



Academic Self-Efficacy and Digital Stress as Predictors of Academic Resilience among Undergraduate Students in Davao City, Philippines

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ABSTRACT

Academic self-efficacy, digital stress, and academic resilience are important constructs in guidance and counseling, yet their relationships remain underexplored. This study employed a cross-sectional quantitative design to examine the associations among academic self-efficacy, digital stress, and academic resilience among undergraduate students. The sample consisted of 103 students enrolled in private colleges in Davao City, Philippines. Data were collected using the Academic Self-Efficacy Scale (ASE), Digital Stress Scale (DSS), and Academic Resilience Scale (ARS-30). Pearson correlation and multiple linear regression analyses were conducted to examine relationships and estimate the extent to which academic self-efficacy and digital stress statistically predicted academic resilience. Results indicated that academic self-efficacy was positively associated with academic resilience ($r = .32, p < .001$), whereas digital stress was negatively associated with academic resilience ($r = -.32, p < .001$). These findings highlight the importance of strengthening academic self-efficacy and addressing digital stressors to support students' adaptive functioning in higher education contexts.

Keywords: Academic Resilience, Academic Self-efficacy, Digital Stress, Undergraduate Students

INTRODUCTION

The transition to digitally mediated learning during the COVID-19 pandemic substantially reshaped higher education systems worldwide. Although emergency remote instruction was initially implemented to mitigate learning loss, evidence from health- and disaster-related crises indicates that their academic and psychological effects often persist beyond the immediate period of disruption (Cho et al., 2021). In contemporary higher education, intensified academic demands, increasing reliance on digital technologies, and continuous online engagement have contributed to emerging forms of academic stress, including digital fatigue. These stressors have remained salient even after the resumption of face-to-face or hybrid learning modalities (Noviekayati & Masul Hadi, 2025).

Academic stress among university students has become a pervasive concern, with implications for academic engagement, psychological well-being, and persistence in higher education. Structural transformations in academic environments such as heightened performance expectations, technologically mediated instruction, and reduced interpersonal interaction have amplified traditional academic pressures. Empirical evidence across regions indicates that a substantial proportion of university students experience



moderate to high levels of academic stress, frequently exceeding their adaptive capacities and undermining effective coping (Noviekayati & Masul Hadi, 2025). Such conditions have been associated with diminished academic performance, disengagement, and increased risk of dropout. In response to these challenges, academic resilience has been identified as a critical factor supporting students' ability to adapt and persist under adverse academic conditions. Academic resilience refers to the capacity to maintain or regain academic functioning despite stressors, setbacks, or prolonged academic demands. Prior studies suggest that students with higher levels of academic resilience demonstrate greater persistence, adaptive coping, and academic achievement, whereas lower resilience is associated with academic failure and attrition (Wulandari & Istiani, 2021). As student dropout and academic disengagement continue to pose challenges for higher education institutions, identifying factors that contribute to academic resilience remains a priority. Concerns related to student mental health further highlight the importance of this line of inquiry. Young adults aged 15–29 years represent one of the most vulnerable groups for mental health-related morbidity and mortality worldwide (World Health Organization, 2020). Universities have reported a steady increase in the utilization of counseling and psychological services over the past decade (Center for Collegiate Mental Health, 2020). In the Philippine context, rising levels of stress, burnout, and suicide-related concerns among college students have been documented, particularly during and following the COVID-19 pandemic (De Villa, 2022). These patterns underscore the interconnectedness of academic stress, psychological well-being, and students' capacity for academic resilience.

Despite the expanding body of literature on academic resilience, important gaps remain. Existing research has predominantly examined resilience in relation to general academic stressors, with limited attention to digital stress as a distinct and context-specific risk factor in technologically intensive learning environments. Moreover, while academic self-efficacy defined as students' beliefs in their capability to successfully perform academic tasks has been consistently linked to academic motivation and performance, its role in fostering academic resilience under conditions of heightened digital demands remains insufficiently explored. Notably, few empirical studies have simultaneously examined academic self-efficacy and digital stress as predictors of academic resilience, particularly among undergraduate students in developing country contexts. To address these gaps, the present study investigates the predictive roles of academic self-efficacy and digital stress on academic resilience among undergraduate students. By examining these relationships, the study seeks to contribute to a more nuanced understanding of resilience in contemporary higher education settings. The findings may inform the development of targeted interventions and institutional strategies aimed at enhancing student resilience, academic persistence, and psychological well-being.

REVIEW OF RELATED LITERATURE

Academic Self-efficacy

Academic self-efficacy refers to students' beliefs in their ability to successfully perform academic tasks and overcome learning challenges (Bandura, 1997). It is widely recognized as a crucial psychological resource that supports motivation, persistence, and academic success. Recent research highlights that academic self-efficacy continues to play a protective role in students' overall functioning, particularly in technologically mediated learning environments.

A study involving university students found that resilience, social support, and academic self-efficacy collectively helped reduce emotional distress and sustain mental health, emphasizing self-efficacy as a key factor in students' psychological stability (Cassaretto et al., 2024). This suggests that students who believe in their academic capabilities are better equipped to cope with academic pressures and environmental demands.

Similarly, research in medical education identified digital literacy as an important contributor to academic confidence, noting that students with stronger technological competencies demonstrated higher academic self-efficacy and fewer maladaptive behaviors such as procrastination (Yuan et al., 2024). As higher education increasingly integrates digital platforms, the relationship between technological competence and self-belief becomes more relevant.

Further evidence from post-pandemic virtual learning environments shows that mobile self-efficacy and digital skills influence how students respond to academic stress and remain engaged in their coursework (Arbulú Pérez Vargas et al., 2024). These findings reinforce the view that academic self-efficacy is not only an internal belief system but also shaped by students' ability to navigate modern learning contexts.

Academic Resilience

Academic resilience refers to students' capacity to adapt positively and persist despite academic adversity (Cassidy, 2016). It involves emotional regulation, cognitive flexibility, and sustained motivation when confronted with challenges.

Recent qualitative research examining students in digital learning environments found that resilience is enacted through processes such as cognitive reappraisal, mindfulness, and self-awareness, allowing learners to reinterpret setbacks as opportunities for growth and maintain motivation. Emotional strain often experienced as frustration or isolation was shown to trigger regulatory strategies that ultimately strengthened persistence (Silaen, 2025). Additionally, resilience has been identified as a protective factor that supports mental health among university students undergoing major educational transitions (Cassaretto et al., 2024). Students with higher resilience were better able to withstand uncertainty and academic disruption, underscoring its importance in contemporary education.

Relationship Between Academic Self-Efficacy and Academic Resilience

The relationship between academic self-efficacy and resilience has gained increasing scholarly attention, with emerging evidence suggesting that both constructs operate as complementary psychological resources. Research demonstrates that academic self-efficacy contributes to students' psychological protection by reducing distress and supporting overall well-being (Cassaretto et al., 2024). Because resilient students rely on confidence in their abilities when facing setbacks, self-efficacy may strengthen their capacity to recover from academic difficulties. Moreover, studies indicate that competencies such as digital skills and self-efficacy influence how students manage stress and maintain engagement, processes closely associated with resilient functioning (Arbulú Pérez Vargas et al., 2024). Students who trust their academic capabilities are more likely to remain persistent, regulate their learning strategies, and adapt effectively to academic challenges.

Digital Stress

Digital stress, frequently conceptualized as technostress, refers to the psychological strain resulting from individuals' inability to cope effectively with the demands associated with digital technologies (Ragu-Nathan et al., 2008). In academic environments, digital stress may arise from constant online connectivity, information overload, multitasking demands, and expectations for immediate responsiveness. The increased integration of digital platforms into teaching and learning has intensified these stressors, particularly among higher education students.

Studies indicate that elevated levels of digital stress are associated with adverse academic and psychological outcomes, including increased anxiety, cognitive fatigue, reduced concentration, and



academic burnout (Tarafdar et al., 2019). Prolonged exposure to digital stressors may impair students' emotional regulation and coping capacities, thereby negatively affecting learning experiences and academic performance. Although digital technologies offer educational benefits, unmanaged digital demands may overwhelm students' adaptive resources, making digital stress a salient risk factor within contemporary academic contexts (Awang Kader et al., 2022).

Relationship Between Digital Stress and Academic Resilience

Recent research provides strong empirical support for the negative consequences of digital stress on resilience. A structural equation modeling study involving over 2,000 undergraduate students revealed that digital fatigue significantly and negatively affected academic resilience, indicating that higher levels of digital exhaustion impair students' ability to recover from academic setbacks. The study further explained that fatigue-induced cognitive overload, reduced concentration, and emotional exhaustion diminish intrinsic motivation and sustained effort both essential components of resilient behavior (An et al., 2025). These results suggest that prolonged digital engagement may weaken students' adaptive capacity when confronted with academic adversity.

However, the impact of digital stress on academic resilience appears to be influenced by students' personal resources. Evidence suggests that students with strong psychological resources, such as high academic self-efficacy, may be better able to manage digital stress and maintain resilience (Saleem & Zia, 2024). This indicates that digital stress may function as a risk factor whose effects vary depending on the presence of protective factors.

Synthesis

Research has often examined academic self-efficacy, academic resilience, and digital stress separately, with limited studies exploring self-efficacy as a protective factor and digital stress as a risk factor within a single predictive framework. This gap is more evident in rapidly digitalizing higher education contexts in developing countries like the Philippines, where students face increasing technological demands. Accordingly, this study investigates academic self-efficacy and digital stress as predictors of academic resilience to provide a more integrated understanding of students' capacity to adapt and persist in digitally intensive learning environments.

Research Objectives

To determine the extent to which academic self-efficacy and digital stress predict academic resilience among undergraduate students.

1. To identify the levels of academic self-efficacy and digital stress, and academic resilience.
2. To determine the significant relationship between academic self-efficacy and digital stress with academic resilience.
3. To examine whether academic self-efficacy and digital stress predict academic resilience.

Theoretical Framework

The present study is grounded in Social Cognitive Theory (Bandura, 1997), Stress-Coping Theory (Lazarus & Folkman, 1984), and established academic resilience frameworks (Martin & Marsh, 2006). These perspectives are integrated to explain how students' personal beliefs and technology-related stress

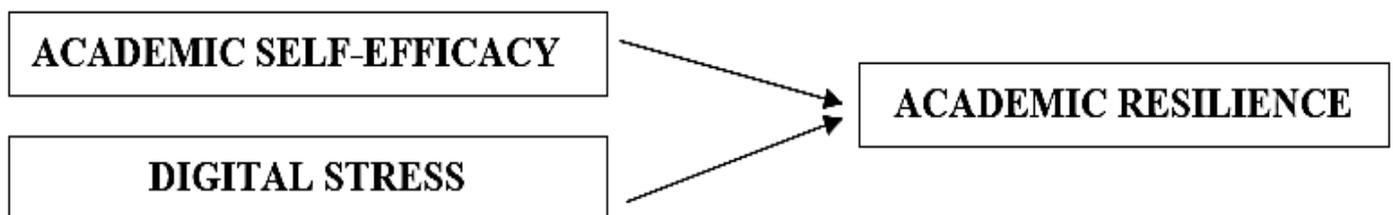
experiences jointly shape their capacity to adapt and persist in academically demanding environments. According to Social Cognitive Theory, self-efficacy refers to individuals' beliefs in their capability to organize and execute actions required to manage specific tasks (Bandura, 1997). In academic settings, academic self-efficacy influences how students interpret learning demands, regulate effort, and persist when encountering challenges. Students with stronger self-efficacy beliefs are more likely to view academic difficulties as controllable, employ adaptive learning strategies, and maintain engagement under pressure. Within this framework, academic self-efficacy functions as a psychological resource that enhances students' perceived coping capacity when confronted with academic demands.

Stress–Coping Theory conceptualizes stress as a transactional process arising from the appraisal of environmental demands relative to available coping resources (Lazarus & Folkman, 1984). In technology-mediated learning environments, students are exposed to digital demands such as continuous connectivity, information overload, platform complexity, and rapid task transitions. These conditions may generate digital stress when students perceive technological demands as exceeding their coping resources. Elevated digital stress can deplete cognitive and emotional resources, disrupt concentration, and reduce effective coping, thereby posing a risk to adaptive academic functioning.

Academic resilience frameworks conceptualize resilience as an adaptive outcome that emerges from the interaction between protective resources and contextual stressors (Martin & Marsh, 2006). From this perspective, resilience reflects students' capacity to sustain or regain academic functioning despite adversity. Integrating Social Cognitive Theory and Stress–Coping Theory, academic resilience may be understood as the result of how students mobilize internal resources to manage external demands. Academic self-efficacy serves as a protective factor that strengthens coping capacity, whereas digital stress represents a contextual risk factor that challenges coping resources. Within the unified framework guiding this study, academic self-efficacy influences students' appraisal of academic and technological demands by enhancing perceived control and coping capability. In contrast, digital stress reflects perceived demands that may exceed available coping resources and hinder adaptive functioning. Academic resilience is conceptualized as the outcome of these concurrent processes: resilience is strengthened when coping resources are robust and weakened when environmental demands overwhelm available resources.

Conceptual Framework

Figure 1. Conceptual Model of Academic Self-Efficacy and Digital Stress as Predictors of Academic Resilience.



METHODOLOGY

Research Design

This study employed a cross-sectional quantitative design to examine the associations among academic self-efficacy, digital stress, and academic resilience among undergraduate students. Data were collected at a single point in time, allowing identification of patterns of association without establishing causal relationships. Pearson correlation and multiple linear regression analyses were used to estimate the extent



to which academic self-efficacy and digital stress statistically predicted academic resilience and explained variance in the outcome variable. Findings are therefore interpreted as associative and predictive rather than causal.

Participants

The sample consisted of 103 undergraduate students enrolled in several private colleges in Davao City, Philippines, selected through non-probabilistic purposive sampling. Eligibility criteria included being at least 18 years of age, currently enrolled, providing informed consent, and having regular access to digital devices and the internet.

Participants ranged in age from 18 to 24 years and above ($M = 19.40$, $SD = 1.83$). The sample was predominantly female (68.0%), with males comprising 32.0% of participants. In terms of age distribution, 52.4% were 18–19 years old, 34.0% were 20–21 years old, 4.9% were 22–23 years old, and 8.7% were 24 years or older. Regarding year level, 16.5% were first-year students, 71.8% were second-year students, 5.8% were third-year students, and 5.8% were fourth-year students.

An a priori power analysis guided by Cohen's (1992) recommendations indicated that the sample size was sufficient to detect moderate effect sizes in correlation and multiple regression analyses at an acceptable level of statistical power. Because participants were drawn from private colleges in a single geographic location using non-probability sampling, the findings should be interpreted with caution and may not be generalizable to the broader undergraduate population.

Instruments

Data were collected electronically using three standardized self-report questionnaires measuring academic self-efficacy, digital stress, and academic resilience. Clear instructions were provided within the digital survey, and contact information was made available to address participant inquiries. The data collection period lasted two weeks in January 2026, during which reminder notices were distributed to support response completion. Three standardized self-report instruments were used: The first instrument was the Academic Self-Efficacy Scale (ASE) adapted from Bashir, L., & Gupta, S. (2019). A 20-item measure assessing students' beliefs in their academic capabilities across four domains: self-confidence, efficacy expectation, positive attitude, and outcome expectation. Responses are recorded on a 5-point Likert scale. The second instrument used was Digital Stress Scale (DSS) adapted from Hall (2021), A 24-item instrument assessing perceived stress associated with digital technology use, particularly mobile and social media engagement. The DSS is appropriate for adolescent and adult populations. The third instrument was the Academic Resilience scale (ARS-30), adapted from Cassidy, S. (2016) A 30-item measure assessing cognitive, emotional, and behavioral responses to academic adversity, providing an index of academic resilience processes rather than outcomes.

Data Analysis

Data were screened for completeness and accuracy prior to analysis. Descriptive statistics (means, standard deviations, and frequencies) summarized participant demographics and study variables. Normality was assessed using skewness, kurtosis, histograms, Q–Q plots, and Shapiro–Wilk tests. Although Shapiro–Wilk indicated deviations from normality for Academic Self-Efficacy and Academic Resilience ($p < .001$), skewness and kurtosis values were within acceptable ranges (± 2), supporting the use of parametric tests given the sample size ($N = 103$). Linearity and homoscedasticity assumptions were examined and found satisfactory.



Pearson product–moment correlation was used to assess the strength and direction of associations among Academic Self-Efficacy, Digital Stress, and Academic Resilience. Multiple linear regression was conducted to examine the extent to which Academic Self-Efficacy and Digital Stress statistically predicted Academic Resilience and the proportion of variance explained. Effect sizes (correlation coefficients and R^2) are reported alongside significance values to aid interpretation. Given the cross-sectional design, results are interpreted as indicative of associative and predictive relationships rather than causal effects.

Ethical Considerations

Institutional permission was obtained prior to data collection. Participation was voluntary, informed consent was secured from all respondents, and confidentiality and anonymity were maintained throughout the study.

RESULTS

Table 1. The demographic characteristics of the participants.

Characteristics	Frequency	Percentage
Sex		
Female	70	68.00%
Male	33	32.00%
Age		
18-19	54	52.40%
20-21	35	34.00%
22-23	5	4.90%
24 and above	9	8.70%
Year Level		
First Year	17	16.50%
Fourth Year	6	5.80%
Second Year	74	71.80%
Third Year	6	5.80%
N= 103		

Table 1 presents the demographic characteristics of the 103 undergraduate participants. The majority were female (68.0%), while males accounted for 32.0%. Most respondents were aged 18–19 (52.4%), followed by those aged 20–21 (34.0%), indicating that the sample largely consisted of younger undergraduate students. The mean age of the participants was ($M = 19.4$), ($SD = 1.83$). In terms of year level, second-year students comprised the largest group (71.8%), with smaller representations from first-year (16.5%), third-year (5.8%), and fourth-year students (5.8%).

Table 2. Differences in Academic Self-efficacy, Digital Stress, and Academic Resilience by Sex

Variables	Sex	n	Mean	SD	t	p	Cohen's d
Academic Self-efficacy	Female	70	3.7	0.617	0.269	0.789	0.0568
	Male	33	3.66	0.612			
Digital Stress	Female	70	3.02	0.814	0.12	0.905	0.0253
	Male	33	3	0.82			
Academic Resilience	Female	70	3.82	0.737	3.073	0.003	0.649
	Male	33	3.32	0.812			

Independent-samples t-tests were conducted to examine differences in academic self-efficacy, digital stress, and academic resilience by sex. Results indicated no significant differences between female and male students in academic self-efficacy, $t(101) = 0.27, p = .789, d = 0.06$, or digital stress, $t(101) = 0.12, p = .905, d = 0.03$. However, a statistically significant difference was found in academic resilience, with female students reporting higher levels of resilience ($M = 3.82, SD = 0.74$) than male students ($M = 3.32, SD = 0.81$), $t(101) = 3.07, p = .003, d = 0.65$, indicating a moderate effect size.

Table 3. Descriptive Statistics for Academic Self-efficacy, Digital Stress, and Academic Resilience.

Variables	SD	Mean	Interpretation
Academic Self-efficacy	0.613	3.69	High
Digital Stress	0.812	3.02	Moderate
Academic Resilience	0.792	3.66	High

Table 3 summarizes the descriptive statistics for the primary study variables. Students reported high levels of academic self-efficacy ($M = 3.69, SD = 0.613$) and academic resilience ($M = 3.66, SD = 0.792$), suggesting that respondents generally perceived themselves as capable of managing academic demands and adapting to challenges. Digital stress was observed at a moderate level ($M = 3.02, SD = 0.812$), indicating that while students experience stress related to digital academic requirements, it does not appear to be

excessively elevated. Overall, the descriptive findings portray a student population characterized by relatively strong academic confidence and resilience alongside manageable levels of digital stress.

Table 4. Pearson Correlation Matrix for Academic Self-efficacy, Digital Stress, and Academic Resilience

Variables	Academic Resilience		
	Pearson's r	P-value	Interpretation
Academic Self-efficacy	0.324***	<.001	Significant
Digital Stress	-0.320***	<.001	Significant

Pearson product–moment correlations were conducted to examine relationships among academic self-efficacy, digital stress, and academic resilience. Prior to analysis, preliminary tests were conducted to examine the distribution of the study variables. Although the Shapiro–Wilk test indicated significant deviations from normality for academic self-efficacy and academic resilience, skewness and kurtosis values for all variables were within acceptable ranges (± 2), indicating approximate normal distributions. Given these distribution characteristics and the sample size, Pearson’s product–moment correlation was deemed appropriate.

Results indicated that academic self-efficacy was positively associated with academic resilience, ($r = .32, p < .001$), indicating a moderate effect size. Digital stress was negatively associated with academic resilience, ($r = -.32, p < .001$), also reflecting a moderate effect size.

Table 5. Multiple Linear Regression Predicting Academic Resilience

Model Coefficients - Academic Resilience							
Predictor	Unstandardized Coefficients		Standardized Coefficients	t	p	95% Confidence Interval for B	
	B	SE	β			Lower	Upper
Academic Self-efficacy	0.331	0.1231	0.256	2.69	.008	0.0865	0.5749
Digital Stress	-0.243	0.0928	-0.249	-2.62	.010	-0.4276	-0.0592

R = .403, R² = .163, F (2,100) = 9.71, p < .001.

To examine whether academic self-efficacy and digital stress statistically predicted academic resilience, a multiple linear regression analysis was conducted. The overall regression model was statistically significant, $F = 9.71, p < .001$, explaining 16.3% of the variance in academic resilience ($R^2 = 0.163$). This indicates modest explanatory power, suggesting that additional factors not examined in this study may also contribute to academic resilience. Academic self-efficacy emerged as a significant positive predictor of academic resilience ($B = 0.331, SE = 0.123, 95\% CI = 0.0865, 0.5749, p = .008$), indicating that higher

levels of self-efficacy were associated with higher resilience scores. Conversely, digital stress was a significant negative predictor ($B = -0.243$, $SE = 0.093$, $95\% \text{ CI} = -0.4276, -0.0592$, $p = .010$), suggesting that greater digital stress was associated with lower resilience. Taken together, the findings indicate that academic self-efficacy and digital stress are significant statistical predictors of academic resilience. However, given the cross-sectional design, these results should be interpreted as associative rather than causal relationships.

DISCUSSION

The present study examined the relationships among academic self-efficacy, digital stress, and academic resilience among undergraduate students. Overall, students reported high levels of academic self-efficacy and academic resilience, alongside moderate levels of digital stress. Academic self-efficacy demonstrated a positive association with academic resilience, whereas digital stress demonstrated a negative association. Both variables emerged as statistically significant predictors of academic resilience, with moderate effect sizes ($r \approx .32$), and together explained 16.3% of the variance in resilience. Additionally, female students reported significantly higher academic resilience than male students, while no sex differences were observed in academic self-efficacy or digital stress.

Consistent with Social Cognitive Theory, academic self-efficacy demonstrated a positive and statistically significant association with academic resilience. Students who reported stronger beliefs in their academic capabilities also reported greater adaptive capacity when facing academic challenges. Academic self-efficacy remained a significant predictor even when digital stress was statistically controlled, indicating that confidence in one's academic abilities was independently associated with resilience levels. According to Bandura (1997), self-efficacy shapes how individuals interpret demands, regulate effort, and sustain persistence under pressure. Within the present findings, students with higher academic self-efficacy likely appraised academic difficulties as more manageable, thereby reporting stronger resilience. Recent empirical research supports this interpretation, demonstrating that self-efficacy is closely linked to adaptive coping, sustained engagement, and psychological well-being in higher education contexts (Cassaretto et al., 2024; Yuan et al., 2024). In digitally mediated learning environments, where students must independently regulate learning and navigate technological systems, self-efficacy is particularly relevant to adaptive functioning (Arbulú Pérez Vargas et al., 2024). Although academic self-efficacy significantly predicted resilience in the statistical model, the findings indicate association rather than causation.

Digital stress demonstrated a negative and statistically significant association with academic resilience. Students who reported higher levels of digital stress reported lower levels of resilience. From the perspective of Stress-Coping Theory (Lazarus & Folkman, 1984), stress arises when environmental demands are appraised as exceeding available coping resources. In technology-mediated learning environments, demands such as continuous connectivity, information overload, and rapid task transitions may tax cognitive and emotional resources. The present findings indicate that when digital demands were perceived as burdensome, students reported lower adaptive capacity. This interpretation aligns with recent research showing that digital overload and sustained online engagement are associated with mental strain, emotional exhaustion, and reduced adaptive functioning (Awang Kader et al., 2022; An et al., 2025). Furthermore, Sharma and Nigam (2025) demonstrated that digital age influences including social media exposure, academic pressure, and digital literacy were significantly associated with undergraduate students' mental health outcomes. The present study extends this literature by demonstrating that digital stress is also statistically associated with academic resilience, suggesting that digital strain may coincide not only with mental health challenges but also with reduced adaptive academic functioning.

When interpreted within academic resilience frameworks (Martin & Marsh, 2006), the findings support the view that resilience reflects the dynamic interaction between protective resources and contextual stressors. Academic self-efficacy functioned as a protective psychological resource associated with stronger

resilience, whereas digital stress operated as a contextual risk factor associated with weaker resilience. The regression model explained 16.3% of the variance in academic resilience, indicating modest explanatory power. This suggests that academic resilience is a multidimensional construct shaped by a broader constellation of psychological, social, and contextual influences beyond academic self-efficacy and digital stress alone. Variables such as social support, emotional regulation, academic engagement, personality traits, institutional climate, and socioeconomic conditions may also contribute meaningfully to students' adaptive capacity. Prior research similarly highlights the importance of emotional regulation, engagement, and social support in sustaining resilience in higher education contexts (Saleem & Zia, 2024; Silaen, 2025). Thus, the present findings support a multidimensional conceptualization of academic resilience rather than a single-factor explanation.

The analysis of sex differences revealed no statistically significant differences in academic self-efficacy or digital stress. However, female students reported significantly higher academic resilience than male students. Although the mechanisms underlying this difference were not examined, prior research suggests that variations in coping strategies and help-seeking behaviors may contribute to differences in resilience (Saleem & Zia, 2024). This finding should be interpreted cautiously given the uneven sex distribution in the sample and the predominance of younger, second-year undergraduate students. These sample characteristics may limit the generalizability of the results to other academic levels or demographic groups.

Despite these limitations, the findings have practical implications for higher education institutions. Interventions designed to strengthen academic self-efficacy such as mastery-oriented instruction, constructive feedback, mentoring, and digital competence development may support students' adaptive functioning. Concurrently, institutional strategies aimed at managing digital workload expectations and promoting digital well-being may help reduce technology-related strain. Supporting coping resources while moderating environmental demands may foster stronger resilience in digitally intensive academic environments. Additionally, Future research should employ longitudinal designs to clarify the directional relationships among academic self-efficacy, digital stress, and academic resilience.

Research Limitations

Although the results of this study are derived from a robust quantitative analysis, several limitations should be considered when interpreting the findings. First, the use of non-probability purposive sampling limits statistical generalizability, as the sample may not fully represent the broader undergraduate population. Participants were drawn from private colleges within a single geographic location, which further constrains external validity. Additionally, the sample was predominantly female (68%) and heavily concentrated among second-year students (71.8%). These demographic imbalances may have influenced the observed patterns of academic resilience. Differences in developmental stage, academic exposure, and accumulated coping experience across year levels could affect resilience levels. Likewise, gender-related differences in coping strategies, emotional regulation, and help-seeking behaviors may have contributed to the significant sex difference observed in academic resilience. Such imbalances may have introduced systematic bias into the estimates and should therefore be interpreted cautiously.

Another limitation relates to the reliance on self-report quantitative measures to assess academic self-efficacy, digital stress, and academic resilience. Although these instruments are widely used and psychometrically sound, self-perceptions may be subject to social desirability and response biases, potentially affecting the accuracy of reported experiences. Finally, the cross-sectional design of the study limits the ability to draw causal inferences, as it does not permit examination of temporal relationships or directionality among the variables. Future research should employ longitudinal designs and recruit more demographically balanced samples using probability sampling techniques to enhance generalizability and strengthen causal interpretation.



CONCLUSIONS

This study examined the relationships among academic self-efficacy, digital stress, and academic resilience among undergraduate students. The findings confirmed that Academic self-efficacy was positively associated with resilience, whereas digital stress was negatively associated, and both variables emerged as significant predictors of students' adaptive capacity in a digitally mediated learning context. These findings indicate that strengthening students' confidence in their academic abilities while addressing technology-related demands may support resilience in higher education. Although causal conclusions cannot be drawn, the results provide empirical evidence that psychological resources and digital stressors are important correlates of academic resilience and offer direction for institutional support strategies and future research.

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