

Rethinking Technostress: The Moderating Role of Regulatory Focus in Enhancing Academic Performance among Accounting Students

SRIWIDHARMANELY*
MARIA SUNIATI GULTOM

Faculty of Economics and Business, University of Bengkulu, Indonesia

Abstract: The study aims to elucidate the impact of technostress on student academic performance, with a focus on the moderating role of regulation-focused strategies (promotive and preventive regulatory focus). Specifically, it examines the correlation between academic performance and technostress among accounting students through the lens of regulatory focus theory. Data from 198 accounting students were analyzed using a structural equation model. The findings show that technostress positively affects the academic performance of accounting students. Preventive regulatory focus negatively moderates the correlation between academic performance and technostress among accounting students. Moreover, a promotive regulatory focus enhances the correlation between their technostress and academic performance. This study's findings help clarify how technostress can positively influence students' academic performance. The results also enhance a model that boosts students' positive emotions, with implications for accounting student performance.

Keywords: Academic Performance, Preventive-Focused, Promotive-Focused, Regulatory Focus Theory, Technostress.

Abstrak: Penelitian ini bertujuan untuk menjelaskan dampak teknostres terhadap kinerja akademik mahasiswa akuntansi, dengan fokus pada peran moderasi strategi yang berfokus pada regulasi (promotif dan preventif) berdasarkan teori berfokus regulasi. Data dari 198 mahasiswa akuntansi dianalisis menggunakan model persamaan struktural. Temuan menunjukkan bahwa teknostres berdampak positif pada kinerja akademik mahasiswa akuntansi. Fokus regulasi preventif secara negatif memoderasi korelasi antara kinerja akademik dan teknostres di antara mahasiswa akuntansi. Selain itu, fokus regulasi promotif meningkatkan korelasi antara teknostres dan kinerja akademik mereka. Temuan penelitian ini membantu memperjelas bagaimana teknostres dapat secara positif mempengaruhi kinerja akademik siswa. Hasil penelitian ini juga memperkuat model yang meningkatkan emosi positif mahasiswa akuntansi dengan implikasi pada kinerja akademik mereka. .

Kata Kunci: Kinerja Akademik, Preventif-Focused, Promotive-Focused, Regulatory Focus Theory, Technostress.

* Corresponding Author: sriwidharmanely@unib.ac.id

1. Introduction

Student academic performance refers to the successful attainment of educational goals throughout a student's academic journey. Evaluating this performance involves measuring learning outcomes and assessing the skills acquired, which are often reflected in academic achievements such as grades and test results (Alhadabi & Karpinski, 2020; Mappadang et al., 2022). In this context, technology—especially information and communication technology (ICT)—plays a crucial role in enhancing learning outcomes by facilitating the development and management of learning systems in a systematic and problem-solving manner (Hennessy et al., 2022; Robey et al., 2000).

The advancement of ICT, accelerated by the COVID-19 pandemic, led to a significant transformation in learning methods, shifting from conventional face-to-face instruction to blended and online learning environments. Platforms such as Zoom, Google Meet, Microsoft Teams, and Learning Management Systems became essential tools in the learning process (Priyastiwi et al., 2023; Raza et al., 2021; Rasheed et al., 2020). This shift not only expanded access to learning but also transformed the educational process by enabling broader knowledge sharing (Al-Fraihat et al., 2020; Alqahtani & Rajkhan, 2020; ElSayary, 2024). However, this rapid digitalization has also introduced new psychological challenges for students, particularly technostress.

Furthermore, an interaction between technology and users — i.e., accounting students — can create complex conditions. For some students, effective adaptation to ICT tools enhances learning and supports academic performance. For others, especially those unable to manage the demands of digital tools, technostress emerges as a significant barrier to success (Sriwidharmanely et al., 2022; Sumiyana & Sriwidharmanely, 2020; Upadhyaya & Vrinda, 2021). The COVID-19 pandemic intensified this stress, forcing students to rely on both familiar and unfamiliar technologies under high-pressure conditions. Despite this, some students continued to perform well academically, even achieving perfect GPAs (Republika.co.id), suggesting that the impact of technostress may vary depending on individual factors.

Indeed, previous research shows mixed results regarding the relationship between technostress and performance. Some studies report no impact on performance (Qi,

2019), while others find negative effects (Cao et al., 2018); some even identify positive outcomes (Taradar et al., 2019). This pattern aligns with the Yerkes-Dodson Law, which explains that stress (i.e., technostress) and performance have a relationship that resembles an inverted U. Stress is not only able to improve performance, but until it reaches an optimal level, performance will decrease (Lupien et al., 2007; Anderson et al., 1989). Thus, previous researchers concentrated on reducing the adverse effects of technostress by examining the influence of proactive personality creativity (Hung et al., 2015), feedback and self-control (Sriwidharmanely et al., 2022; Sumiyana & Sriwidharmanely, 2020), the functions of self-efficacy and self-regulation (Alghamdi et al., 2020), and religiosity (Agustina et al., 2023; Priyastiwi et al., 2023).

Building on this perspective, this study aims to shift the focus from merely mitigating technostress to understanding how regulatory focus theory explains when and how technostress leads to positive academic outcomes, especially for accounting students. Answering the call of Sriwidharmanely et al. (2022), who identified that technostress could improve user performance. Moreover, this study aims to investigate the impact of technostress on enhancing students' academic achievement, particularly among accounting majors. It examines how regulatory emphasis (preventive and promotive) influences the correlation between technostress and academic performance, based on regulatory focus theory (Higgins & Pinelli, 2020).

Regulatory Focus Theory (Higgins & Pinelli, 2020) provides a crucial framework for understanding how individuals manage demands arising from technology. This theory distinguishes between two motivational orientations: a promotion focus, which prioritizes growth, aspirations, and achieving gains; and a prevention focus, which prioritizes safety, responsibility, and avoiding mistakes (Lin & Sun, 2024). These orientations correspond with the stress appraisal paradigm established by Lazarus and Folkman (1984), in which individuals evaluate a situation as either a challenge (an opportunity for growth) or a danger (a potential source of harm). In technological contexts, a promotion orientation is inclined towards challenge appraisals, whereas a prevention orientation is more inclined towards danger appraisals. Empirical research on performance under stress corroborates the influence of regulatory focus on

assessment (Tu et al., 2024). In the realm of technostress, students interpret digital expectations differently. Students with a promotion focus are more likely to perceive a complex accounting information system as a learning opportunity—an investment in skills, competence, and future career benefits. Conversely, prevention-oriented students are more inclined to perceive the same system as a danger, encompassing potential errors, time loss, or performance deficiencies. Regulatory focus serves as a motivational framework that influences the assessment and management of technostress.

Furthermore, the Conservation of Resources (CoR) Theory (Hobfoll, 1989) supports this perspective by elucidating how technostress jeopardizes-essential resources—time, energy, cognitive capacity, and self-efficacy. Students with a promotion focus perceive technology as an opportunity to enhance resources (e.g., acquiring skills, improving efficiency). In contrast, prevention-focused students are more attuned to the potential for resource depletion (e.g., time wastage, diminished grades). Over time, these varying perceptions can initiate gain spirals for promotion-oriented students or loss spirals for prevention-oriented students, contingent upon their coping strategies, support systems, and environmental influences. Recent research on technostress in students indicates that support from instructors and institutions can mitigate negative effects, effectively alleviating resource depletion (Saleem et al., 2024). Furthermore, extensive reviews suggest that regulatory focus influences the stress–strain relationship in the context of technological demands (Kumar, 2024), underscoring that motivational orientation is a critical determinant of individuals' resilience or vulnerability to ICT pressure. In conclusion, integrating regulatory focus, stress appraisal, and resource dynamics provides a sophisticated, multilevel framework for understanding technostress outcomes, encompassing both objective technical demands and motivational predispositions, as well as resource trajectories.

Furthermore, it is particularly relevant in the context of accounting education, where technology plays a central role in shaping professional readiness. Accounting students must master sophisticated tools such as SAP, MYOB, Atlas, Accurate, and QuickBooks while meeting rigorous academic expectations (Byrne & Willis, 2014; Laksmi & Suciati, 2018; Pratama & Komariyah, 2023; Schmidt et al., 2020). These

demands heighten their vulnerability to technostress, especially given the accounting field's low tolerance for errors and strict regulatory compliance (Novak et al., 2021; Petani et al., 2021; Suddaby et al., 2015). Thus, understanding how students' regulatory focus interacts with technostress is crucial for evaluating their preparedness in this increasingly digitized profession (Jackson & Allen, 2024; Leitner-Hanetseder et al., 2021).

According to the regulatory focus theory, self-regulation is a process by which individuals systematically activate and retain cognitive and behavioural skills to attain goals (Zimmerman, 2002). The regulatory focus theory posits that each individual possesses a unique orientation toward accomplishment that impacts their actions (Brockner & Higgins, 2001). Individuals regulate their behavior through either a promotion focus, which emphasizes growth and achievement, or a prevention focus, which emphasizes safety, responsibility, and error avoidance (Higgins, 2012; Vallone et al., 2023; Winterheld & Simpson, 2011). Thus, self-regulation involves students reflecting on their learning process, setting goals, self-critiquing, and managing stress to decrease the gap between current and desired outcomes.

Students with a promotion-focused orientation perceive goals as aspirations. They are driven by a desire for personal growth, actively engaging in activities that foster progress, achievement, and the realization of their full potential. They view goals not merely as tasks to be completed, but as opportunities to attain optimal outcomes. Conversely, students with a prevention-focused orientation regard goals as obligations or responsibilities, directing their efforts toward maintaining security, avoiding risks, and preventing undesirable results—such as poor academic performance or a low GPA. This group tends to align its behavior with external expectations and social norms (Higgins, 2012; Tseng & Kang, 2008).

Supporting this explanation, Byron et al. (2018) found that under high stress conditions, individuals with a promotion focus tend to perform better, as stress serves as a motivator that drives them to achieve. In contrast, when stress levels are low, the relationship between a promotion focus and performance becomes weaker or negligible. Interestingly, a prevention focus—often associated with caution and risk avoidance—

can also enhance performance under high stress, as individuals become more vigilant and driven to avoid failure. In digital platforms such as Enterprise Service Management (ESM), Luqman et al. (2021) found that a promotion-focused mindset significantly enhances psychological outcomes, further reinforcing the critical role of motivational orientation in shaping individual responses to technostress.

This study significantly advances understanding of the complex relationship between technostress and academic performance among accounting students by integrating regulatory focus theory into the analysis. While prior research has predominantly focused on mitigating the adverse effects of technostress, this work shifts the perspective to examine how, under certain conditions, technostress can positively influence academic achievement. By highlighting the moderating role of regulatory focus—specifically the differential impacts of prevention and promotion orientations—this research elucidates when and how technostress can serve as a motivational force rather than merely a hindrance.

Accounting students face unique challenges due to the dual demands of mastering sophisticated technological tools and meeting stringent academic and professional standards. This study addresses the pressing need to understand how individual self-regulatory strategies interact with technostress in a high-stakes, technology-driven educational context. The findings reveal that a promotive regulatory focus enhances the beneficial effects of technostress on academic outcomes, fostering resilience and goal attainment. In contrast, a preventive focus tends to buffer its potential negative impacts by encouraging caution and error avoidance.

By developing and validating a conceptual model that incorporates regulatory focus theory, this research offers actionable insights for educational institutions. It advocates cultivating self-regulatory skills tailored to students' motivational orientations to improve their emotional well-being and academic performance in increasingly digital learning environments. These contributions not only enrich the literature on technostress and student performance but also provide practical frameworks for educators and policymakers aiming to optimize learning outcomes in accounting and other intensive technology disciplines.

This research concludes that technostress has a favorable impact on the academic achievement of accounting students. Then, preventive regulatory attention focused on minimizing the detrimental impact or weakening the link between technostress and academic performance. Meanwhile, a promotive regulatory focus positively moderates the association between technostress and one's educational achievement. Moreover, based on the research results, this study explores how technostress can positively influence student academic performance.

The study's results enhance a model aimed at boosting students' positive emotions about the influence of technology on their performance, particularly among those with a promotive regulatory focus. These findings contribute to the development of a conceptual model that encourages educational institutions, especially those in accounting programs, to foster students' self-regulatory capacities. By promoting regulatory focus strategies, universities can enhance students' emotional resilience and equip them to navigate ongoing technological changes. Ultimately, the implications of this research extend beyond accounting, offering valuable insights for managing technostress in other technology-intensive academic fields.

This paper further discusses in the following order. Section 2 presents the literature review and the development of the hypothesis. Section 3 presents a complete research method, including a data sample and analytical tools. Section 4 presents and discusses research findings. Lastly, section 5 discusses conclusions, limitations, and implications of the research.

2. Theoretical Framework and Hypothesis Development

2.1. Technostress and Academic Performance of Accounting Students

Technostress among students originates from the incongruence between students and technology that fails to meet their requirements, referred to as Person-Environment Fit (Goodhue & Thompson, 1995), as well as from students' inability to use technology proficiently (Ayyagari et al., 2011). Despite experiencing technostress, students' behavior is not immediately affected, enabling them to maintain effective task performance in the short term (Sarid et al., 2004). This phenomenon aligns with the

Yerkes-Dodson law, which posits that stress can improve performance to an optimal level, after which performance deteriorates (Anderson et al., 1989; Lupien et al., 2007). Accounting students may experience technostress alongside satisfactory task performance, as they do not consistently modify their behavior to mitigate the pressure; instead, they operate within acceptable stress thresholds. This dynamic is exemplified by the inverted U-shaped curve of the Yerkes-Dodson law, which illustrates the relationship between stress and performance, indicating that both excessively low and excessively high stress levels can be harmful (Nieuwenhuis, 2024; Sheng & Fan, 2022).

The transactional model of stress (Lazarus & Folkman, 1984) and the Conservation of Resources (CoR) theory (Hobfoll, 1989) elucidate the dynamics of technostress. These frameworks suggest that stressors can be viewed as either challenges or obstacles. When perceived as challenges, techno-stressors generate techno-eustress, which cultivates positive emotions, experimentation, and problem-focused coping strategies. Such mechanisms mobilize resources and enhance engagement, creativity, and performance, thereby expanding the Yerkes-Dodson principle by emphasizing the appraisal process and resource allocation that transform stress into a catalyst for improved performance.

This study posits that accounting students experiencing technostress may attain an optimal performance level, reflecting the inverted U-curve model, contextualized through appraisal and resource dynamics. This finding is consistent with those of Tarafdar et al. (2019) and builds upon the research of Sriwidharmanely et al. (2022), which indicated that accounting students facing technostress exhibited enhanced performance. These outcomes demonstrate the advantageous aspects of stress (Califf et al., 2020), particularly when stressors are perceived as challenges rather than obstacles. Saleem et al. (2021) demonstrated that technostress positively affects employee performance, suggesting that this mechanism is functional across diverse contexts. Moreover, studies indicate that the zenith of academic stress can elicit quantifiable immunological alterations in students without altering their health behaviours, corroborating the notion that acute stress can enhance performance (Sarid et al., 2004). Mellifont et al. (2016) illustrated that individuals with anxiety disorders can attain

improved work outcomes when provided with appropriate support, suggesting that stress, under favorable circumstances, can **scatalyze** performance enhancement. This study formulates Hypothesis One based on the aforementioned theoretical perspectives and empirical evidence.

H1: Technostress has a positive impact on the academic performance of accounting students.

2.2. Regulatory-Focused, Technostress, and Academic Performance of Accounting Students

The direct impact of technostress is significant; however, the extent to which individuals experience eustress or distress is largely contingent upon their motivational orientation. Regulatory focus theory (Compeau & Higgins, 1995) posits that individuals exhibit chronic orientations toward promotion (emphasizing advancement, achievement, and gains) or prevention (emphasizing security, obligations, and loss avoidance). This distinction is particularly pertinent in scenarios of technological pressure, where motivational orientations influence whether individuals view stress as an opportunity or a threat. A promotion focus motivates individuals to perceive stressors from a growth-oriented perspective.

Fettahoglu and Yikilmaz (2025) recently expanded this argument by showing that techno-eustress mediates the relationship between regulatory orientations and performance among accounting professionals, emphasizing that a promotion focus improves resource-building outcomes in high-tech settings. The findings indicate that promotion focus enhances the relationship between techno-eustress and positive outcomes by intensifying challenge appraisals, fostering resource investment, and maintaining approach coping strategies. Students with a promotive focus employ adaptive strategies to achieve their objectives and navigate challenging circumstances (Spiegel et al., 2004). Accounting students with a promotion-oriented mindset strives to achieve favorable results through adaptability, enthusiasm, and innovation. They will be inclined to take risks, investigate alternative options, and endeavor to optimize their returns. Grant and Langan-Fox's (2007) study demonstrated that individuals who focus on fostering positive outcomes experience reduced distress when using daily stress-

coping strategies. Byron et al. (2018) found that a promotion-oriented mindset correlated with enhanced job performance in high-stress situations, particularly when employees encounter job instability. Furthermore, Du et al. (2018) established that a promotion focus amplifies the correlation between job control and creativity through self-efficacy.

In contrast, a prevention focusses emphasize vigilance, risk aversion, and responsibility. A preventive regulatory focus prioritizes fulfilling obligations and mitigating risks. Students with this orientation prioritize security and endeavor to reduce adverse outcomes. They frequently employ avoidance or cautionary strategies in stress management (Spiegel et al., 2004). Prevention-focused individuals mitigate stress by applying proactive coping strategies in their daily routines (Grant & Langan-Fox, 2007); however, these strategies may limit opportunities for exploration and growth. Byron et al. (2018) found that a prevention orientation can enhance work performance in high-stress situations, primarily by emphasizing responsibilities rather than fostering innovation. In academic environments, prevention-oriented students often emphasize safety requirements and focus on meeting expectations, making them more susceptible to the detrimental effects of technostress in high-risk situations. This study found that individuals with a prevention-oriented mindset exhibit heightened sensitivity to hindrance stressors and are more inclined to sustain defensive coping mechanisms.

Consistently, Luqman et al. (2021) reported that a prevention focus diminished the positive effects of enterprise social media usage and exacerbated the negative impacts of interruption overload. Preventive regulatory students concentrate on meeting the anticipated requirements and obligations. They seek to guarantee their safety and mitigate adverse outcomes. Students with a preventive focus employ avoidance or cautionary strategies to achieve their objectives and navigate stressful circumstances (Spiegel et al., 2004). Individuals who emphasize prevention adeptly manage risks through diligent avoidance strategies. Individuals who focus on prevention experience lower stress levels by employing proactive coping strategies to manage daily stressors (Grant & Langan-Fox, 2007).

This study, therefore, suggests that accounting students can leverage their regulatory focus—whether promotion or prevention—to influence how technostress affects their academic performance. This study posits that accounting students can utilize their regulatory focus as a coping strategy to overcome the effects of technostress on their performance. According to the information provided, this research aims to establish the following hypothesis.

H2a: Preventive-focused regulatory moderate the relationship between accounting students' academic performance and technostress.

H2b: Promotive-focused regulatory moderate the relationship between technostress and accounting students' academic performance.

3. Research Method

Using the purposive sampling technique, the sample consists of accounting students who have implemented information technology-assisted learning for at least one year. The research data was collected by disseminating questionnaires via Google Forms on personal social media platforms and friends' social media networks, including WhatsApp, Instagram, Telegram, and Facebook. The respondent can access the questionnaire via the link on <https://bit.ly/RegulatoryFocusMitigateTechnostress>. Data collection was conducted from March 23 to April 17, 2023. Two hundred and four respondents completed the questionnaire; however, only 198 were included in the analysis, as six did not meet the sample criteria. Among the 198 respondents, the gender breakdown showed 137 males (69.2%) and 61 females (30.8%). For the student education level, 177 students (89.4%) are dominated by S1/D4 Accounting students (89.4%), while 21 students are D3 accounting (10%). A total of 58 respondents were in semester IV, 75 in semester VI, 4 in semester VII, 58 in semester VIII, and three among fresh graduates.

Technostress is a negative psychological state that students experience when using technology, caused by five factors: techno-overload, techno-uncertainty, techno-invasion, techno-complexity, and techno-insecurity (Taradar et al., 2010). This variable adopts a questionnaire developed by Upadhyaya and Vrinda (2021), which

employed a 23-item Likert scale. Technostress is classified as very low for levels between 1.00 and 1.80, low for values between 1.81 and 2.60, moderate for values between 2.61 and 3.40, high for values between 3.41 and 4.20, and very high for values between 4.21 and 5.00. Student academic achievement is assessed using GPA (Cumulative Achievement Index). Article 26 of 2022, No. 3, by the Minister of Education and Culture, has been updated to use the Likert scale for evaluating the Cumulative Performance Index (GPA). Interval values are grouped as follows: 1.5-2.0 for very low academic performance, 2.1-2.5 for low academic performance, 2.6-3.0 for moderate academic performance, 3.1-3.5 for high academic performance, and 3.5-4.00 for extremely high academic performance.

Students with a preventive self-regulation focus work to achieve their goals by seeking stability and protecting their self-esteem, often trying to avoid failure or negative results. In contrast, students with a promotive self-regulation focus aim for personal growth and progress toward their ideal selves, striving for positive outcomes and achievements. The regulatory focus measurement used a questionnaire developed by Neubert et al. (2008), consisting of 18 statement items: 9 related to preventive regulatory focus and 9 to promotive regulatory focus. A score of 1.00-1.80 indicates a very low level of regulatory focus; 1.81-2.60 indicates a moderate level; 2.61-3.40 indicates a medium level; 3.41-4.20 indicates a high level; and 4.21-5.00 indicates a very high level. The hypothesis-testing method uses structural equation modelling (SEM) with Smart Partial Least Squares (PLS). This method is powerful because it can handle data that does not follow a multivariate distribution. It allows the use of indicators with different scales (categories, ordinals, intervals, ratios) in the same model and does not require large sample sizes. The hypothesis is supported if the p-value is less than or equal to 0.05 (Hair et al., 2019).

4. Results and Discussion

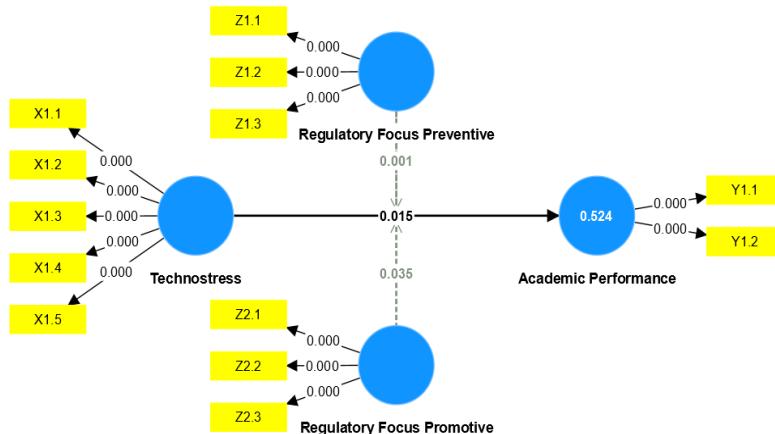
For validity, an indicator is considered acceptable when its outer loading exceeds 0.6, and ideally above 0.7. As shown in Table 1 (see appendix), all indicators meet this criterion with values above 0.7. Validity is also confirmed if the Average Variance

Extracted (AVE) and communality values are at least 0.5. Table 2 (see appendix) shows that the AVEs exceed 0.5, further supporting the validity of all indicators. For convergent validity, results are considered valid if cross-loadings are greater than 0.6 and higher than those of other variables. As shown in Table 3 (see appendix), the discriminant validity test results also indicate cross-loadings above 0.6, confirming the validity of these variables.

Reliability assessments employ two methodologies: Cronbach's alpha and composite reliability. Cronbach's rule of thumb suggests that alpha and composite reliability should ideally be 0.7, though values as low as 0.6 are acceptable. Table 4 (refer to the appendix) presents the results of the reliability test for Cronbach's alpha and composite reliability values. The suggested thresholds for Cronbach's alpha and composite reliability are 0.7, while 0.6 is deemed acceptable. All constructs in this study exhibit Cronbach's alpha values exceeding 0.6 and composite reliability values surpassing 0.7, as presented in Table 4. Therefore, it can be concluded that all constructs exhibit reliability.

All existing criteria have met the cut-off value based on the goodness-of-fit test results. The most critical indicators for a good model in relation to hypothesis testing are: Average R-squared (ARS), Average Block VIF (AVIF), and Average Path Coefficient (APC) (Kock, 2014). The model is ideal based on the significant values of Average R-squared (ARS) (0.452; $P < 0.001$) and Average Path Coefficient (0.250; $P < 0.001$), both of which are less than 0.05. The fits model is also supported by the ideal Average Block VIF (AVIF) value (2.702), which is less than 3.3, while the highest acceptable value is 5. The inner model test yields an R-squared value of 0.524 for the Academic Performance construct. That is, academic performance can be influenced by all constructs in this study, namely, technostress, by 52.4%. Other factors can account for the remaining 47.6% of academic performance. Figure 1 displays the outcomes of bootstrapping for hypothesis testing.

Figure 1.
Hypothesis Test Results



4.1. Technostress and academic performance of Accounting students

Figure 1 and Table 5 in the appendix indicate that technostress has a significant, favorable impact on academic achievement (P -value = 0.015), which is below 0.05. A t -value of 2.440, which is more than 1.66, with a P -value of 0.015, less than 0.05, indicates that Hypothesis One is supported. Furthermore, technostress had a small but significant direct effect on academic performance (β = 0.151; small positive effect; Effect Size (f^2) \approx 0.023; 95% CI based on SE = 0.062). It means that increased technostress is associated with a slight increase in academic performance (perhaps because stress at a certain level can be motivating).

This research result aligns with Hobfoll's (1989) Conservation of Resources (CoR) Theory, which posits that psychological stress arises from either an actual threat or loss of resources, or from a lack of resource gain despite considerable effort expended. Within the framework of this study, technostress exerts a positive, direct influence on academic performance, which is explicable through the Conservation of Resources (CoR) theory as a form of "resource investment." Students experiencing technostress engage in enhancing their digital competencies and in using adaptive coping strategies as novel resources. Accounting students experience technostress; however, their performance in uncomplicated tasks improves. According to the CoR Theory's principle

of gain spirals, initial resource acquisition leads to subsequent gains as enhanced resources become accessible, and proactive resource investment significantly influences stress prevention and resilience enhancement (Sonnenstag & Meier, 2024).

This finding validated Yerkes-Dodson's theory, which suggests that stress can enhance performance. This law states that anxiety or stress can enhance performance up to a point, after which performance declines (Anderson et al., 1989; Lupien et al., 2007). Accounting students experienced a controlled degree of technostress due to the use of ICTs during online learning and when using accounting programs in various courses. They must utilize laptops, phones, computers, and other digital devices for online learning, including Zoom, WhatsApp, Telegram, and Google Meet. They must acquire proficiency in several software programs and accounting information systems, including Accurate, journals, Microsoft Excel, and others, particularly in courses that may not have been previously emphasized. The student should become adept at using these ICTs to participate effectively in class, regardless of whether they experience low or high levels of technostress.

This study's findings align with those of Sarid et al. (2004), indicating that academic stress is associated with immunological changes that improve short-term academic performance. This study also supports Demeter et al. (2013), who state that college students procrastinate to manage test anxiety and achieve academic success. Technostress dimensions have a complex effect on students, where several dimensions, such as techno-ease, techno-reliability, and techno-sociality, are negatively related to anxiety and depression. Meanwhile, academic motivation mediates the relationship between technostress and psychological health (Vallone et al., 2023). The data show that stress does not hinder pupils from improving their academic performance. It is crucial to expand the focus of information systems beyond stress to enhance their benefits and mitigate the adverse impacts of Technostress (Taraifdar et al., 2019). Wang et al. (2021) explain that techno-overload can be an "enhancer" of work performance in specific contexts, although techno-complexity and techno-insecurity have a negative influence.

4.2. Preventive-Focused Regulatory, Technostress, and Academic Performance of Accounting Students.

Figure 1 and Table 5 show that a preventive regulatory focus negatively affects the relationship between technostress and student academic performance, with a path coefficient of -0.249. The t-value is statistically significant at 3.418, above the critical value of 1.66, with a P-value of 0.001, indicating significance below the 0.05 threshold. The study finds that a regulatory approach centered on prevention weakens the technostress effect on their academic achievement, confirming Hypothesis Two. Moreover, Preventive-Focused Regulatory played a mediating role in the relation between technostress and academic performance ($\beta = -0.249$; moderate negative effects; Effect Size (f^2) $\approx 0.062 \rightarrow$ Small Effect (close to medium)). It is an important moderation effect. When a person has a preventive regulatory focus (focus on avoiding failure), interaction with technostress has a substantial negative impact on academic performance. Students with a prevention focus who experience high technostress will experience a greater decline in performance. When students focus on prevention, the favorable correlation between technostress and academic achievement weakens.

This finding is also strongly aligned with the Transactional Model of Stress and Coping (Lazarus & Folkman, 1984), wherein regulatory focus functions as an "appraisal lens" that influences the perception of stressors as either threats or challenges. Recent studies have affirmed that prevention focus mediates the negative correlation between mindfulness and proactive coping in the context of technostress, and that technostress exacerbates the adverse relationship between prevention focus and proactive coping. The research indicated that individuals with a prevention orientation were more vulnerable to the detrimental impacts of technostress (Tuan, 2021). During the post-adoption/continuance phase, trait-based individual differences—specifically, regulatory focus—emerge as a significant boundary condition. Recent studies within the Job Demands-Resources (JD-R) model indicate that regulatory foci influence the extent to which job demands and resources affect workplace outcomes. The negative impact of emotional demands on job burnout is greater among individuals with a diminished prevention focus (Jing et al., 2024).

The study's results support previous research indicating that emphasizing prevention reduces the direct relationship between load interruptions and the adoption of enterprise service management as a technology catalyst (Luqman et al., 2021). Additionally, a preventive approach mitigated the direct relationship between stress, challenge (specifically job uncertainty), and job performance (Byron et al., 2018). In contrast, employees with a high level of promotion focus are more resistant to the adverse effects of technostress creators and experience less role stress. In contrast, those with a prevention focus are more vulnerable (Hwang & Cha, 2018).

Technostress is significantly associated with increased anxiety and depression in students, reduced productivity, and higher dropout rates, as well as fully mediates the relationship between perceived hybrid learning environment and academic performance (Abbas et al., 2023). Students prioritize fulfilling coursework to enhance their academic safety, meet their responsibilities, and avoid poor grades under a preventive regulatory focus. The study revealed that pupils exhibit a strong preventive regulatory focus. When a student experiences technostress, whether low or high, their academic performance is negatively affected. They are more concerned with self-control to achieve their objectives, motivated by a desire for protection and security, focused on personal needs, and driven to avoid failure or negative outcomes. Prevention-focused students adopted avoidance coping and emotion-focused coping when dealing with technostress, in contrast to promotion-focused students, who used problem-focused coping. The literature suggests that avoidance behavior mediates the technostress-performance relationship (Fuglseth et al., 2014).

4.3. The Promotive-focused regulatory, technostress, and academic performance of accounting students.

Figure 1 and Table 5 demonstrate that a promotive regulatory focus favors the connection between technostress and student academic achievement, with a path coefficient value of 0.193. The statistical t-value of 2.104 exceeds 1.66 and has a P-value of 0.001, which is less than 0.05. Hence, hypothesis three is accepted. Promotive-Focused Regulatory had a mediating role in the relationship between technostress and academic performance ($\beta = 0.193$; Effect Size (f^2) ≈ 0.037 ; Small Effect). Students with

a regulatory focus who are promotive (i.e., focus on achieving success) and experience technostress actually show an increase in academic performance. They are better able to turn technological stress into positive motivation. This study found that a promotive-focused regulatory style enhances the favorable impact of technostress on accounting students' academic performance. Then, when students prioritize advancement, the correlation between technostress and academic performance becomes stronger.

Based on Regulatory Focus Theory, promotion-oriented individuals focus on advancement, growth, and accomplishment with an eager strategy and a gain-approach mindset, which, in a technostress context, supports the use of proactive coping strategies (Compeau & Higgins, 1995; Tuan, 2021). Promotion-focused students experience resource enrichment through technostress exposure—they invest cognitive and emotional resources to develop new competencies (digital literacy, adaptive learning strategies), which then become a resource caravan that supports future challenges—in line with the CoR literature showing that job resources lead to work engagement, which in turn is related to greater personal initiative, spiraling further into work-unit innovativeness in positive gain spirals (Chen et al., 2015).

This study also confirms that regulatory promotion emphasizes the favorable link between business service management as a technostress trigger and employee psychological transformation (Luqman et al., 2021). Enterprise Service Management (ESM) is a digital platform within a company that enables social networks to exchange information, seek guidance, and share knowledge with peers. A psychological transition is a shift from a state of psychological balance (alignment with a specific worldview) to a different one. In the context of a shift towards technology-enhanced learning, a promotion focus predicts positive perceptions of change and higher technology-related self-efficacy, which in turn increases motivation to use digital devices (Hoch et al., 2024).

Students **s**prioritize achieving optimal outcomes in regulatory promotion, driven by aspirations and values. Emphasizing academic achievement is crucial, with a primary focus on personal development and advancement. The study showed that College students possess a high degree of promotive focus regulators. Students' academic

performance improves when they face either low or high levels of technostress, as they become more focused on achieving their goals, driven by the desire for growth and advancement to reach their ideal selves and desired outcomes. Students with a focus on problem-solving, particularly those in advancement, employ problem-focused and meaning-focused coping strategies to manage technostress, which are more adaptive than emotion-focused approaches. Research within the Job Demands-Resources model indicates that regulatory foci, whether focused or avoidance, influences the impact of job demands and resources on workplace outcomes. Specifically, a promotion focus enhances motivational processes that lead to positive outcomes, including job satisfaction and affective commitment (Jing et al., 2024). Promotion focus enhances positive emotions, expanding cognitive and behavioural options while cultivating lasting personal resources, including digital proficiency and problem-solving abilities (Sriwidharmanely et al., 2022).

5. Conclusion, Implications, and Limitations

This study demonstrates that technostress can positively impact the academic achievement of accounting students. Specifically, moderate levels of technostress experienced during blended learning are significantly associated with improved academic performance. The analysis further reveals that a prevention-focused regulatory orientation weakens the relationship between technostress and academic achievement, whereas a promotion-focused orientation strengthens it. These findings support the Yerkes-Dodson law, which posits that moderate levels of stress can enhance performance up to an optimal level. Moreover, the results extend Regulatory Focus Theory by integrating it into the technostress-performance relationship, offering a model that explains how individual motivational orientation—promotive or preventive—can shape students' responses to stress in digitally mediated learning environments. This model also complements existing technostress coping frameworks by incorporating performance outcomes as a central element.

The study's results have significant implications for both educators and students. This research empirically contributes to the literature by demonstrating that

technostress can positively influence academic performance, particularly among accounting students in blended learning environments. Accounting students mandated to master intricate systems, such as SAP, Atlas, or Accurate, during the pandemic-driven transition to blended learning reported enhanced academic motivation and elevated GPAs when they embraced a promotive orientation—pursuing growth and achievement—despite encountering significant technostress. These findings empirically support extending Regulatory Focus Theory to educational and technostress research by demonstrating how motivational orientation interacts with digital pressures to influence learning outcomes. It underscores the need for future research to explore not only the existence of technostress but also the mediating role of individual traits, thereby providing a basis for deeper inquiry into digital adaptation mechanisms in higher education. These findings contribute to the literature by demonstrating that trait-based individual differences (regulatory focus) are as critical as state-level factors (self-efficacy, coping strategies) in influencing technostress outcomes, and by offering an empirical foundation for personalized support systems for the adoption of educational technology.

This research holds considerable practical relevance for educational institutions, educators, and learners. Given that technostress can serve as a performance-enhancing catalyst under specific circumstances, it should not be regarded solely as a detrimental phenomenon to be eradicated; instead, it should be evaluated with nuance. Universities should implement student-centred interventions and academic support systems that enhance self-regulation and motivational awareness, specifically assisting students in recognizing and reinforcing their promotion-focused tendencies. Training programs or workshops can be established to help students develop digital resilience and manage stress related to online platforms and technological tools. Lecturers should adapt their teaching methods to address the diverse motivational orientations of their students—delivering challenging, goal-oriented tasks for promotion-focused learners and providing structured, clarity-driven instruction for prevention-focused learners. Furthermore, institutions must ensure equitable access to technology and mitigate obstacles that may exacerbate technostress, especially for students with limited digital

competence. These pragmatic measures can enhance students' academic outcomes and their long-term adaptability in the increasingly digitalized professional environment, particularly in disciplines such as accounting, where accuracy, regulatory compliance, and proficiency in advanced information systems are essential (Laksmi & Suciati, 2018; Pratama & Komariyah, 2023).

Nonetheless, various limitations must be recognized. The research concentrated exclusively on accounting students from diverse universities in Indonesia, disregarding differences in institutional quality, educational standards, or curriculum design. The distribution of respondents across universities was disproportionate, limiting the sample's ability to accurately represent each institution's distinct technostress profile. Moreover, the study failed to delineate the technologies or devices implicated in technostress, nor did it elucidate the nature of the moderation effect—whether it was partial or complete—within the model. This research relies solely on self-reports, necessitating triangulation with institutional records and official documentation to obtain accurate and objective GPA data.

Future research should embrace a broader range of methodologies and enhance rigor. Future research may investigate various coping strategies, evaluate specific stress-inducing technologies, and incorporate larger, more representative samples across institutions to enhance the generalizability of the results. Researchers should regard the quality of educational environments as a moderating variable and further examine the characteristics of mediating or moderating effects in the relationship between technostress and performance. A comparative analysis of low, moderate, and high levels of technostress may elucidate the thresholds at which technostress shifts from advantageous to harmful. This study positions technology as a stressor while advocating a broader perspective that views stress not solely as an obstacle but also as a potential catalyst for academic excellence when effectively managed through appropriate psychological and behavioural strategies.

References

Abbas, A., Rincón, G. B., Wang, L., & Siddiqui, M. K. (2023). Investigating the Impact of Technostress on Perceived Hybrid Learning Environment and Academic Performance. *Electronic Journal of E-Learning*, 21(4), 382–393. <https://doi.org/10.34190/EJEL.21.4.3084>

Agustina, Y., Yunia, A., Aryan, D., & Mirza, B. R. (2023). Does Religiosity Matter? Experimental Research on Abusive Supervision in Budgetary Slack Creation. *The Indonesian Journal of Accounting Research*, 25(3), 437–460. <https://doi.org/10.33312/IJAR.641>

Al-Fraihat, D., Joy, M., Masa'deh, R., & Sinclair, J. (2020). Evaluating E-learning systems' success: An empirical study. *Computers in Human Behavior*, 102, 67–86. <https://doi.org/10.1016/J.CHB.2019.08.004>

Alghamdi, A., Karpinski, A. C., Lepp, A., & Barkley, J. (2020). Online and face-to-face classroom multitasking and academic performance: Moderated mediation with self-efficacy for self-regulated learning and gender. *Computers in Human Behavior*, 102, 214–222. <https://doi.org/10.1016/J.CHB.2019.08.018>

Alhadabi, A., & Karpinski, A. C. (2020). Grit, self-efficacy, achievement orientation goals, and academic performance in University students. *International Journal of Adolescence and Youth*, 25(1), 519–535. <https://doi.org/10.1080/02673843.2019.1679202>

Alqahtani, A. Y., & Rajkhan, A. A. (2020). E-Learning Critical Success Factors during the COVID-19 Pandemic: A Comprehensive Analysis of E-Learning Managerial Perspectives. *Education Sciences 2020*, Vol. 10, Page 216, 10(9), 216. <https://doi.org/10.3390/EDUCSCI10090216>

Anderson, K. J., Revelle, W., & Lynch, M. J. (1989). Caffeine, impulsivity, and memory scanning: A comparison of two explanations for the Yerkes-Dodson Effect. *Motivation and Emotion*, 13(1), 1–20. [https://doi.org/10.1007/BF00995541/METRICS](https://doi.org/10.1007/BF00995541)

Ayyagari, R., Grover, V., & Purvis, R. (2011). Technostress: Technological Antecedents and Implications. *MIS Quarterly*, 35(4), 831–858. <https://doi.org/10.2307/41409963>

Brockner, J., & Higgins, E. T. (2001). Regulatory Focus Theory: Implications for the Study of Emotions at Work. *Organizational Behavior and Human Decision Processes*, 86(1), 35–66. <https://doi.org/10.1006/OBHD.2001.2972>

Byrne, M., & Willis, P. (2014). The Role of Prior Accounting Education and Work Experience. In *The Routledge Companion to Accounting Education*. <https://www.book2look.com/embed/9781134511518>

Byron, K., Peterson, S. J., Zhang, Z., & LePine, J. A. (2018). Realising challenges and guarding against threats: Interactive effects of regulatory focus and stress on performance.

Journal of Management, 44(8), 3011–3037.
<https://doi.org/10.1177/0149206316658349>

Califf, C. B., Sarker, S., & Sarker, S. (2020). The bright and dark sides of technostress: A mixed-methods study involving healthcare it. *MIS Quarterly: Management Information Systems*, 44(2), 809–856. <https://doi.org/10.25300/MISQ/2020/14818>

Chen, S., Westman, M., & Hobfoll, S. E. (2015). The Commerce and Crossover of Resources: Resource Conservation in the Service of Resilience. *Stress and Health : Journal of the International Society for the Investigation of Stress*, 31(2), 95. <https://doi.org/10.1002/SMI.2574>

Compeau, D. R., & Higgins, C. A. (1995). Application of Social Cognitive Theory to Training for Computer Skills. *Information Systems Research*, 6(2), 118–143. <https://doi.org/10.1287/isre.6.2.118>

Demeter, D. V., Davis, S. E., Demeter, D. V., & Davis, S. E. (2013). Procrastination as a Tool: Exploring Unconventional Components of Academic Success. *Creative Education*, 4(7), 144–149. <https://doi.org/10.4236/CE.2013.47A2018>

Du, Y., Li, P., & Zhang, L. (2018). Linking job control to employee creativity: The roles of creative self-efficacy and regulatory focus. *Asian Journal of Social Psychology*, 21(3), 187–197. <https://doi.org/10.1111/ajsp.12219>

ElSayary, A. (2024). An investigation of teachers' perceptions of using ChatGPT as a supporting tool for teaching and learning in the digital era. *Journal of Computer Assisted Learning*, 40(3), 931–945. <https://doi.org/10.1111/JCAL.12926>

Fettahoglu, S., & Yikilmaz, I. (2025). Reframing Technostress for Organizational Resilience: The Mediating Role of Techno-Eustress in the Performance of Accounting and Financial Reporting Professionals. *Systems 2025, Vol. 13, Page 550*, 13(7), 550. <https://doi.org/10.3390/SYSTEMS13070550>

Fuglseth, A. M., Sørebø, Ø., Lin, Y., & Cheng, Z.-H. (2014). The effects of technostress within the context of employee use of ICT. *Computers in Human Behavior*, 40, 161–170. <https://doi.org/10.1016/j.chb.2014.07.040>

Grant, S., & Langan-Fox, J. (2007). Personality and the occupational stressor-strain relationship: The role of the Big Five. In *Journal of Occupational Health Psychology* (Vol. 12, Issue 1, pp. 20–33). Educational Publishing Foundation. <https://doi.org/10.1037/1076-8998.12.1.20>

Hair Jr, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate Data Analysis* (Eighth Edition). Cengange. <https://doi.org/10.1002/9781119409137.ch4>

Hennessy, S., D'Angelo, S., McIntyre, N., Koomar, S., Kreimeia, A., Cao, L., Brugha, M., & Zubairi, A. (2022). Technology Use for Teacher Professional Development in Low- and Middle-Income Countries: A Systematic Review. *Computers and Education Open*, 3, 100080. <https://doi.org/10.1016/J.CAEO.2022.100080>

Higgins, E. T. (2012). Regulatory Focus Theory. In P. A. M. Van Lange, A. W. Kruglanski, & E. T. Higgins (Eds.), *Handbook of Theories of Social Psychology* (Vol. 1, pp. 483–504). SAGE Publications.

Higgins, E. T., & Pinelli, F. (2020). Regulatory Focus and Fit Effects in Organization. *Annual Review of Organizational Psychology and Organizational Behavior*, 7, 25–48. <https://doi.org/10.1146/annurev-orgpsych-012119-045404>

Hobfoll, S. E. (1989). Conservation of Resources: A New Attempt at Conceptualizing Stress. *American Psychologist*, 44(3), 513–524. <https://doi.org/10.1037/0003-066X.44.3.513>

Hoch, E., Scheiter, K., & Sassenberg, K. (2024). Promotion focus, but not prevention focus, of teachers and students matters when shifting towards technology-based instruction in schools. *Scientific Reports*, 14(1). <https://doi.org/10.1038/S41598-024-73463-Z>

Hung, W.-H., Chen, K., & Lin, C.-P. (2015). Does the proactive personality mitigate the adverse effect of technostress on productivity in the mobile environment? *Telematics and Informatics*, 32(1), 143–157. <https://doi.org/10.1016/J.TELE.2014.06.002>

Hwang, I., & Cha, O. (2018). Examining technostress creators and role stress as potential threats to employees' information security compliance. *Computers in Human Behavior*, 81, 282–293. <https://doi.org/10.1016/j.chb.2017.12.022>

Jackson, D., & Allen, C. (2024). Enablers, barriers, and strategies for adopting new technology in accounting. *International Journal of Accounting Information Systems*, 52, 100666. <https://doi.org/10.1016/J.ACCINF.2023.100666>

Jing, T., Bai, M., Yu, C., Xian, Y., Zhang, Z., & Li, S. (2024). Promotion or prevention: regulatory foci as moderators in the job demands–resources model. *Human Resources for Health*, 22(1), 1–17. <https://doi.org/10.1186/S12960-024-00950-9/FIGURES/5>

Kock, N. (2014). Advanced mediating effects tests, multi-group analyses, and measurement model assessments in PLS-based SEM. *International Journal of E-Collaboration*, 10(1), 1–13.

Laksmi, A. C., & Suciati, I. (2018). Factors Influencing the Intention to Obtain Accountant Certifications. *The Indonesian Journal of Accounting Research*, 21(3). <https://doi.org/10.33312/IJAR.399>

Lazarus, R. S., & Folkman, S. (1984). *Stress, Appraisal, and Coping*. Springer Publishing Company, Inc.

Leitner-Hanetseder, S., Lehner, O. M., Eisl, C., & Forstenlechner, C. (2021). A profession in transition: actors, tasks, and roles in AI-based accounting. *Journal of Applied Accounting Research*, 22(3), 539–556. <https://doi.org/10.1108/JAAR-10-2020-0201/FULL/PDF>

Lin, Y., & Sun, X. (2024). The Effect of Induced Regulatory Focus on Frontal Cortical Activity.

Behavioral Sciences, 14(4), 292. <https://doi.org/10.3390/BS14040292/S1>

Lupien, S. J., Maheu, F., Tu, M., Fiocco, A., & Schramek, T. E. (2007). The effects of stress and stress hormones on human cognition: Implications for the field of brain and cognition. *Brain and Cognition*, 65(3), 209–237. <https://doi.org/10.1016/J.BANDC.2007.02.007>

Luqman, A., Talwar, S., Masood, A., & Dhir, A. (2021). Does enterprise social media use promote employee creativity and well-being? *Journal of Business Research*, 131(November 2020), 40–54. <https://doi.org/10.1016/j.jbusres.2021.03.051>

Mappadang, A., Khusaini, K., Sinaga, M., & Elizabeth, E. (2022). Academic interest predicts undergraduate accounting students' academic performance: Multinomial logit evidence. *Cogent Business & Management*, 9(1). <https://doi.org/10.1080/23311975.2022.2101326>

Mellifont, D., Smith-Merry, J., & Scanlan, J. N. (2016). Pitching a Yerkes–Dodson curve ball?: A study exploring enhanced workplace performance for individuals with anxiety disorders. *Journal of Workplace Behavioral Health*, 31(2), 71–86. <https://doi.org/10.1080/15555240.2015.1119654>

Nieuwenhuis, S. (2024). Arousal and performance: revisiting the famous inverted-U-shaped curve. *Trends in Cognitive Sciences*, 28(5), 394–396. <https://doi.org/10.1016/j.tics.2024.03.011>

Novak, A., Žager, K., & Barišić, I. (2021). Innovation in accounting education: The impact of information technology on teaching methods. *Proceedings of the European Conference on Innovation and Entrepreneurship*, ECIE, 660–667. <https://doi.org/10.34190/EIE.21.142>

Petani, F. J., Ramírez, C., & Gendron, Y. (2021). Special issue on Digitalization, work, and professions. *Critical Perspectives on Accounting*, 79. <https://doi.org/10.1016/j.cpa.2021.102354>

Pratama, F. W., & Komariyah, E. F. (2023). Examining the Auditors' Acceptance of Big Data Analytics Technology Platform: Evidence from Government Auditors in Indonesia. *The Indonesian Journal of Accounting Research*, 26(2), 273–302. <https://doi.org/10.33312/IJAR.714>

Priyastiwi, P., Sriwidharmanely, S., & Halim, A. (2023). The Role of Religiousity in Mitigating the Effects of Technostress on Engaging in Academic Fraud during Accounting Online Learning. *Jurnal Akuntansi*, 13(3), 229–243. <https://doi.org/10.33369/jakuntansi.13.3.229-243>

Qi, C. (2019). A double-edged sword? Exploring the impact of students' academic usage of mobile devices on technostress and academic performance. *Behaviour & Information Technology*, 0(0), 1–18. <https://doi.org/10.1080/0144929X.2019.1585476>

Rasheed, R. A., Kamsin, A., & Abdullah, N. A. (2020). Challenges in the online component of blended learning: A systematic review. *Computers & Education*, 144, 103701.

<https://doi.org/10.1016/J.COMPEDU.2019.103701>

Raza, S. A., Qazi, W., Khan, K. A., & Salam, J. (2021). Social Isolation and Acceptance of the Learning Management System (LMS) in the Time of COVID-19 Pandemic: An Expansion of the UTAUT Model. *Journal of Educational Computing Research*, 59(2), 183–208.

https://doi.org/10.1177/0735633120960421/ASSET/IMAGES/LARGE/10.1177_0735633120960421-FIG2.JPG

Robey, D., Boudreau, M. C., & Rose, G. M. (2000). Information technology and Organizational learning: a review and assessment of research. *Accounting, Management and Information Technologies*, 10(2), 125–155. [https://doi.org/10.1016/S0959-8022\(99\)00017-X](https://doi.org/10.1016/S0959-8022(99)00017-X)

Saleem, F., Chikhaoui, E., & Malik, M. I. (2024). Technostress among students and the quality of online learning: the roles of the instructor and university support. *Frontiers in Education*, 9, 1309642. [https://doi.org/10.3389/FEDUC.2024.1309642/BIBTEX](https://doi.org/10.3389/FEDUC.2024.1309642)

Saleem, F., Malik, M. I., Qureshi, S. S., Farid, M. F., & Qamar, S. (2021). Technostress and Employee Performance Nexus During COVID-19: Training and Creative Self-Efficacy as Moderators. *Frontiers in Psychology*, 12, 595119. [https://doi.org/10.3389/FPSYG.2021.595119/BIBTEX](https://doi.org/10.3389/FPSYG.2021.595119)

Sarid, O., Anson, O., Yaari, A., & Margalith, M. (2004). Academic stress, immunological reaction, and academic performance among students of nursing and physiotherapy. *Research in Nursing & Health*, 27(5), 370–377. <https://doi.org/10.1002/nur.20028>

Schmidt, P. J., Riley, J., & Church, K. S. (2020). Investigating Accountants' Resistance to Move Beyond Excel and Adopt New Data Analytics Technology. *Accounting Horizons*, 34(4), 165–180. <https://doi.org/10.2308/HORIZONS-19-154>

Sheng, Z., & Fan, B. (2022). The double-edged sword effect of performance pressure on public employees: The mediation role of mission valence. *Frontiers in Psychology*, 13, 992071. <https://doi.org/10.3389/FPSYG.2022.992071>

Sonnentag, S., & Meier, L. L. (2024). Gain and loss cycles revisited: What to consider when testing key assumptions of conservation of resources theory. *Journal of Management Scientific Reports*, 2(2), 154–167. <https://doi.org/10.1177/27550311241247833>

Spiegel, S., Grant-Pillow, H., & Higgins, E. T. (2004). How regulatory fit enhances motivational strength during goal pursuit. *European Journal of Social Psychology*, 34(1), 39–54. <https://doi.org/https://doi.org/10.1002/ejsp.180>

Sriwidharmanely, S., Sumiyana, S., Mustakini, J. H., & Nahartyo, E. (2022). Encouraging positive emotions to cope with the adverse effects of technostress: insights from the broaden-and-build theory. *Behaviour & Information Technology*, 41(10), 2201–2214. <https://doi.org/10.1080/0144929X.2021.1955008>

Suddaby, R., Saxton, G. D., & Gunz, S. (2015). Twittering change: The institutional work of

domain change in accounting expertise. *Accounting, Organizations and Society*, 45, 52–68. <https://doi.org/10.1016/j.aos.2015.07.002>

Sumiyana, S., & Sriwidharmanely, S. (2020). Mitigating the harmful effects of technostress: inducing chaos theory in an experimental setting. *Behaviour & Information Technology*, 39(10), 1079–1093. <https://doi.org/10.1080/0144929X.2019.1641229>

Tarafdar, M., Cooper, C. L., & Stich, J. F. (2019). The technostress trifecta - techno eustress, techno distress, and design: Theoretical directions and an agenda for research. *Information Systems Journal*, 29(1), 6–42. <https://doi.org/10.1111/isj.12169>

Tarafdar, M., Tu, Q., & Ragu-Nathan, T. S. (2010). Impact of Technostress on End-User Satisfaction and Performance. *Journal of Management Information Systems*, 27(3), 303–334. <https://doi.org/10.2753/MIS0742-1222270311>

Tseng, H. C., & Kang, L. M. (2008). How does regulatory focus affect uncertainty towards organizational change? *Leadership and Organization Development Journal*, 29(8), 713–731. <https://doi.org/10.1108/01437730810916659>

Tu, Y., Wang, H. J., Jiang, L., De Witte, H., & Long, L. (2024). Tasks at hand or more challenges: The roles of regulatory focus and job insecurity in predicting work behaviours. *Journal of Occupational and Organizational Psychology*, 97(4), 1632–1658. <https://doi.org/10.1111/JOOP.12533>

Tuan, L. T. (2021). Employee mindfulness and proactive coping for technostress in the COVID-19 outbreak: The roles of regulatory foci, technostress, and job insecurity. *Computers in Human Behavior*, 129, 107148. <https://doi.org/10.1016/J.CHB.2021.107148>

Upadhyaya, P., & Vrinda. (2021). Impact of technostress on academic productivity of university students. *Education and Information Technologies*, 26(2), 1647–1664. <https://doi.org/10.1007/s10639-020-10319-9>

Vallone, F., Galvin, J., Cattaneo Della Volta, M. F., Akhtar, A., Chua, S., Ghio, E., Giovazolias, T., Kazakou, Z., Kritikou, M., Koutra, K., Kovacevic, S., Lee-Treweek, G., Mašková, I., Mavritsaki, E., Nastic, J., Plassova, M., Stuchlíková, I., & Zurlo, M. C. (2023). Technostress and academic motivation: direct and indirect effects on university students' psychological health. *Frontiers in Psychology*, 14, 1211134. <https://doi.org/10.3389/FPSYG.2023.1211134/FULL>

Wang, X., Li, Z., Ouyang, Z., Xu, Y., Fiorilli, C., Gay, P., & Romano, L. (2021). The Achilles Heel of Technology: How Does Technostress Affect University Students' Well-being and Technology-Enhanced Learning? *International Journal of Environmental Research and Public Health* 2021, Vol. 18, Page 12322, 18(23), 12322. <https://doi.org/10.3390/IJERPH182312322>

Winterheld, H., & Simpson, J. (2011). Seeking Security or Growth: A Regulatory Focus Perspective on Motivations in Romantic Relationships. *Journal of Personality and Social Psychology*, 101, 935–954. <https://doi.org/10.1037/a0025012>

Zimmerman, B. J. (2002). Becoming a Self-Regulated Learner: An Overview. *Theory Into Practice*, 41(2), 64–70. <https://doi.org/10.1207/s15430421tip4102>

Appendices

Table 1.
Outer Loading

Indicators	Academic Performance	Regulatory Focus Preventive	Regulatory Focus Promotive	Technostress	Information
X1.1				0,840	Valid
X1.2				0,820	Valid
X1.3				0,782	Valid
X1.4				0,812	Valid
X1.5				0,809	Valid
Y1.1	0,959				Valid
Y1.2	0,960				Valid
Z1.1		0,951			Valid
Z1.2		0,940			Valid
Z1.3		0,934			Valid
Z2.1			0,783		Valid
Z2.2			0,907		Valid
Z2.3			0,925		Valid

Table 2.
Average variance extracted (AVE)

	Average variance extracted (AVE)	Information
Academic Performance	0,921	Valid
Regulatory Focus Preventive	0,887	Valid
Regulatory Focus Promotive	0,764	Valid
Technostress	0,661	Valid

Table 3.
Cross Loading

	Academic Performance	Regulatory Focus Preventive	Regulatory Focus Promotive	Technostress
X1.1	0,349	0,265	0,062	0,840
X1.2	0,190	0,080	0,013	0,820
X1.3	0,157	0,063	-0,036	0,782
X1.4	0,166	0,038	-0,027	0,812
X1.5	0,414	0,407	0,341	0,809
Y1.1	0,959	0,653	0,554	0,306
Y1.2	0,960	0,644	0,517	0,396
Z1.1	0,643	0,951	0,744	0,234
Z1.2	0,667	0,940	0,724	0,284
Z1.3	0,595	0,934	0,691	0,274
Z2.1	0,348	0,530	0,783	0,137
Z2.2	0,491	0,717	0,907	0,088
Z2.3	0,581	0,729	0,925	0,166

Table 4.
Cronbach's Alpha and Composite Reliability

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability
Academic Performance	0,914	0,915	0,959
Regulatory Focus Preventive	0,936	0,939	0,959
Regulatory Focus Promotive	0,847	0,898	0,906
Technostress	0,883	0,956	0,907

Table 5.
Total Output Effects

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
Technostress -> Academic Performance	0,151	0,150	0,062	2,440	0,015
Regulatory Focus Preventive x Technostress -> Academic Performance	-0,249	-0,258	0,073	3,418	0,001
Regulatory Focus Promotive x technostress -> Academic Performance	0,193	0,198	0,092	2,104	0,035

Research Instrument
Respondent Data

1. Name (Initial)/Student Identification Number
2. University Origin
3. Semester
 - 1
 - 2
 - 3
 - 4
 - 5
 - 6
 - 7
 - 8
 - Others _____
4. Gender
 - Man
 - Woman
5. Education Level
 - S1/D4 Accounting (Accounting Undergraduate)
 - D3 Accounting Vocational Degree
6. Phone Number/WhatsApp (active)

Stressors

1. What technologies (hardware) do you use to support learning and assignments? *Checklist
 - Computer
 - Laptop
 - Mobile
 - Printer
 - Projector
 - Camera
 - Others mention...
2. What online learning apps have you used? *Checklist
 - Zoom
 - Gmeet
 - Microsoft Teams
 - Google Classroom
 - E-learning by your institution
 - Others mention.....
3. What accounting technology (software) do you use to support learning and assignments?
*Checklist
 - MYOP
 - JOURNAL
 - ACCURATE
 - READY
 - SAP
 - BEE ACCOUNTING
 - ZAHIR
 - Others mention...

Academic Performance

Please write down your GPA score.

1. GPA Academic years 2020/2021
2. GPA Academic years 2021/2022

The answer depends on your circumstances during the online learning method (online), which began in 2020 during the COVID-19 pandemic and continued with the blended learning method, as well as your responses when using technology for learning and completing assignments.

Please answer based on your situation, including the online learning method that began in 2020 during the COVID-19 pandemic and continued with blended learning, as well as your experiences with using technology for learning and completing assignments.

Notes:

1. Totally Disagree
2. Disagree
3. Moderately Agree
4. Agree
5. Totally Agree

The technology referred to in this study supports the learning process of accounting students, particularly in blended learning.

Technostress

The existence of technology forces me to complete tasks faster.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

The existence of technology forces me to complete more tasks.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

The existence of technology forces me to do tasks with very tight deadlines.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

I was compelled to adjust my study habits to accommodate new technology.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

I face an increasingly complex task as technology advances.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

I do not spend much time with my family due to technology.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

The existence of technology makes me feel like I am doing chores, even during the holidays.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

I had to cancel my vacations and weekends to keep up with the latest technology.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

I feel like my personal life is being attacked by technology.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

I often struggle with operating technology and learning new things.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

It took me a long time to understand and use the new technology.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

I felt like I did not have enough time to learn and improve my tech skills.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

I found my friends knew more about computer technology than I did.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

I often find it too complicated to understand and use new technology.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

I believe that academic performance is threatened solely by new technology.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

I must continually update my skills to prevent poor performance.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

A classmate who had recently acquired tech skills threatened me.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

I did not share my knowledge with my classmates for fear of poor performance.

1 2 3 4 5

Sangat Tidak Setuju (Totally Disagree) Sangat Setuju (Totally Agree)

I did not share my knowledge with my classmates for fear of poor performance.

1 2 3 4 5

Sangat Tidak Setuju (Totally Disagree) Sangat Setuju (Totally Agree)

There are always new developments in the technology I use on my campus.

1 2 3 4 5

Sangat Tidak Setuju (Totally Disagree) Sangat Setuju (Totally Agree)

Computer software is frequently updated at my campus.

1 2 3 4 5

Sangat Tidak Setuju (Totally Disagree) Sangat Setuju (Totally Agree)

Computer hardware at my institute undergoes frequent upgrades.

1 2 3 4 5

Sangat Tidak Setuju (Totally Disagree) Sangat Setuju (Totally Agree)

There is often an increase in computer networks on my campus.

1 2 3 4 5

Sangat Tidak Setuju (Totally Disagree) Sangat Setuju (Totally Agree)

Preventive Focus Regulation

I focused on completing my coursework accurately to enhance the security of my grades.

1 2 3 4 5

Sangat Tidak Setuju (Totally Disagree) Sangat Setuju (Totally Agree)

In studying, I often focus on completing tasks that align with my core values.

1 2 3 4 5

Sangat Tidak Setuju (Totally Disagree) Sangat Setuju (Totally Agree)

Value security is an important factor for me when completing tasks.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

In studying, I focus on completing the tasks assigned to me.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

Fulfilling college assignments is very important to me.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

In my studies, I strive to fulfil the responsibilities and tasks assigned to me by my lecturer.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

I did everything I could to avoid low marks.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

I focus my attention on avoiding low-task grades.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

I was cautious to avoid the potential for low grades in my learning.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

Promotive Focus Regulation

I take opportunities (actively asking, discussing, and getting extra value) to maximize my goals for good grades.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

I tend to take risks in studying to achieve satisfactory academic grades.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

If I had the opportunity to answer a difficult question in exchange for an A (perfect) grade, I would accept it.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

If the grade of my previous assignment is low, I will strive to improve on the next task or explore ways to maximize the final result.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

The opportunity to grow is important when studying and working on assignments.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

I focus on completing tasks to get the best grades.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

I spent considerable time thinking about how to fulfil my ideals.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

A clear picture of my aspirations influences my study priorities.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

In learning, I am motivated by my hopes and ideals.

1 2 3 4 5

Sangat Tidak Setuju (Totally
Disagree) Sangat Setuju (Totally Agree)

Respondent Profile

Demographics		Frequency	Percentage
Gender	Man	137	69,2%
	Women	61	30,8%
Total		198	100%
University Origin	State University	146	74%
	Private University	52	26%
Total		198	100%
Education Level	Bachelor of Accounting	177	89,4%
	Diploma of Accounting	21	10,6%
Total		198	100%
Semester	Fourth Semester	58	29,3%
	Sixth Semester	75	37,9%
	Seventh Semester	4	2,0%
	Eight Semesters	58	29,3%
	Others	3	1,5%
Total		198	100%
	Computer	65	9,2%
	Laptop	191	26,9%
What technologies (hardware) do you use to support learning and assignments?	Mobile	187	26,4%
	Tablets	26	3,7%
	Printer	103	14,5%
	Projector	51	7,2%
	Camera	84	11,8%
	Other	2	0,3%
Total		709	100%
	WhatsApp	193	15,0%
	Telegram	158	12,3%
	Gmeet	168	13,0%
	Zoom	187	14,5%
	Microsoft Teams	44	3,4%
	Google Classroom	157	12,2%
Examples of applications or online learning media that have been used.	E-learning by your institution	134	10,4%
	YouTube	133	10,3%
	Quiziz	109	8,5%
	Model Fedena	2	0,2%
	Other	4	0,3%

Demographics	Frequency	Percentage
Total	1289	100%
MYOP	94	15,4%
JOURNAL	114	18,6%
ACCURATE	106	17,3%
READY	63	10,3%
SAP	29	4,7%
BEE ACCOUNTING	22	3,6%
ZAHIR	15	2,5%
Microsoft Excel	169	27,6%
Total	612	100%