employees possess the same level of digital competence, and therefore supportive leadership and continuous guidance are essential for minimizing technology-related stress.

Third, the study found that technostress significantly increases cyberloafing behavior. This suggests that employees may use cyberloafing as a coping mechanism to recover from digital exhaustion and cognitive overload. Organizations should therefore focus on reducing workplace technostress rather than solely punishing cyberloafing behavior. For example, institutions can redesign workloads, minimize unnecessary digital interruptions, and create psychologically supportive work environments that reduce mental fatigue. Managers can also introduce short recovery periods, flexible work arrangements, or wellness initiatives that help employees restore cognitive energy in healthier ways instead of relying on non-work-related online activities during work hours.

Fourth, the mediating effect of technostress indicates that digital leadership indirectly contributes to cyberloafing through employees' psychological strain associated with technology use. This highlights the importance of addressing technostress as a central mechanism within digitally intensive workplaces. Organizations should not assume that digital transformation automatically improves employee productivity; instead, they must simultaneously develop strategies that protect employees from excessive technological pressure. For example, leaders should regularly assess employees' digital stress levels through surveys or feedback systems and implement interventions such as workload balancing, digital detox programs, or employee assistance initiatives to prevent resource depletion caused by continuous technological demands. Finally, the moderating role of resilience demonstrates that resilient employees are better able to cope with technostress and are less likely to engage in cyberloafing behavior under stressful digital conditions. This finding highlights the importance of strengthening employees' psychological resources alongside technological adaptation. Organizations should therefore invest in resilience-building initiatives such as stress management training, emotional intelligence development programs, mindfulness workshops, mentoring systems, and counseling support services. For example, universities may introduce resilience development sessions for faculty and staff to help them manage digital work pressure more effectively. Leaders should also foster supportive organizational cultures that encourage open communication, psychological safety, and social support, as these factors can strengthen employees' ability to adapt to stressful technological environments.

At the national and policy level, the findings suggest that policymakers and educational authorities should develop broader guidelines for healthy digital workplace practices. Government agencies and labor policymakers can formulate policies regarding digital work-life balance, reasonable online availability expectations, and employee psychological well-being in digitally transformed workplaces. National training initiatives may also be introduced to improve employees' digital literacy and resilience capabilities across industries. Furthermore, higher education regulators and organizational policymakers should encourage institutions to establish formal frameworks for managing technostress, protecting employees from excessive digital demands, and promoting sustainable digital transformation practices that prioritize both technological efficiency and employee well-being.

## 6. Limitations and Future Research

Like any empirical study, this research has several limitations that should be acknowledged, which in turn open useful directions for future work. First, although a time-lagged survey design was employed, the study still does not fully establish causal relationships among the variables. The multi-wave data collection helped reduce common method bias and introduced some temporal separation, but the findings remain correlational in nature. Future research would benefit from using longitudinal, diary-based, or experimental designs to better capture dynamic changes in digital leadership, technostress, and cyberloafing over time. Second, this study focused specifically on technostress as the mediating mechanism and resilience as the moderating factor. However, employee behavior in digital environments is shaped by a broader set of psychological and organizational influences. Future studies could extend the present framework by incorporating additional mediators and moderators to build a more comprehensive model of how digital leadership translates into negative workplace outcomes. For instance, variables such as emotional exhaustion, job stress, work engagement, psychological detachment, digital fatigue, organizational cynicism, and perceived organizational support may further clarify the underlying mechanisms. Likewise, boundary conditions such as emotional intelligence, mindfulness, organizational support, and digital competency may help explain when technostress is more or less likely to lead to cyberloafing. Third, the study was conducted within a specific occupational and cultural context, which may limit the generalizability of the findings. As a result, future research should replicate this model across different industries, job types, and cultural settings to examine whether the observed relationships hold in more diverse contexts. Finally, despite implementing procedural remedies to minimize common method bias, the study relied on self-reported data, which may still introduce response-related biases such as social desirability or perceptual inflation. Future studies could address this limitation by collecting data from multiple sources, such as supervisors or organizational records, to enhance objectivity. In addition, qualitative or mixed-method approaches could provide deeper insights into how employees experience digital leadership and technostress in real workplace settings.

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**Appendix**  
**Table A1: The Measurement Scales**

Construct	Items	Statement	Sources
Digital Leadership (DL)	DL1	My leader think using digital tools is fun;	Zeike et al. (2019)
	DL2	My leader is a digital expert;	
	DL3	When it comes to digital knowledge, my leader is always up to date;	
	DL4	My leader driving the digital transformation forward proactively in our unit;	
	DL5	my leader can make others enthusiastic about the digital transformation;	
	DL6	my leader have a clear idea of the structures and processes that are needed for the digital transformation.	
Technostress (T)	T1	I am forced to change my habits to adapt to new developments in technology.	Maier et al. (2015)
	T2	I have to sacrifice personal time to keep up with new technology updates.	
	T3	I feel that technological features invade my personal life.	
	T4	I feel threatened by people with more advanced technology skills.	
Cyberloafing (CYL)	CYL1	I visit sports-related websites to take a break from work tasks.	Lim (2002)
	CYL2	I explore investment-related websites to distract myself from work-related responsibilities.	
	CYL3	I engage with entertainment-related websites to have a short break from work.	
	CYL4	I read general news sites as a means of escaping work-related stress.	
	CYL5	I access non-job-related websites to take a break from work-related tasks.	
	CYL6	I occasionally download non-work-related information to ease my workday.	
	CYL7	I shop online for personal goods to briefly escape from work-related pressures.	
	CYL8	I occasionally visit adult-oriented (sexually explicit) websites to take a break from work tasks.	
Resilience (Res)	Res1	I usually manage difficulties one way or another at work.	Al-Hawari et al. (2020)
	Res2	I can be “on my own,” so to speak, at work if I have to.	
	Res3	I usually take stressful things at work in my stride.	
	Res4	I can get through difficult times at work because I have experienced difficulties before.	
	Res5	I feel I can handle many things at a time in my job.	