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ORIGINAL RESEARCH PAPER

Less Stress, More Satisfaction with Online Learning During the COVID-19 Pandemic: The Moderating Role of Academic Resilience

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Abstract

The COVID-19 outbreak triggered a sudden transformation in all aspects of life. Inevitably, educational environments were also affected. Previous studies found a sharp drop in student satisfaction and a simultaneous corresponding increase in academic stress when online learning was instituted due to the pandemic. Conversely, academic resilience is considered psychological capital; it enables students to overcome stress and stimulates satisfaction. The interactions of these three variables must thus be collectively examined. This study used the convenience sampling technique to investigate the moderating role of academic resilience vis-à-vis academic stress and student satisfaction with online learning during the COVID-19 pandemic. Data were collected via an online questionnaire from a sample of 337 Indonesian undergraduate students aged 18–32 years recruited for this study. The questionnaire encompassed three measurement instruments: Stressor Scale for College Students (α =.85), Academic Resilience Scale-Indonesian version (α =.89), and Student Satisfaction with Online Learning (α =.90). Linear regression analysis revealed that academic stress exerted a significant negative effect on satisfaction with online learning. Academic resilience was a significant moderator, dampening the effects of academic stress on satisfaction with online learning. The theoretical and practical implications of the research results are also discussed.

The COVID-19 outbreak prompted the sudden transformation of all aspects of life; inevitably, the educational environment also changed. The World Health Organization declared COVID-19 to be a pandemic in March 2020. Educational institutions were thus compelled to shift from face-to-face classes to online learning formats. Indonesian educational institutions predominantly applied only face-to-face or classroom instruction before the pandemic (Direktorat Jendral Pendidikan Tinggi, 2020). However, higher education institutions such as Open Universities (Universitas Terbuka) did offer Internet-based learning programs. The pandemic has turned online learning into a necessity for education (Dhawan, 2020) in countries worldwide, including Indonesia. The Government of the Republic of Indonesia issued a study from the home policy through the Ministry of Education and Culture as stipulated in Circular Letter No.15/2020 concerning Guidelines for Organizing Learning from Home in an Emergency for the Spread of COVID-19. This document regulates the implementation of online learning activities for all levels of education to ensure the application of the physical distancing principle to prevent the

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transmission of COVID-19 and reduce the spread of the coronavirus.

Numerous adjustments are required to ensure learning efficacy during the pandemic. Students were worried that they would experience long-term disadvantages (Daniel, 2020). A survey of 1,008 college students conducted in the US during the pandemic found that student satisfaction dropped significantly after their courses were fully conducted online due to the pandemic. Only 19% of students were greatly satisfied with their online learning experiences: This figure evinced a decrease from the previously computed statistic of 51% before courses were conducted solely online (Means et al., 2020). Studies conducted before the pandemic also found that students of online courses reported lower satisfaction rates than the students receiving in-person instruction (Furlonger & Gencic, 2014; Johnson et al., 2000). In Indonesia, the study involving the students in Padang Sidimpuan, and Semarang also discovered that participants were less satisfied overall with online learning during the Covid-19 pandemic (Napitupulu, 2020; Priyastuti & Suhandi, 2020).

The satisfaction of students engaged in online learning reflects their evaluation of Internet-based learning experiences. This measure is considered pivotal for the assessment of online learning (Alqurashi, 2016). Learners who are satisfied display a more positive attitude toward online learning and achieve higher achievement levels than dissatisfied students (Dziuban et al., 2015). Such constructive stances manifest in their behaviors; for instance, satisfied students are more engaged, motivated, responsive, and contributory. Previously conducted studies have revealed that satisfaction with online learning is highly correlated with lower drop-out rates and that satisfaction performs an essential role in the academic performance of students (Hart, 2012; Meneghel et al., 2019). Therefore, the decrease in student satisfaction related to the online learning process during a pandemic is cause for concern.

Moreover, online learning also causes other psychological problems, such as increasing stress related to academic performance (Furlonger & Gencic, 2014). Academic stress occurs when existing education-related demands outweigh the adaptive resources commanded by students (Wilks, 2008). A previous study conducted with 1,129 students from several provinces in Indonesia found that academic tasks and teaching styles represented stressors for students engaged in online learning during the pandemic (Livana et al., 2020). Time management and the ability to understand course material represent other potential stressors for students engaged in online learning (Ota et al., 2016). If students fail to overcome these stressors, they are likely to experience academic stress that would, in turn, influence their sense of satisfaction. Some extant studies have highlighted that academic stress and student satisfaction are negatively associated (Cazan & Truța, 2015; Chraif, 2015; Lee & Jang, 2015; Tri & Sari, 2019). The higher the stress experienced by the individuals, the lower their satisfaction.

Resilience is a psychological condition that enables individuals to deal with stress, modify the impact of adverse events, and successfully adapt to adversity (Hobfoll et al., 2003; Olsson et al., 2003). Stressors are less likely to affect students who display high resilience (Siebert, 2005). Thus, some prior studies have reported negative correlations between stress and resilience (Cazan & Truța, 2015; Wilks, 2008). In the educational context, resilience is termed academic resilience and is defined as an adaptive response to learning-related difficulties. Academic resilience denotes the capacity of students to overcome acute and/or chronic education-related difficulties through adaptive responses in three domains: cognitive, affective, and behavioral (Cassidy, 2016b; Martin, 2013). Academic resilience can help students overcome and competently manage academic stressors.

Conversely, academic resilience was found to be a significant predictor of student satisfaction (Kim & Lee, 2020; Meneghel et al., 2019; Noh, 2017), an outcome that could be attributed to the increased adaptability of resilient students to changes. Highly resilient learners are likely to view setbacks as opportunities for development (Tugade & Fredrickson, 2004). They tend to respond to academic difficulties in constructive ways (Leary & DeRosier, 2012). Studies have revealed that students who display high levels of academic resilience participate more enthusiastically in classes, achieve higher grades, report fewer school-related problems, and experience low academic fatigue. Therefore, highly resilient students were more contented with their aca-

demic lives than students who exhibited low resilience (Hwang & Shin, 2018). Put differently, student satisfaction depends on the level of academic resilience.

The COVID-19 protocols and the transition from offline to online learning processes are new experiences for Indonesian university students. Thus, the present study initiative aims to extend the knowledge attained through previous studies related to student satisfaction with online learning, education-related stress, and academic resilience during the pandemic. This study references previous findings that academic stress affects student satisfaction (Cazan & Truţa, 2015; Chraif, 2015; Lee & Jang, 2015; Tri & Sari, 2019) and that academic resilience levels influence both academic stress (Cazan & Truţa, 2015; Wilks, 2008) and student satisfaction (Hwang & Shin, 2018). These previously reported outcomes allow the postulation that academic resilience moderates the relationship between academic stress and satisfaction with online learning. In so doing, the present investigation intends to examine the moderating role discharged by academic resilience vis-à-vis academic stress and satisfaction with online learning. Students evincing low academic resilience and reduced capacities of overcoming academic stress are more likely to be dissatisfied or less satisfied with online learning experiences. Conversely, students who demonstrate high academic resilience and show greater capabilities of managing academic stress are more likely to express increased satisfaction with online learning. In other words, it is expected that academic resilience levels will moderate the relationship between academic stress and student satisfaction with online learning.

Method

Participants

A total of 337 undergraduate students who had experienced online learning during the pandemic were recruited for this study using the accidental sampling technique. In sum, 78.64% of the participants were female, and 21.36% were male. The ages of the participants ranged from 18 to 32 years (M = 20.56, SD = 1.91). Most of them were students at public universities (63.2%). The remaining 36.8% were enrolled in private universities in Indonesia. Participants were engaged from varied faculties and study programs, including Psychology (51.63%), Engineering (14.24%), Social Sciences (10,68%), Health Sciences (7.42%), and other disciplines (14.84%). The participant sample spanned first-year to sixth-year undergraduate students, but the largest cohorts represented second-year (28.78%) and third-year (27.89%) undergraduates. Their average GPA was computed at 3.38 (SD = 0.36, range 1 to 4).

Measures

Predictor Variable. *Academic stress* denotes the strain experienced by students because of the learning processes to which they are subjected. This sensing of pressure influences physical and psychological changes within students (Gadzella, 1994; Ota et al., 2016; Sun et al., 2011). This study measured academic stress through the subscale study-related stressor from the *Stressor Scale for College Student (*Ota et al., 2016*)*. The *Stressor Scale for College Student* measures academic stressors in general, while this study was conducted in the context of the online learning process. Therefore, the measurement tool was modified by adding the online learning context and making adjustments as required to calculate individual perceived stress during the online learning process. An example item read, "I have to attend a lot of online classes." This variable was assessed via seven items on a six-point Likert-like scale (1 = Strongly disagree to 6 = Strongly agree): a high total score indicated a high level of academic stress from the online learning process. The items formed a reliable scale (α =.85) with item validity (taken from corrected item-total correlation) ranging from.52 to.66.

Moderator Variable. *Academic resilience manifests as* affective, cognitive, and behavioral responses to overcome academic difficulties. This variable was measured using Cassidy's (2016) Academic Resilience Scale-30 (ARS-30), whose Indonesian adaptation (ARS-Indonesia) has been validated by Kumalasari et al. (2020) as evincing satisfactory psychometric properties (α =.85). The Indonesian version met convergent validity criteria through a composite reliability calculation (CR=.91 -.99). It comprises items representing

three principal dimensions: perseverance, reflective and adaptive help-seeking, and negative affect and emotional response. The perseverance dimension (9 items) refers to individual behaviors in response to academic difficulties. The reflective and adaptive help-seeking dimension (8 items) concerns cognitive responses in dealing with academic difficulties. The negative affect and emotional response dimension (7 items) relates to individual emotional reactions to academic difficulties. A scenario describing academic difficulty preceded the administration of ARS-Indonesia for this study. Participants were asked to imagine being in the described situation and were then asked to choose their likely feeling/reaction to each item statement. This six-point scale offered response options ranging from 1 (strongly disagree) to 6 (strongly agree). A sample item read, "I would just give up." The higher the total ARS-Indonesia score, the more academic resilience likely to be exhibited by the individual. The ARS-Indonesia reliability coefficient for this study was computed at α =.89 with item validity (corrected item-total correlation) ranging from.22 to.71.

Criterion Variable. *Online learning satisfaction* is operationalized as the perceptions and evaluation of students apropos the online learning process. It is measured through the engagement levels displayed by students with the online learning process. This variable was calculated using the engaged learning subscale of Dziuban et al.'s (2015) Student Satisfaction with Online Learning instrument. The applied subscale comprises ten items on a six-point Likert-like scale (1 = Strongly disagree to 6 = Strongly agree). The statement "Online learning helps me understand course material" represents a sample item. Higher total scores indicate greater student satisfaction with the online learning process and results. The reliability coefficient for this study was computed at α =.90, with item validity (corrected item-total correlation) ranging from.55 to.76.

Procedure

The Universitas YARSI ethics committee approved this study (Ethical clearance letter No: 027/KEP-UY/BIA/I/2021). Data collection occurred in June 2020, three months after the initiation of pandemic-induced online learning ses-

sions. A cross-sectional study was conducted, and data were compiled using a self-reporting online survey. The link was distributed to the potential participants via social media groups, students, and the lecturer's networks. Informed consent was obtained, and detailed information was provided on the data collection process on the landing page of the link. Students who agreed to participate in this study clicked "Next" and completed the survey. At the end of the questionnaire, participants could enter a prize draw to win one of 200 IDR 25.000 electronic vouchers.

Data Analysis

Linear regression analysis was performed to process the data collected for this study. All statistical analyses were conducted using the JASP 0.14.0.0 software.

Results

Participants reported moderate levels of academic stress (M = 29.58, SD = 6.35), high levels of academic resilience (M = 138.10, SD = 17.12), and moderate levels of satisfaction with online learning (M = 33.77, SD = 9.9). Table 1 presents descriptive statistics of these variables and displays their inter-correlations. As can be noted, a significant moderate negative correlation exists between academic stress and satisfaction with online learning (r = -.29, p <.001). This result signifies that the higher the stress sensed by students, the lower their satisfaction with online learning. No significant correlation was discovered between academic resilience and satisfaction with online learning satisfaction (r =.10, p =.77) or academic stress (r =.03, p =.57). These preliminary outcomes offer initial evidence that should be subjected to further analysis to examine the effects of academic stress on student satisfaction with online learning.

Table 1. *Correlation between Variables*

	Mean	*SD*	**1**	**2**
Academic stress	29.58	6.35		
Academic resilience	138.10	17.12	.03	
Satisfaction with online learning	33.77	9.9	−.29***	.10

Table 2. *Moderating Effect of Academic Resilience on the Relationship between Academic Stress and Student Satisfaction with Online Learning*

Predictor	Online Learning Satisfaction					
	B	*SE*	*t*	*p*	*LLCI*	*ULCI*
Academic stress	1.326	.534	2.481	.014	.275	2.377
Academic resilience	.435	.115	3.787	<.001	.209	.661
Academic stress x Academic resilience	-.013	.004	-3.370	<.001	-.021	-.005

Predicting Online Learning Satisfaction

Table 2 demonstrates that all predictors (academic stress, academic resilience, and interaction between academic stress and academic resilience) are collectively significant predictors of student satisfaction with online learning (R^2 = 0.12, F (3,334) = 15.74, p <.001). This model could only explain 12% of the variance in satisfaction with online learning. The interaction term, *academic stress x academic resilience* exercised a significant effect on satisfaction with online learning (B = −013, p < .01). Therefore, academic resilience moderated the effects of academic stress on student satisfaction with online learning (B =.013, SE =.004, CI = [−.021, −.005], t (3,334) = 2.54, p <.001). Figure 1 illustrates the moderation effect.

Figure 1 depicts that academic resilience levels influence the relationship between academic stress and student satisfaction with online learning. Academic stress is likely to decrease online learning satisfaction by 0.50 in a group of students who evinced high levels of academic resilience. Additionally, academic stress tends to further reduce online learning satisfaction by 1.45 in students who display lower levels of academic resilience. Put differently, academic stress is likely to yield a three-fold decrease in the effects of academic resilience on satisfaction with online learning. This result highlights the significant impact exerted by academic stress and academic resilience on the satisfaction sensed by students with online learning.

Discussion

The present study examined the functioning of academic stress and academic resilience vis-à-vis student satisfaction with online learning during the COVID-19 pandemic. In so doing, it advanced theoretical knowledge of the effects of academic stress and academic resilience on the satisfaction sensed by students with online learning during the COVID-19 pandemic. This investigation is also relevant to tertiary level educational processes in the ongoing COVID-19 pandemic circumstances during which all educational institutions must employ online learning methods.

This study revealed that academic stress negatively influenced student satisfaction with online learning and demonstrated that satisfaction with online learning decreases with increased academic stress. This finding is aligned

Figure 1. *Moderation Effect Illustration*
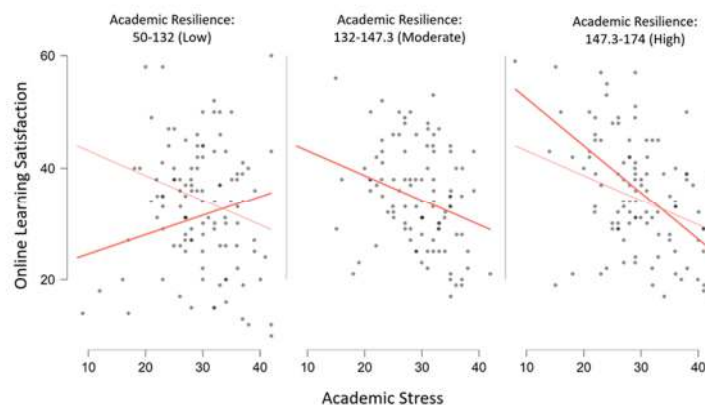
with the outcomes of studies previously conducted in Romania (Chraif, 2015) and Korea (Joo et al., 2012) that have reported the negative correlation of academic stress with student satisfaction. This result can be attributed to the fact that stress sensed by students results in their inability to function appropriately and thus hinders their growth and development (Freeburn & Sinclair, 2009).

In the current context of the pandemic, online learning has forced students to shift from their comfort zones of face-to-face classroom learning. Students are likely to experience stress when they sense excessive demands and are compelled to adapt to discomforting conditions (H. J. Kim et al., 2019). In academic settings, in particular, academic stress stimulates negative emotions in students and thus affects the learning process, leading to a more negative evaluation of the pedagogy. In other words, academic stress can reduce the satisfaction students feel with online learning in contexts when they are compelled to engage in such methods.

The present study measured online learning satisfaction was measured through student engagement in the online learning process (Dziuban et al., 2015). Thus, student satisfaction was gauged through the extent of their involvement in the online learning process. The results indicated that the higher the academic stress experienced by the students, the lower their engagement in the online learning process. This finding is congruent with past studies that have discovered the negative correlation of academic stress with student engagement (Manikandan & Neethu, 2018; Raufelder et al., 2014). Students evincing higher levels of stress tend to be more disengaged with school-related activities, which manifests in passive behaviors such as not exerting sufficient effort in class, being bored, or giving up easily (Skinner & Belmont, 1993).

The moderator effect analysis revealed that the effects of academic stress on satisfaction with online learning depend on the academic resilience of individual students. When academic resilience is high, academic stress exercises a lesser impact on student satisfaction with online learning. Conversely, satisfaction with online learning is sharply reduced in students who display low academic resilience and feel academic stress. In other words, academic resilience buffers the negative effects of academic stress on the

satisfaction students feel with online learning. This finding indicates the importance of academic resilience in dampening the effects of academic stress on student satisfaction with online learning.

Academic resilience denotes the capacity of a student to overcome academic adversities (Martin, 2013). This trait allows students to respond (e.g., cognitive, affective, behavior) adaptively to academic challenges (Cassidy, 2016). Students exhibiting high resilience are more likely to discover positive messages from everyday stressors than learners who are not resilient (Tugade & Fredrickson, 2004). This rationale can explain why some individuals who experience high levels of stress are able to cope and even improve themselves (Grant & Kinman, 2012). Therefore, academic resilience facilitates students to adaptively respond to academic stress and to overcome adverse pressures. Academic resilience also contributes to student satisfaction. Students evincing high levels of academic resilience tend to be more satisfied with their academic experiences (Meneghel et al., 2019).

These results indicate the significant role discharged by academic resilience in the relationships between academic stress and student satisfaction with online learning processes. Academic resilience weakens the association between academic stress and satisfaction with online learning. This finding can be incorporated by instructors, academic advisors, and counselors when they design interventions to increase student satisfaction with online learning. The study results can also help students initiate plans to enhance their resilience, lower stress, and engage more enthusiastically in online learning sessions. Interventions that can ameliorate the ability of students to analyze their academic stressors and determine how to deal with them would help increase student satisfaction with online learning. Programs to strengthen the academic resilience of students may also be mandated to foster satisfaction in students with the online learning process.

The present study has offered robust support for the effects of academic stress on the satisfaction sensed by students with online learning and the moderating function of academic resilience. However, some limitations must be acknowledged. First, this study focused on internal factors related only to student satisfaction

with online learning methods (e.g., individual academic stress and academic resilience). Such satisfaction could also be influenced by external factors (e.g., instructor support, technology, and online learning system). Therefore, this study only explains a small portion (12%) of the variance of student satisfaction with online learning. Kauffman's (2015) review of factors influencing student satisfaction and successes with online learning has documented that both parameters are affected by internal as well as external factors. Success and satisfaction vis-à-vis online learning require interactions between students, instructors, and technology (Kauffman, 2015). Thus, prospective research projects must replicate and extend the findings of the current study by investigating the impact of both internal and external factors on the satisfaction of students with online learning. Second, disproportionately more females than males formed the participants of this study. The sample also encompassed more students from public rather than private universities. Even though no significant difference was observed in terms of these variables across demographic information, the existing research suggests that learner characteristics can impact student satisfaction with online learning (Kauffman, 2015). Therefore, further studies should aim for a more balanced gender and university-based distribution and capture other demographic information (e.g., social-economic status, availability of internet connection, and online learning tools). Third, this cross-sectional study was conducted in the early stages of the pandemic. Academic stress levels and academic resilience are likely to have changed over time and to have influenced the satisfaction sensed by students with online learning. Also, individual students could have increased their ability to adapt and function more competently over time and with experience (Freeburn & Sinclair, 2009). Therefore, longitudinal studies are recommended to assess dynamic changes that occur over time in students with respect to academic stress, academic resilience, and satisfaction with online learning.

Conclusions

This study has evidenced the functions of academic stress and academic resilience in student satisfaction with online learning during the COVID-19 pandemic. The results of the investigation demonstrated that academic stress is negatively associated with student satisfaction with online learning; this relationship weakens when students display higher levels of academic resilience. This finding highlights the significance of academic resilience in dampening the effects of academic stress on the satisfaction of students with online learning formats. In practical terms, this outcome suggests that academic resilience should be inculcated and encouraged in students to facilitate an ameliorated handling of education-related stress and to increase their contentment with online learning methods.

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