

## Digital Stress and Performance: The Role of Supervisor Support and Technology

Janu Nugraha Ramadhan\*

*\*Faculty of Psychology, Universitas Tarumanegara, Jakarta, Indonesia*

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**Abstract.** The technological revolution has brought consistent changes to the modern workplace, including potential dangers such as information overload and stress from the use of Information, Communication, and Technology (ICT) in both workplace and corporate contexts. Previous research has shown that constant connectivity, frequent digital notifications, and the need to quickly process large amounts of information can lead to stress and burnout. Information overload is a commonly studied phenomenon, often associated with reduced productivity, mental fatigue, and diminished decision-making quality. This study aimed to examine the influence of digital stress on employee performance, with supervisor support and technology self-efficacy as moderating variables, at Company X. A non-experimental quantitative research design was employed, involving 542 employees. Data were collected via Google Forms and analyzed using the moderated regression analysis (MRA). The results indicated that digital stress has a negative effect on employee performance. Technology self-efficacy was found to moderate the relationship between digital stress and employee performance, whereas supervisor support was not proven to moderate the relationship. The coefficient of determination ( $R^2$ ) was relatively small at 3.3%. It is therefore suggested that future research explore intermediary variables in the relationship between digital stress and performance.

**Keywords:** digital stress; employee performance; supervisory support; technology self-efficacy

The technological revolution has brought significant and consistent changes to the modern workplace. Today's work environment demands that employees assume greater responsibility in an increasingly competitive business landscape (Ahrens, 2016). This high level of job pressure has led to increased stress in the workplace. According to the American Psychological Association (APA), work stress is a common phenomenon among employees. In 2012, the APA reported that two out of five employees experienced stress due to factors such as low wages, limited growth opportunities, high job demands, disharmonious working relationships, and an unfavorable work environment (American Psychological Association, 2012). Work stress can have a negative impact on individuals and organizations, e.g., decreased productivity, health problems, increased absenteeism, low employee morale, and increased interpersonal conflict (Colligan & Higgins, 2006). In addition, the use of technology in the workplace

\*Address for correspondence: janunr23@gmail.com



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can increase stress due to information overload. The burden of data and the demands of adapting to digital systems can pose challenges for employees and organizations.

The shift in business processes due to the adoption of digital technology has become the new norm in modern industry (Sneader & Singhal, 2020). This trend has been accelerated by the COVID-19 pandemic, which has prompted companies to integrate technology into various aspects of their operations (Craven et al., 2020). Digitalization offers significant benefits, such as operational cost efficiency and increased work productivity with more structured processes (Dos Santos & Sussman, 2000). However, technological advances also have negative impacts. Various studies have shown that technology can trigger new challenges for individuals and organizations (Qiu, 2013). Employees often face pressure to adapt to technological changes, which can trigger negative reactions to digital innovation (Tarafdar et al., 2007).

Since 2020, Company X has implemented digital transformation in its operations, including document digitization. Previously, employees used a paper-based system for data input. Along with this change, all employees were required to adapt to the digital system to enhance the company's efficiency and business development. Although digitization offers various benefits, the adaptation process also presents challenges, including digital stress, which can have a negative impact on employee productivity. Therefore, companies must consider effective mitigation strategies to help employees cope with technological changes without causing excessive pressure.

Research has shown that digital stress affects various work-related aspects, including health, turnover, productivity, and job satisfaction (Barber & Santuzzi, 2015; Boyer-Davis, 2019; Tarafdar & Qrunfleh, 2016; Tarafdar et al., 2007). According to a 2010 study by the American Psychological Association, workplace stress leads to decreased productivity, increased absenteeism, and employee turnover. Thus, one can conclude that digital stress has a negative impact on employee performance.

Employee performance is the achievement of completing tasks and responsibilities assigned by the company (Mangkunegara, 2016). Two main factors influence performance: psychological factors and organizational factors (Gibson et al., 2012). Psychological factors include perceptions, attitudes, personality, and motivation, all of which can affect the quantity and quality of employee performance. These psychological factors can boost employee morale and positively impact the achievement of company goals (Karyono & Prastiwi, 2018). Organizational factors also play an important role in individual performance because they are related to the reciprocal relationships between sub-units within the organization. These factors include work climate, communication patterns, harmonious working relationships, and leadership styles (Gibson et al., 2012).

Technology use causes stress for some users, a state initially known as "technostress." This term later became known as "digital stress." Digital stress is defined as the negative effects on human attitudes, thoughts, behavior, and mental health caused directly or indirectly by technology use (Shu et al., 2011). Individuals who cannot cope with technological demands will experience digital stress (Tarafdar et al., 2007). Several researchers have reviewed this situation and found that the stress experienced by individuals is caused by the use of internal and smart devices (Steele et al., 2019).

On the other hand, psychological factors, such as technology self-efficacy, play an important role in

the relationship between technostress and burnout (Yener et al., 2021). Technology self-efficacy refers to a person's confidence in their ability to use technology (Holden & Rada, 2011). This belief influences the choice of business activities and persistence in those activities (Bandura, 1986). Therefore, an individual's self-assessment ability has a significant effect on the level of stress experienced. Research by Holden and Rada (2011) distinguished technology self-efficacy and computer self-efficacy. Computer self-efficacy is associated with an individual's belief in their ability to successfully perform computer-related tasks. Meanwhile, technology self-efficacy refers to one's ability to use various technologies, including the internet, electronic communication media, and other technological media, in performing their routines.

Digital office tools have become a resource to help employees lighten their workload, thereby increasing productivity. However, technology can also be an obstacle at work because it often causes unpredictable disruptions, leading to technostress for users. A study by Chen and Muthitacharoen (2018) found that technostress can lead to a decline in the performance of employees working with technology.

To address this situation, support from superiors is essential. Supervisory support is defined as the actions that supervisors take to appreciate each employee's contribution and care for their welfare (Horan et al., 2018). According to Ng et al. (2016), employee motivation to work innovatively will increase if employees' efforts are fairly appreciated. In this case, supervisors play a major role in providing social support to employees because they can offer rewards, protection, and motivation (Charoensukmongkol & Phungsoonthorn, 2020). In addition, supervisors play a role in alleviating employees' concerns about the uncertainty of the information received.

Therefore, support from superiors is expected to reduce work-related stress among employees and increase their self-esteem, which in turn will improve performance (Guchait et al., 2014). With that in mind, it is expected that a high level of support from superiors will reduce the effects of technostress or digital stress on employee performance.

The phenomenon of digital stress exists at Company X, a non-bank microfinance institution (LKMBB) that provides capital to micro, small, and medium enterprises and cooperatives (MSMEs) and empowers underprivileged communities. Company X is located in North Sumatra, with its main branch in Medan City and 120 units spread across all sub-districts in the province. Company X was chosen as a case study because of the phenomenon of digital stress occurring there, supported by a preliminary survey of its employees. The survey showed that finance administration officers (FAOs) and account officers (AOs) experienced digital stress, with 54 employees in the low category, 320 employees in the medium category, and 70 employees in the high category. Company X employees were predominantly millennials who initially worked using conventional methods. However, due to technological demands, the company's work system shifted from conventional to digital. As work began to involve technology, specifically smartphones, obstacles arose, including limited phone units in the office, the use of personal phones that were not always suitable, and systems that were difficult to understand. Additionally, inadequate network connectivity and system downtime for employees in areas with poor signal coverage hindered work. Slow system verification forced employees to stay at the office longer, sometimes until late at night.

Because of increasingly demanding work requirements and conditions, especially the many obstacles posed by digitization in the workplace, technological skills have become very important at Company X. Although computer skills are required during the initial recruitment process, there are still many obstacles in implementing new systems that depend on the skills of each employee.

Given the current work phenomenon at Company X, research on the effect of digital stress on performance as a result of technological development is particularly important. In this study, supervisor support (an external factor) and technology self-efficacy (an internal factor) are considered moderators. These two factors are important because they can cause digital stress among employees. The inclusion of these two factors is the novelty offered by the present study. The study linked digital stress, performance, supervisor support, and technology self-efficacy as variables that structurally influence each other.

In addition, by holding sharing sessions, Company X was working to address digitization-related issues that employees experienced. Company X used these sessions to resolve problems that employees experienced, such as issues with application systems or other matters related to job descriptions. The sessions were expected to provide employees with support and assistance in resolving such issues, thereby improving performance.

Previous research indicates that digitization has a significant effect on employee performance. Pertiwi and Nurhikmah (2018) found that digitization contributes greatly to performance improvement. These findings align with other studies showing that digital stress can reduce performance, especially when employees must adapt to increasingly complex technological demands (Brilianti et al., 2023). Research by Issalillah and Wahyuni (2021) also found that the relationship between digital stress and performance is negative and strong.

However, most of these studies were conducted in fields of work that differ from Company X's operational context. In addition, studies that simultaneously examine the roles of the two moderating factors—technology self-efficacy and supervisory support—are still limited and are generally analyzed separately. This condition indicates a research gap, particularly in the non-bank microfinance sector in Indonesia, which is undergoing rapid digital transformation.

This study helps bridge this gap by examining the effect of digital stress on employee performance and analyzing two moderating factors in a single model. This approach was expected to provide a more comprehensive understanding of how employees respond to digital demands, as well as inform policy and management practices in industrial and organizational psychology.

This study aimed to complement previous findings regarding the effect of digital stress on employee performance. To date, several studies have shown that digital stress is associated with decreased performance, especially when technological demands exceed employees' adaptive abilities (Tarafdar & Qrunfleh, 2016). However, studies on the effects of digital stress in Indonesia are still limited, especially in the non-bank microfinance sector, such as that of Company X, which was undergoing an intensive digitalization.

Therefore, the focus of this study was to fill this knowledge gap. It is expected that individuals efficient in this domain can minimize the digital stress they experience, so that digitization does not have a negative impact on their performance. Research by Suharti and Susanto (2021), involving

138 respondents from engineering and manufacturing companies, concluded that digital stress has a significant influence on employee performance ( $p < 0.05$ ). Tarafdar and Qrunfleh (2016) also found that digital stress affects the overall performance of sales associates. Based on the explanation presented, the first hypothesis was as follows:

*H1: There is a significant effect of digital stress on employee performance*

Based on previous research, digital stress is known to reduce performance because the high demands of technology make employees more prone to fatigue, decreased concentration, and difficulty completing tasks optimally. This condition arises when the digital systems used become increasingly complex, change frequently, or require repeated adjustments (Tarafdar & Qrunfleh, 2016). In the context of Company X, similar challenges were observed in the transition to a digital system that demands a high level of adaptability.

Considering these findings and the conditions at Company X, it was proposed that the higher the level of digital stress experienced by employees, the lower their performance would be. Therefore, the first hypothesis of this study stated that digital stress affects employee performance.

*H2: Supervisor support serves as a moderator in the relationship between digital stress and employee performance*

The second hypothesis attempted to answer the following research question: How is the moderating effect of supervisor support in the influence of digital stress on the performance of Company X employees? A growing body of literature ("Social support as technostress inhibitor: Even more important during the COVID-19 pandemic?", n.d.) has reported that supervisor support moderates the relationship between job demands and employee stress. In line with this, supervisor support has been found to reduce the negative impact of technology use in the workplace that leads to digital stress (Salanova et al., 2014; "Social support as technostress inhibitor: Even more important during the COVID-19 pandemic?", n.d.).

The conservation of resource (COR) theory provides a theoretical explanation of how and why digital stress negatively impacts employee well-being and performance at work. In line with this theory, social support, including support from superiors, plays an important role in helping individuals reduce the negative effects of digital stress. Salanova et al. (2014) provided interesting insights into how support from superiors predicts the emergence of technostress.

Thus, perceived high supervisor support can improve employee performance (Guchait et al., 2014). Managerial actions have been reported as the most important factor shaping and influencing employee behavior. Supervisor support is expected to reduce work-related stress and increase self-esteem, which in turn will result in better performance (Guchait et al., 2014). Therefore, it is expected that better supervisor support will reduce the effects of technostress or digital stress on employee performance. Thus, the following hypothesis was proposed: Supervisor support plays a moderating role in the relationship between digital stress and performance.

*H3: Technology self-efficacy plays a moderating role in digital stress and performance*

The next hypothesis sought to answer this research question: How is the moderating effect of technology self-efficacy in the influence of digital stress on the performance of employees at Company X? Self-efficacy refers to one's belief in their abilities, which drives success in completing certain tasks or responsibilities (Bandura, 1977). In the context of technology, self-efficacy indicates the extent to which individuals believe in their ability to use technology to complete desired tasks (Gelbrich & Sattler, 2014). In the main job demand-resources (JD-R) model, job factors are classified into job demands and job resources. High technological burden is classified as a job demand. Meanwhile, technology self-efficacy can be seen as a resource that helps employees perform technology-related tasks. Job resources can reduce the impact of job demands on stressful conditions. Thus, technology self-efficacy will reduce the negative impact of stress on technology use.

An increase in technology self-efficacy will have a positive impact on situations involving technostress, leading individuals to strive to be more diligent and persistent in mastering technology. Self-efficacy is considered to be similar to the theory of planned behavior control proposed by Ajzen (1991): When self-efficacy is higher, controlled behavior is more pronounced, making it feel easier to perform tasks. Similarly, self-efficacy serves as a buffer against the impact of technostress. Workers with higher technology self-efficacy are more likely to perform well. Therefore, the negative impact of technostress on performance will weaken as technology self-efficacy increases. This is evidenced in a study by Delpechitre et al. (2019), which concluded that higher technology self-efficacy among salespeople can reduce technostress levels and improve performance. Therefore, our third hypothesis was:

*H3: Technology self-efficacy plays a moderating role in the relationship between digital stress and performance*

## Method

This study used a quantitative research method. It employed research instruments to collect data, and the analysis was quantitative or statistical, with the aim of testing predetermined hypotheses. The quantitative approach describes data numerically to develop mathematical models, theories, and hypotheses related to the phenomena under investigation. The advantage of quantitative research is that the data presented is more reliable and is commonly intended to be generalized to a larger population. Quantitative analysis also allows researchers to test specific hypotheses or theories, unlike qualitative research, which is more exploratory in nature (Sugiyono, 2018). This research aimed to examine the relationship between independent and dependent variables.

### *Participants*

The research population consisted of permanent employees of Company X, both male and female, with positions ranging from operators/staff to managers. The age criterion was 18 to 35 years old, with a minimum employment period of three months. This was because data from preliminary studies on the digital stress phenomenon showed that employees experiencing digital stress were generally those

with more than three months of employment. The sampling technique used was purposive sampling, tailored to the requirements and conditions of the characteristics specified in this study.

#### *Measurement*

The study's digital stress scale was adapted from Fischer et al. (2021), which consists of 10 aspects: complexity, conflict, insecurity, invasion (of privacy), overload, security, social environment, technical support, usability, and unreliability. Each aspect comprises five questions. This scale is measured on a Likert scale, with response options ranging from 1 (strongly disagree) to 7 (strongly agree). Each aspect has satisfactory reliability, based on the Cronbach's alpha: complexity ( $\alpha=0.89$ ), conflict ( $\alpha=0.94$ ), insecurity ( $\alpha=0.89$ ), invasion of privacy ( $\alpha=0.92$ ), overload ( $\alpha=0.87$ ), security ( $\alpha=0.91$ ), social environment ( $\alpha=0.81$ ), technical support ( $\alpha=0.91$ ), usefulness ( $\alpha=0.88$ ), and unreliability ( $\alpha=0.90$ ).

Technology self-efficacy was measured using the Online Technology Self-Efficacy Scale (OTSES) developed by Miltiadou and Yu (2000). There is a total of 29 items with favorable statements. OTSES comprises a nine-item internet competencies subscale, a four-item chatting "live" via synchronous chat subscale, a nine-item using an email subscale, and a seven-item posting message to a newsgroup subscale. OTSES uses a Likert scale with four response options. Its Cronbach's alpha coefficient is 0.95.

Supervisor support is measured using the scale developed by Cole et al. (2006), which has four aspects. This scale is assessed using the Likert scale, with response alternatives ranging from 1 (strongly disagree) to 5 (strongly agree). The supervisor support instrument from Cole et al. (2006) has a Cronbach's alpha reliability coefficient of 0.958.

Performance was measured using the Koopmans' instrument, which consists of four dimensions: task performance, contextual performance, adaptive performance, and counterproductive work behavior. The measurement instrument has a Cronbach's alpha reliability coefficient value of  $\alpha=0.97$ .

#### *Research Procedure*

This research was conducted among employees of Company X in the Sumatra region, with data collection taking place from May 2 to 7, 2023. Data collection was conducted online. The research sample consisted of 542 Company X employees, selected using non-probability sampling methods in accordance with predetermined criteria. The characteristics of the research respondents were as follows: The majority were female (94.1%), the highest level of education was high school/vocational school (74.5%), aged 21–30 years old at the time of the study, most participants were contract employees (92.8%), over half had more than one year of work experience (59%), and the most common position was account officer (58.1%). The characteristics of the study participants are shown in Table 1.

#### *Data Processing and Analysis Techniques*

This study employed a quantitative analysis technique, namely multiple linear regression. The study included two moderators, so moderator regression analysis (MRA) was used in data analysis. Classical regression assumption tests were also conducted before multiple linear regression, including tests for normality, multicollinearity, heteroscedasticity, and linearity.

**Table 1**

*Participant Overview (N = 542)*

Demographics	N	Percentage (%)
<b>Gender</b>		
Male	32	5.9
Female	510	94.1
<b>Last Education</b>		
High School / Vocational	404	74.5
Diploma	28	5.2
Bachelor's (S1)	109	20.1
Master's (S2)	1	0.2
<b>Age</b>		
<21 Years	87	16.1
21–30 Years	432	79.7
31–40 Years	17	3.1
>41 Years	6	1.1
<b>Marital Status</b>		
Single	470	86.7
Married	72	13.3
<b>Employment Status</b>		
Permanent	39	7.2
Contract	503	92.8
<b>Tenure</b>		
<6 Months	115	21.2
6–12 Months	107	19.7
>1 Year	320	59.0
<b>Job Level</b>		
Regional Manager	1	0.2
Area Head	6	1.1
Branch Head	36	6.6
Senior Account Officer	41	7.6
Finance Administration	109	20.1
Account Officer	315	58.1
Micro Account Officer	20	3.7
Micro Finance & Admin	14	2.6

## Results

Based on frequency, this study concluded that the three levels of digital stress most commonly experienced by employees at Company X were: too little stress, little stress, and moderate stress. An overview of the stress levels is shown in Table 2.

Hypothesis testing using multiple linear regression shows that the regression coefficient for digital stress (X) is -0.123, indicating that as digital stress decreases, employee performance (Y) increases, and vice versa. Meanwhile, the regression coefficient for the technology self-efficacy variable (M1)

**Table 2**

*Stress Level of Company X Employees (N = 542)*

No.	Score Range	Stress Level	N	Percentage (%)
1	1.00–1.85	No Stress	47	8.7
2	1.86–2.71	Too Little Stress	176	32.5
3	2.72–3.57	Little Stress	136	25.1
4	3.58–4.43	Moderate Stress	97	17.9
5	4.44–5.29	Too Much/Optimum Stress	58	10.7
6	5.30–6.15	Overload	27	5.0
7	6.16–7.00	Burn Out	1	0.2
Total			542	100.0

was 0.114, indicating that if technology self-efficacy decreases, employee performance also decreases, and vice versa. However, supervisor support (M2) was not a significant moderator ( $p=0.688$ ;  $>0.05$ ) of the relationship between the independent and dependent variables. Table 3 shows the results of the multiple regression test.

**Table 3**

*Results of the Multiple Regression Analysis*

Predictor	Unstandardized Coefficients		Standardized Coefficient $\beta$	t	p	Collinearity Statistics	
	B	SE				Tolerance	VIF
(Constant)	3.314	0.188		17.599	.000		
Digital Stress	-0.058	0.020	-0.123	-2.819	.005	0.934	1.071
Online Technology Self-Efficacy	0.126	0.049	0.114	2.560	.011	0.904	1.107
Supervisor Support	0.012	0.029	0.018	0.401	.688	0.912	1.097

*a. Dependent Variable: Task Performance*

Referring to Table 4, technology self-efficacy was found to have a significant moderating effect on the relationship between digital stress and employee performance ( $p=0.007$ ,  $p<0.05$ ;  $t=2.726$ ).

**Table 4**

*Moderated Regression Analysis of Digital Stress  $\times$  Technology Self-Efficacy on Performance*

Predictor	Unstandardized Coefficients		Standardized Coefficient $\beta$	t	p
	B	SE			
(Constant)	3.346	0.170		19.727	< .001
Digital Stress	-0.059	0.020	-0.126	-2.910	.004
Online Technology Self-Efficacy	5.812	0.821	0.081	0.567	.571
Digital Stress $\times$ Technology Self-Efficacy	0.043	0.016	0.118	2.726	.007

*b. Dependent Variable: Y Task Performance*

The study found that supervisor support does not moderate the relationship between digital stress and employee performance ( $p=0.312$ ,  $p>0.05$ ;  $t=1.013$ ). Similarly, the interaction between digital stress and supervisory support is not significant, with  $p=0.312$  ( $p>0.05$ ).

**Table 5**

*Moderated Regression Analysis of Digital Stress x Supervisor Support on Performance*

Predictor	Unstandardized Coefficients		Standardized Coefficient $\beta$	<i>t</i>	<i>p</i>
	<i>B</i>	<i>SE</i>			
(Constant)	3.654	0.134		27.298	< .001
Digital Stress	-0.067	0.020	-0.143	-3.294	.001
Supervisor Support	1.562	0.068	0.032	0.040	.968
Digital Stress x Supervisor Support	0.010	0.009	0.044	1.013	.312

*c. Dependent Variable: Y\_Task Performance*

The correlation coefficient (*R*) test showed that digital stress contributes 3.3% to performance when moderated by technology self-efficacy. This finding indicates that technology self-efficacy plays a moderating role in the relationship between digital stress and performance.

**Table 6**

*Correlation Analysis of Regression Models*

Model	<i>R</i>	<i>R</i> <sup>2</sup>	Adjusted <i>R</i> <sup>2</sup>	<i>SE</i>
Digital Stress → Performance	.140	.020	.018	.549
Digital Stress × Technology Self-Efficacy → Performance	.190	.036	.033	.545
Digital Stress × Supervisor Support → Performance	.157	.025	.021	.548

*Note.* All models include the respective predictors as indicated. *R* = correlation coefficient, *R*<sup>2</sup> = coefficient of determination, *SE* = standard error of the estimate.

## Discussion

The findings indicated that digital stress has a negative impact on the performance of Company X employees. These findings align with previous studies, which stated that high technological demands could reduce the effectiveness and efficiency of individual performance (Runtuwene et al., 2018; Tarafdar & Qrunfleh, 2016). High information load, frequent system changes, and the complexity of the technology to be mastered make employees more prone to fatigue, decreased concentration, and an inability to maintain work quality. In the context of Company X, this phenomenon is evidenced by the fact that 86 employees were categorized as having a high level of digital stress, ranging from overload to burnout, which potentially hindered the achievement of work targets.

In addition to these direct mechanisms, digital stress can affect performance through emotional exhaustion and increased anxiety when dealing with technological demands. Ennis (2018) explained that digital stress can trigger physical symptoms, such as muscle pain and high blood pressure, and can cause emotional responses such as anxiety or depression (Fischer et al., 2021). When anxiety drains employees' psychological energy, their ability to focus on work declines, resulting in a decrease in work performance.

This study also indicated that technology self-efficacy serves as a moderator in the relationship

between digital stress and employee performance. Thus, employees who have greater confidence in their ability to use technology tend to cope better with digital stress. This is consistent with self-efficacy theory (Teo, 2009; Teo & van Schaik, 2012), which holds that individuals' perceptions of their abilities can influence how they handle challenges. Previous studies have also shown that technology self-efficacy can reduce the impact of digital stress by making individuals feel more capable of managing technology-based tasks (Delpechitre et al., 2019; Salanova et al., 2014; Shu et al., 2011). However, the model's determination value ( $R^2$ ) of only 3.3% indicates that the influence of this variable remains limited, so additional moderating variables are needed to strengthen the model.

Unlike technology self-efficacy, supervisor support did not moderate the relationship between digital stress and performance. This indicates that Company X employees did not yet feel that their supervisors played a significant role in helping them adapt to technological changes. However, previous studies have confirmed that supervisor support can help employees reduce uncertainty and deal with job ambiguity (Blanco-Donoso et al., 2020; Salanova et al., 2014). The insignificance of these findings is also consistent with interview findings, namely the suboptimal pattern of assistance with digital system changes. Another possibility is that supervisor support is more appropriately positioned as a mediator variable rather than a moderator, given that its contribution was not observed in the moderation analysis or direct influence.

These findings imply that companies must develop more structured technology assistance programs, including digital competency training, change management, and system-based workflow simplification. In addition, companies must strengthen the role of supervisors in helping employees cope with digital change so that uncertainty can be mitigated and employees can feel more confident.

#### *Limitations*

First, the non-experimental research design makes it impossible to directly ascertain a causal relationship among the variables involved in the study. Second, the low determination value indicates that other factors—e.g., work engagement, peer support, and job satisfaction—influence employee performance, but the present study did not explore them. Therefore, further research should add mediating or moderating variables to obtain a more comprehensive understanding of the effects of digital stress.

### **Conclusion**

Based on the research findings, it was concluded that digital stress has a negative impact on employee performance at Company X. Employees experiencing a higher level of digital stress will exhibit poorer performance. This finding is consistent with the analysis, which showed that excessive technology pressure, rapid changes in work systems, and increased information overload reduce employees' ability to work effectively.

This study also found that technology self-efficacy serves as a moderator in the relationship between digital stress and performance. Employees with higher confidence in their ability to use technology can better mitigate the negative impact of digital stress on their task performance. This

indicates that improving digital competence and self-confidence is important in the process of technology adaptation.

On the other hand, supervisor support was not found to be a moderator in the relationship between digital stress and employee performance. This result suggested that the role of supervisors in supporting employees in coping with technological changes had not been significantly felt by Company X employees. Such a finding aligns with the phenomenon in the field, indicating minimal support during the digitalization process.

Overall, this study provides an understanding that the success of digital adaptation depends not only on the technology being implemented but also on the psychological readiness of employees. Digital competency training, system simplification, and increased support during the change process are key to preventing digital stress and buffering its impact on performance.

#### *Recommendations*

Companies should pay attention to employees' technology self-efficacy and digital stress to ensure these factors do not affect job performance. It is also recommended that companies offer training on the use of their technology or systems to help employees adapt, thereby supporting improvements in employee performance. In addition, future researchers should explore other variables that moderate the influence of digital stress on employee performance.

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#### *Author Contributions*

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#### *Conflict of Interest*

The author declares that there is no conflict of interest with any party related to the content of this manuscript.

*Declaration of Generative AI in Scientific Writing*

Orcid ID

Janu Nugraha Ramadhan  <https://orcid.org/0009-0000-7464-8254>

## References

- Ahrens, B. L. (2016). *Gratitude and work stress* [Dissertation]. The College of Business Bellevue University.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-t](https://doi.org/10.1016/0749-5978(91)90020-t)
- American Psychological Association. (2012). *Stress in America: Our health at risk* (tech. rep.). <https://www.apa.org/news/press/releases/stress/2011/final-2011.pdf>
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. In Englewood Cliffs, NJ (Vol. 1986). PrenticeHall.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191–215. <https://doi.org/10.1037/0033-295x.84.2.191>
- Barber, L. K., & Santuzzi, A. M. (2015). Please respond ASAP: Workplace telepressure and employee recovery. *Journal of Occupational Health Psychology*, 20(2), 172–189. <https://doi.org/10.1037/a0038278>
- Blanco-Donoso, L. M., Moreno-Jiménez, J., Amutio, A., Gallego-Alberto, L., Moreno-Jiménez, B., & Garrosa, E. (2020). Stressors, job resources, fear of contagion, and secondary traumatic stress among nursing home workers in face of the COVID-19: The case of Spain. *Journal of Applied Gerontology*, 40(3), 244–256. <https://doi.org/10.1177/0733464820964153>
- Boyer-Davis, S. (2019). Technostress: An antecedent of job turnover intention in the accounting profession. *Journal of Business and Accounting*, 13(1), 49–63. [https://asbbs.org/files/2019/JBA\\_Vol12.1.2019.pdf](https://asbbs.org/files/2019/JBA_Vol12.1.2019.pdf)
- Brilianti, D., Zamralita, & Budiarto, Y. (2023). Hubungan antara stres digital dan kinerja pada karyawan [The relationship between digital stress and employee performance]. *Phronesis: Jurnal Ilmiah Psikologi Terapan*, 12(2), 149–161. <https://journal.untar.ac.id/index.php/phronesis/article/view/23715>
- Charoensukmongkol, P., & Phungsoonthorn, T. (2020). The effectiveness of supervisor support in lessening perceived uncertainties and emotional exhaustion of university employees during the COVID-19 crisis: the constraining role of organizational intransigence. *The Journal of General Psychology*, 148(4), 431–450. <https://doi.org/10.1080/00221309.2020.1795613>
- Chen, L., & Muthitacharoen, A. (2018). An empirical investigation of the consequences of technostress: Evidence from China. In *Social issues in the workplace* (pp. 667–690). IGI Global. <https://doi.org/10.4018/978-1-5225-3917-9.ch035>

- Cole, M. S., Bruch, H., & Vogel, B. (2006). Emotion as mediators of the relations between perceived supervisor support and psychological hardiness on employee cynicism. *Journal of Organizational Behavior*, 27(4), 463–484. <https://doi.org/10.1002/job.381>
- Colligan, T. W., & Higgins, E. M. (2006). Workplace stress: Etiology and consequences. *Journal of Workplace Behavioral Health*, 21(2), 89–97. [https://doi.org/10.1300/j490v21n02\\_07](https://doi.org/10.1300/j490v21n02_07)
- Craven, M., Liu, L., Mysore, M., & Wilson, M. (2020). COVID-19: Implications for business. <https://www.mckinsey.com/business-functions/risk-and-resilience/our-insights/covid-19-implications-for-business>
- Delpechitre, D., Black, H. G., & Farrish, J. (2019). The dark side of technology: Examining the impact of technology overload on salespeople. *Journal of Business & Industrial Marketing*, 34(2), 317–337. <https://doi.org/10.1108/jbim-03-2017-0057>
- Dos Santos, B., & Sussman, L. (2000). Improving the return on IT investment: the productivity paradox. *International Journal of Information Management*, 20(6), 429–440. [https://doi.org/10.1016/s0268-4012\(00\)00037-2](https://doi.org/10.1016/s0268-4012(00)00037-2)
- Ennis, L. (2018). The evolution of technostress. *Computers in Libraries*, 25(8). <https://www.questia.com/magazine/1P3-896058211/the-evolution-of-technostress>
- Fischer, T., Reuter, M., & Riedl, R. (2021). The digital stressors scale: Development and validation of a new survey instrument to measure digital stress perceptions in the workplace context. *Frontiers in Psychology*, 12, 607598. <https://doi.org/10.3389/fpsyg.2021.607598>
- Gelbrich, K., & Sattler, B. (2014). Anxiety, crowding, and time pressure in public self-service technology acceptance. *Journal of Services Marketing*, 28(1), 82–94. <https://doi.org/10.1108/jsm-02-2012-0051>
- Gibson, J. L., Ivancevich, J. M., Donnelly, J. H., & Konopaske, R. (2012). *Organizations: Behavior, structure, processes*. McGraw-Hill.
- Guchait, P., Paşamehmetoğlu, A., & Dawson, M. (2014). Perceived supervisor and co-worker support for error management: Impact on perceived psychological safety and service recovery performance. *International Journal of Hospitality Management*, 41, 28–37. <https://doi.org/10.1016/j.ijhm.2014.04.009>
- Holden, H., & Rada, R. (2011). Understanding the influence of perceived usability and technology self-efficacy on teachers' technology acceptance. *Journal of Research on Technology in Education*, 43(4), 343–367. <https://doi.org/10.1080/15391523.2011.10782576>
- Horan, K. A., Moeller, M. T., Singh, R. S., Wasson, R., O'Brien, W. H., Matthews, R. A., Jex, S. M., & Barratt, C. L. (2018). Supervisor support for stress management and intervention process. *International Journal of Workplace Health Management*, 11(4), 260–272. <https://doi.org/10.1108/ijwhm-12-2017-0113>
- Issalillah, F., & Wahyuni, S. (2021). Analisis hubungan stres kerja dan kinerja karyawan. *Jurnal Ilmu Manajemen (BION)*, 1(1), 1–8.
- Karyono, E., & Prastiwi, S. K. (2018). Pengaruh faktor individual dan psikologis terhadap kinerja pada karyawan perusahaan enzim area Jateng & DIY [The influence of individual and psychological factors on the performance of enzyme company employees in the Central Java DIY area]. *Jurnal*

- EKA CIDA*, 3(1), 78–99. <https://journal.amikomsolo.ac.id/index.php/ekacida/article/view/95/79>
- Mangkunegara, A. P. (2016). *Manajemen sumber daya manusia perusahaan [Corporate human resource management]*. Remaja Rosdakarya.
- Miltiadou, M., & Yu, C. H. (2000). Validation of the Online Technologies Self-Efficacy Scale (OTSSES). <https://creative-wisdom.com/pub/efficacy.pdf>
- Ng, L.-P., Kuar, L.-S., & Cheng, W.-H. (2016). Influence of work-family conflict and work-family positive spillover on healthcare professionals' job satisfaction. *Business Management Dynamics*, 5(5), 1–15.
- Pertiwi, W., & Nurhikmah, F. (2018). Pengaruh perubahan sistem digitalisasi terhadap kinerja karyawan [The impact of changes in the digitalization system on employee performance]. *SNAMI : Prosiding Seminar Nasional Multidisiplin*, 1, 187–191. <https://ejournal.unwaha.ac.id/index.php/snami/article/view/288>
- Qiu, W. (2013). *Impact of technostress on job satisfaction and organizational commitment* [Master Thesis]. Massey University. <https://mro.massey.ac.nz/server/api/core/bitstreams/887436ac-e8dd-4f68-822a-d919f007bfe6/content>
- Runtuwene, K. S., Kolibu, F. K., & Sumampouw, O. J. (2018). Hubungan antara stres kerja dengan kinerja pada perawat di Rumah Sakit Umum Daerah Minahasa Selatan [The relationship between work stress and performance in nurses at the South Minahasa Regional General Hospital]. *Jurnal Kesmas Unsrat*, 7(5). <https://ejournal.unsrat.ac.id/v3/index.php/kesmas/article/view/22426>
- Salanova, M., Llorens, S., & Ventura, M. (2014). Technostress: The dark side of technologies. In *The impact of ict on quality of working life* (pp. 87–103).
- Shu, Q., Tu, Q., & Wang, K. (2011). The impact of computer self-efficacy and technology dependence on computer-related technostress: A social cognitive theory perspective. *International Journal of Human-Computer Interaction*, 27(10), 923–939. <https://doi.org/10.1080/10447318.2011.555313>
- Sneider, K., & Singhal, S. (2020). Beyond coronavirus: The path to the next normal. <https://www.mckinsey.com/industries/healthcare/our-insights/beyond-coronavirus-the-path-to-the-next-normal>
- Social support as technostress inhibitor: Even more important during the COVID-19 pandemic? (n.d.). *Business & Information Systems Engineering*, 65(3). <https://doi.org/10.1007/s12599-023-00799-7>
- Steele, R. G., Hall, J. A., & Christofferson, J. L. (2019). Conceptualizing digital stress in adolescents and young adults: Toward the development of an empirically based model. *Clinical Child and Family Psychology Review*, 23(1), 15–26. <https://doi.org/10.1007/s10567-019-00300-5>
- Sugiyono. (2018). *Metode penelitian kuantitatif [Quantitative research methods]*. Alfabeta.
- Suharti, L., & Susanto, A. (2021). The impact of workload and technology competence on technostress and performance of employees. *Indian Journal of Commerce and Management Studies*, 5(2), 1–7. <https://www.ijcms.in/index.php/ijcms/article/view/403>
- Tarafdar, M., & Qrunfleh, S. (2016). Agile supply chain strategy and supply chain performance: complementary roles of supply chain practices and information systems capability for agility.

- International Journal of Production Research*, 55(4), 925–938. <https://doi.org/10.1080/00207543.2016.1203079>
- Tarafdar, M., Tu, Q., Ragu-Nathan, B. S., & Ragu-Nathan, T. S. (2007). The impact of technostress on role stress and productivity. *Journal of Management Information Systems*, 24(1), 301–328. <https://doi.org/10.2753/mis0742-1222240109>
- Teo, T. (2009). Modelling technology acceptance in education: A study of pre-service teachers. *Computers & Education*, 52(2), 302–312. <https://doi.org/10.1016/j.compedu.2008.08.006>
- Teo, T., & van Schaik, P. (2012). Understanding the intention to use technology by preservice teachers: An empirical test of competing theoretical models. *International Journal of Human-Computer Interaction*, 28(3), 178–188. <https://doi.org/10.1080/10447318.2011.581892>
- Yener, S., Arslan, A., & Kiliç, S. (2021). The moderating roles of technological self-efficacy and time management in the technostress and employee performance relationship through burnout. *Information Technology and People*, 34(7), 1890–1919. <https://doi.org/10.1108/ITP-09-2019-0462>