The Impact of Academic Stress on Cyberloafing with Fatigue as a Mediating Variable: A Study of Students in Bandung City-Indonesia During a Pandemic

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Abstract: The evolution of the COVID-19 pandemic has affected various aspects of human life, with numerous activities carried out through networks, including education. Lecturers need to change their teaching strategies to make students able to accept the material provided. On the other hand, students must manage their lives without being limited by space and time to avoid stress and cyberloafing, especially in the academic field. Cyberloafing is the act of accessing the internet during study hours for personal interests. Therefore, this research aims to determine the effect of academic stress on cyberloafing and whether fatigue is a mediating variable between both factors. Data were collected from 284 students studying in Bandung, West Java, Indonesia. The results showed that the academic stress felt by students has a positive and significant effect on cyberloafing behavior. Although fatigue positively affects both factors, it does not mediate the relationship between them. The managerial implications in this research are expected to be used as material for evaluating online learning methods for students, as well as to make them aware of the negative impact of cyberloafing behavior during lectures.

Keywords: *Academic, cyberloafing, fatigue, stress, students.*

Introduction

In this modern era, several people widely use the internet. The Coronavirus disease (COVID-19) pandemic that hit the entire world has forced certain countries to impose large-scale social distancing policies that led to restrictions on mobility and physical activity. This changed people's lifestyles in terms of communicating, accessing, and seeking information sources through digital media and increased internet users.

The data from the Association of Indonesian Internet Service Providers (AIISP) shows the geographical areas in the country where internet access is available. It is a known fact that the majority of the Javanese, approximately 57.70%, use the internet, and 49.52% are between 19 to 34 years. This significantly indicates that the highest number of Internet users is students (Bohang, 2018). The Prime Minister of Education and Culture of Indonesia ordered all academic implementers to carry out learning activities online or remotely to suppress the spread of COVID-19 (Indonesia Ministry of Education and Culture, 2020)

However, performing every activity at home is not always fun because these students encounter many obstacles during online lecture activities. Several of them complained of experiencing greater stress than they usually have. Some of them face excessive pressure from the family because they not only have to help with house chores but also manage time to work on academic demands. The obstacles often encountered by these students include learning difficulties due to limited facilities such as laptops, internet quotas, and networks, delays in the material being delivered, as well as signal interference (Jufrida, 2020). Furthermore, the intense competition among friends for scholarships and increased lecture assignments makes them feel academically stressed (Jufrida, 2020). Students who feel stressed usually rely on the internet to reduce negative feelings and emotions (Mcnicol & Thorsteinsson, 2017).

The effects of academic stress on the students cause them to surf the internet during study hours for trivial purposes, such as opening online shopping applications, playing games, using social media, and even chatting with friends. This

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action is called cyberloafing, and regarding this phenomenon, research carried out at one of the universities in Surabaya reported the use of the internet for other non-academic activities (Simanjuntak et al., 2018). The results show that 89.3% of the 385 respondents use the internet for personal purposes during lecture activities. Most students who engage in cyberloafing stated that it was caused by boredom during lectures (61%) and less exciting learning methods (38.9%). Factors that trigger students to engage in this phenomenon are lack of self-control and awareness (Widiastuti & Margaretha, 2016). According to Margaretha et al. (2021), cyberloafing activities have several negative impacts. Based on the research carried out on 605 respondents from various state and private universities in the country, it was reported that this behavior has a negative effect on the students' academic achievement (GPA) and thereby reduces their motivation to learn (Arabaci, 2017).

Doerr et al. (2015) stated that stressful conditions could cause an individual to experience physical and psychological fatigue because cognitive resources become depleted. Psychological fatigue, in particular, causes boredom (Doerr et al., 2015). According to Ragan et al. (2014), students are more likely to search for other activities when they feel bored or to stay focused while engaging in teaching and learning exercises. It also refers to using the internet to access social media or other non-academic websites.

Chen et al. (2021) stated that the fatigue factor is a connecting medium between perceived stress and cyberloafing behavior. It was reported that a person's level of fatigue is relevant to the existence of cyberloafing activities. The more an individual feel fatigued, the higher the likelihood of engaging in this behavior (Aghaz & Sheikh, 2016).

Previous preliminary studies have been carried out on work stress and its effect on cyberloafing behavior. However, the research on these variables in the context of students being stressed is still limited especially during the time of the pandemic. Learning or academic stress is the cause of cyberloafing behavior. This research aims to examine the effect of academic stress on the emergence of cyberloafing behavior and to ascertain whether fatigue mediates the relationship between these two variables in students of Bandung, West Java, Indonesia.

Literature Review

Academic Stress

Academic stress is a type of anxiety experienced by students (Sinaga, 2015). It appears as a reaction to numerous demands and tasks imposed on them (Olejnik & Holschuc, 2007). The number of tasks at home and school, competition among fellow students, family environment, and lack of learning resources are suspected of causing academic stress (Agolla & Ongori, 2009). Rahmawati (2012) stated that academic stress results from a dissimilarity between environmental demands and the student's abilities that causes them to feel burdened. However, when sustained, it negatively impacts their learning capacity, performance, achievement, workload, quality and duration of sleep, physical and mental health, and the use of unwanted substances. There is a need for students to improve their skills and abilities in terms of managing perceived academic stress (Pascoe et al., 2020).

Cyberloafing

Cyberloafing is any activity involving assessing diverse sites unrelated to work, such as social media, sports, news, and entertainment websites, reading, sending personal emails, online shopping, and playing games (Widiastuti & Margaretha, 2016). Stoddart (2016) stated that it is an attempt to escape stress or fatigue. Previous research stated that cyberloafing is an intentional act of accessing the internet for personal interests, thereby threatening the determining organizational goals (Margaretha et al., 2022). Initially, this phenomenon occurred in the world of work (Stoddart, 2016), but currently, it is common among students because they have high-speed internet access for learning and communication activities (Pascoe et al., 2020).

However, this cyberloafing has a negative impact on students. Most of them get distracted in the classroom by playing with mobile phones, tablets, i-pads, laptops, and other similar gadgets (Widiastuti & Margaretha, 2016). Prasad et al. (2010) stated that these students also access the campus internet for personal use during college time. Moreover, they are currently engaged in online learning activities to prevent the spread of COVID-19. All academic exercises have shifted to online learning, including at the tertiary level (Andiarna & Kusumawati, 2020).

Academic Stress and Cyberloafing

Andiarna and Kusumawati (2020) stated that online learning does not always have a positive impact because some students tend to experience certain difficulties. These include the number of tasks with brief deadlines, unsupported signals, various disturbances when studying at home, difficulty understanding the presented material due to lack of direct interaction with lecturers and other students, as well as inadequate learning items, which causes academic stress.

Therefore, most students tend to get relief by engaging in diverse forms of cyberloafing (Hamrat et al., 2019). Taylor (2005) stated that two mechanisms are used to overcome fatigue and stress, including problem and emotion-focused coping. Interestingly, problem-focused coping is when individuals assume that their situation can change, thereby

taking spontaneous action to relieve stress. Examples include working on their homework, studying before exams to reduce nervousness, etc. The next emotion-focused coping mechanism is when people believe that nothing can be done to relieve them of their stressful situation. Therefore, they do not take productive actions to reduce or eliminate it, rather, they prefer to focus on personal pleasure. For example, when students are bored with innumerable assignments, they prefer to access social media.

Vitak et al. (2011) reported that cyberloafing does not always have a negative impact rather, it has several positive influences, such as relieving boredom, fatigue, and stress, giving a greater sense of job satisfaction, increased creativity, well-being, entertainment, and recovery, as well as generally making them happier. However, it is undeniable that the negative impacts outweigh the positive ones. Cyberloafing has provided material and formal losses for individuals and organizations. Some of its adverse effects on the organization include undisciplined actions, termination of employment, loss of profits, and company secrets. For individuals who engage in this action, the impact is reduced work performance, loss of personal responsibility, and decreased productivity (Weatherbee, 2010). These results led to the hypothesis that students' stress is positively related to cyberloafing.

H1: *Academic stress affects cyberloafing behavior*

Academic Stress, Fatigue, and Cyberloafing

High stress puts people at risk of experiencing fatigue (Doerr et al., 2015), where the more significant its level, the more likely they are to engage in cyberloafing (Chen et al., 2021). This is supported by Doerr et al. (2015), who stated that the extent of stress experienced by individuals on the previous day significantly affects their level of fatigue the next day. Furthermore, when people experience fatigue, they find it difficult to focus on the job at hand, thereby being susceptible to distractions, such as engaging in cyberloafing while performing their duties. Doerr et al. (2015) stated that 50 normal students do not suffer from chronic fatigue. Akbulut et al. (2017) also stated that fatigue makes it more difficult for individuals to focus on their main goals, thereby becoming more vulnerable to the internet and engaging in cyberloafing, especially regardless of their gender or social status. However, based on a research carried out by Chen et al. (2021) regarding the perception of stress and cyberloafing in 716 students, it was concluded that the ability to deal with negative problems is the dominant mediator between perceived stress and cyberloafing.

H2: *Fatigue is a mediating variable between academic stress and cyberloafing*

Therefore, figure 1 explains the research model applied in this study and the following hypotheses have been tested in this research are:

H1: *Academic stress affects cyberloafing behavior*

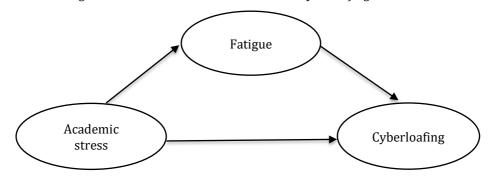H2: *Fatigue is a mediating variable between academic stress and cyberloafing.*

Figure 1. Relationship Model Between Academic Stress and Cyberloafing

Methodology

Research Instruments

The instrument used in this research was developed by previous studies, namely the Likert scale, to state the appropriateness of the statement submitted by each respondent. The academic stress variable questionnaire distributed was developed by Sun et al. (2011). It comprises 16 statements, for example, "I am not satisfied with my current academic grades." The Likert scale consists of Strongly Disagree (STS), Disagree (TS), Doubtful (R), Agree (S), and Strongly Agree (SS). Its reliability was calculated using the Cronbach's alpha method, and a value of 0.81, which indicates good internal consistency, was obtained.

Furthermore, the cyberloafing variable questionnaire was developed by Akbulut et al. (2017). It consists of 30 statements with a coefficient of Cronbach's alpha on the cyberloafing scale of .925. An example is "I saw or checked my friends' posts during lectures and while completing assignments outside class hours." The Likert scale consists of Never, Rarely, Sometimes, Often, and Always.

Meanwhile, the fatigue variable questionnaire was developed by Chalder et al. (1993). It comprises 14 statements, for example, "I often feel fatigued." The Likert scale consists of Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree. Based on this research, Cronbach's alpha coefficient of .8903 was obtained.

Sample

The sample comprises 284 students from various state and private universities in Bandung, West Java, Indonesia. The sampling criteria are those who have or are currently attending lectures for at least one year at universities in Bandung. Data was collected using internet-based questionnaires directly sent to the respondents through communication media or with the help of the research contact persons.

Data Analysis and Hypothesis Test Methods

The data collected is further analyzed and tested for validity, reliability, and hypotheses using the IBM SPSS 26.0 processing application. A validity test is used to determine whether or not the measuring instrument, which is the statement contained in the questionnaire, is valid (Janna, 2021).

The validity test criteria are:

H is accepted if r count > r table (the measuring instrument used is valid).

H is rejected if r count ≤ r table (the measuring instrument used is invalid).

According to Janna (2021), the r-table is determined using the Degree of Freedom (N-2, two-way test significance level). For example, r-table = df (284-2, .05) with N = Number of Samples therefore the r-table of df (N= 284 with .05) is .1164.

A reliability test is carried out to ascertain the extent the measuring instrument can be trusted. It is therefore declared reliable if it produces a Cronbach's alpha of .60 (Ghozali, 2011). This test aims to determine the consistency of the measurement instruments when tested severally. It is presumed to be reliable if it can produce the same results despite being tested several times. This research employed Cronbach's alpha as a data reliability test method.

After the validity and reliability tests were completed, a hypothesis was evaluated using simple regression analysis and a mediating variable by examining the data processing results. Simple regression analysis is used to predict the relationship or effect of an independent variable on the dependent one (Munawaroh et al., 2015). However, when combined with a t-test, it shows that the t-count > the t-table with the formula t-table = [a/2, (n-k-1)], and p >.05. It was concluded that a relationship exists between the independent (X) and dependent variables (Y) (Munawaroh et al., 2015). For H1, a simple regression test is performed where academic stress becomes the independent variable and cyberloafing is the dependent one.

Meanwhile, the mediating variable test was carried out for H2. It is commonly known as the intervening variable, it is a stratified relationship therefore, the regression test applied must have been path analysis. This tends to examine the independent variable's direct and indirect effects (academic test). It is realized through the intervening variable (fatigue) on the dependent one (cyberloafing). The product of the coefficient method developed by Sobel (Suliyanto, 2011) was used to test the fatigue intervening variable. Suliyanto (2011) stated that it is performed by calculating the t-count where if t-count > t-table, then the hypothesized intervening variable is assumed to be able to mediate the relationship between the independent and dependent variables. The t-count is obtained from comparing the multiplication of the regression coefficients in equation 1 (coefficient a) with 2 (coefficient b), in accordance with the standard error ab (Sab):

$$t_{count} = \frac{ab}{Sab}$$

$$Sab = \sqrt{b^2 Sa^2 + a^2 Sb^2 + Sa^2 Sb^2}$$

Findings/Results

Respondents Characteristics

The questionnaire used the google form platform and was distributed through the link (http://bit.ly/KuisionerStressAkademik) to respondents selected based on the research criteria. It was distributed from early April to May 2022, when a total of 301 students filled out the questionnaires, but only 284 filled the form, and the data obtained was further processed in the subsequent stage. The characteristics of the respondents are as follows:

Table 1. Description of Respondents' Characteristics

Dimension	Category	Total Respondents	Percentage
Gender	1. Male	119	41.90%
	2. Female	165	58.10%
Age	1. 17 - 18 years	20	7.04%
	2. 19 - 20 years	113	39.79%
	3. 21 - 22 years	110	38.73%
	4. > 22 years	41	14.44%
Class	1. 2021	48	16.90%
	2. 2020	100	35.21%
	3. 2019	58	20.42%
	4. 2018	65	22.89%
	5. 2017	9	3.17%
	6. 2016	4	1.41%
	7. 2015	0	0.00%
University Type	1. State universities	42	14.79%
	2. Private Universities	242	85.21%
Faculty	1. Faculty of Language and Culture	15	5.28%
	2. Faculty of Economics and Business	138	48.59%
	3. Faculty of Law	10	3.52%
	4. Faculty of Computer Science	2	0.70%
	5. Faculty of Social and Political Sciences	14	4.93%
	6. Faculty of Medicine	5	1.76%
	7. Faculty of Dentistry	1	0.35%
	8. Faculty of Teacher Training	6	2.11%
	9. Faculty of Nursing	1	0.35%
	10. Faculty of Health	5	1.76%
	11. Faculty of Mathematics and Science	7	2.46%
	12. Faculty of Psychology	15	5.28%
	13. Faculty of Fine Arts and Design	9	3.17%
	14. Faculty of Engineering	38	13.38%
	15. Faculty of Technology	17	5.99%
	16. Faculty of Theology	1	0.35%

Source: Data processing results (2022)

Based on Table 1, the majority of the respondents are female between the ages of 19 to 20 years and 21 to 22 years in percentages of 58.10%, 39.79%, and 38.73%, respectively. Most of them are from the class of 2020, followed by 2018 and 2019 in percentages of 35.21%, 22.89%, and 20.42%. These classes felt the transition from face-to-face to online learning. Furthermore, 85.21% of the respondents are from private universities, while those from the Faculty of Economics and Business dominated the others by 48.59%.

Validity and Reliability Test Results

This test is intended to determine the validity and reliability of the statements for each variable in the questionnaire. If the r-count > r-table, then it is valid. Based on the degree of freedom with an N = 284 and an alpha of .05 (α = 5%), r-table = .1164 was obtained. With respect to the calculated results, all the 60 statements are valid.

The reliability test results imply that all variables are reliable; the Cronbach's alpha of academic stress = .876411047, cyberloafing = .953507516, and fatigue = .936699976. These two test results are shown in Table 2.

Table 2. Validity and Reliability Test Results

Var	Pearson Correlation Value		Description	Cronbach's Alpha	Description
Academic Stress	A1	.448**	Valid	.876411047	*Reliable*
	A2	.582**	Valid		
	A3	.609**	Valid		
	A4	.547**	Valid		
	A5	.608**	Valid		
	A6	.745**	Valid		
	A7	.639**	Valid		
	A8	.428**	Valid		

Table 3. Continued

Var	Pearson Correlation Value		Description	Cronbach's Alpha	Description
Academic Stress	A1	.448**	Valid	.876411047	*Reliable*
	A9	.595**	Valid		
	A10	.527**	Valid		
	A11	.627**	Valid		
	A12	.687**	Valid		
	A13	.607**	Valid		
	A14	.628**	Valid		
	A15	.619**	Valid		
	A16	.590**	Valid		
Cyberloafing	B1	.513**	Valid	.953507516	*Reliable*
	B2	.534**	Valid		
	B3	.667**	Valid		
	B4	.582**	Valid		
	B5	.716**	Valid		
	B6	.659**	Valid		
	B7	.661**	Valid		
	B8	.371**	Valid		
	B9	.542**	Valid		
	B10	.732**	Valid		
	B11	.727**	Valid		
	B12	.721**	Valid		
	B13	.785**	Valid		
	B14	.710**	Valid		
	B15	.767**	Valid		
	B16	.656**	Valid		
	B17	.738**	Valid		
	B18	.736**	Valid		
	B19	.777**	Valid		
	B20	.694**	Valid		
	B21	.738**	Valid		
	B22	.712**	Valid		
	B23	.648**	Valid		
	B24	.572**	Valid		
	B25	.648**	Valid		
	B26	.532**	Valid		
	B27	.624**	Valid		
	B28	.650**	Valid		
	B29	.567**	Valid		
	B30	.646**	Valid		
Fatigue	C1	.747**	Valid	.936699976	*Reliable*
	C2	.685**	Valid		
	C3	.698**	Valid		
	C4	.750**	Valid		
	C5	.589**	Valid		
	C6	.784**	Valid		
	C7	.742**	Valid		
	C8	.808**	Valid		
	C9	.854**	Valid		
	C10	.808**	Valid		
	C11	.738**	Valid		
	C12	.726**	Valid		
	C13	.714**	Valid		
	C14	.720**	Valid		

Source: Data processing results (2022)

The Effect of Academic Stress on Cyberloafing Behavior

With simple regression analysis, the hypothesis test results are shown in Table 3. The correlation or relationship (R) between academic stress and cyberloafing behavior is .340. Based on the output, the coefficient of determination (R^2) is

.116. This simply means that the effect of academic stress on cyberloafing is 11.6%, while the remaining 88.4% is the impact or contribution of other variables not included in this research. The academic stress regression coefficient of .711 states that for every 1% addition, the cyberloafing value increases by .711. The regression coefficient is positive; therefore, it was concluded that the effect of academic stress on cyberloafing is positive. A significance value of .000 <.005 was obtained, implying that academic stress significantly affects cyberloafing. The t-count is 6.050 > the t-table of 1.969 (t-count > t-table), which makes it clear that academic stress affects cyberloafing.

Table 4. Results of Testing 1st Hypothesis with Simple Regression

Variable	R^2	*Adjusted* R^2	β	R	t	Sig.	Conclusion
Academic Stress → Cyberloafing	.116	.112	.711	.340a	6.050	.000	Accepted

Source: Data processing results (2022)

Fatigue is a Mediating Variable Between Academic Stress and Cyberloafing

According to Baron and Kenny (1986) several requirements are needed to prove the role of mediating variables, such as (a) the independent attribute needs to affect the mediator, (b) it should be proven to affect the dependent variable, and (c) the mediator needs to affect the dependent attribute. Based on the simple regression test results, academic stress (independent variable) has a significant effect on fatigue (mediator) with a significance of .000, it also has a critical impact on cyberloafing (dependent variable) with a significance of .000. Meanwhile, fatigue significantly affects cyberloafing, with a significance of .000. The calculated results concluded that the impact of these variables had fulfilled the three requirements because the $p < .05$. Therefore, the role of the mediating variable is stated, which is then continued with the mediation test. This is carried out with two regression models, namely

Model I – Academic stress and fatigue as independent and dependent variables, respectively.

Model II – Academic stress and fatigue as independent variables and cyberloafing as the dependent one. The results of models I and II are shown in Table 4:

Table 5. Mediation Regression Results

Model	Variables		R^2	Beta Value		Sig	S
I	SA→K		.445	a = .667	e1=.745	.000	.047
II	SA,K → C	SA	.117	c'= .311	e2=.94	.000	
		K		b = .044		.564	.150

Source: Data processing results (2022)

Model I: Based on the SPSS output results, *p* of SA (academic stress) = .000 < .05, meaning that the Regression Model I, namely academic stress has a significant effect on fatigue (K). Furthermore, R^2 of .445 indicates that the contribution of academic stress on fatigue is 44.5%, while the remaining 55.5% is the contribution of other variables not mentioned in this research. The value of e1 is obtained from the formula $e = \sqrt{1 - R^2}$ (R *square*); $\sqrt{1 - 0,445}$ = 0.745. Therefore, the Model I path diagram is shown in the following figure:
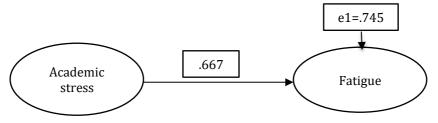

Figure 2. Path of Model I

Model II: Based on the SPSS output results, *p* of academic stress = .000 < .05, and fatigue = .564 > .05. This simply means that academic stress significantly affects cyberloafing while fatigue has an insignificant impact on the variable. R^2 of .117 indicates that the contribution of academic stress and fatigue as a mediating variable to cyberloafing is 11.7%, and the remaining 88.3% is that of external attributes. Furthermore, the value of $e2 = \sqrt{1 - 0,117}$ = .94. Therefore, the Model II path diagram is shown in Figure 3:
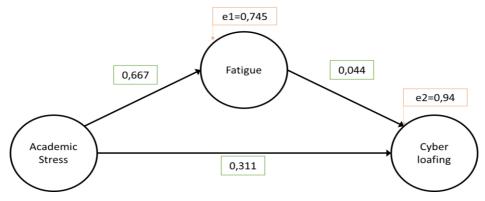
Figure 3. Path of Model II

Similarly, with the calculated Sobel test results, the values of a, b, and c' are obtained from the Standardized Coefficients beta between variable paths with the results of a = .667, b = .044, and c' = .311. e1 and e2 are obtained using the formula of $e = \sqrt{1 - R^2}$ (R^2), with the results of e1=.745 and e2=.94. Sa and Sb are obtained from the Standard Error between paths a and b, with Sa=.0047 and Sb=.150. Therefore, the values of Sab and t-count can be obtained when the results of SAB = .1003 and t-count = .2926 < t-table of 1.969 (t-count < t-table).
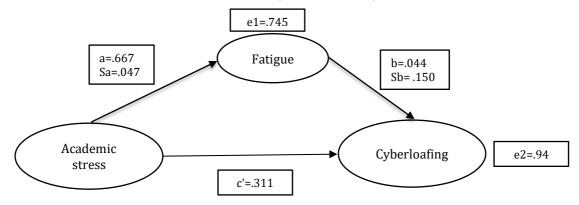

Figure 4. Sobel Test Calculation

Based on the acquired data, it is evident that:

1. Analysis of the effect of academic stress on fatigue → p= .000 < .05. This means that academic stress has a significant and direct effect on fatigue.

2. Analysis of the effect of Academic Stress on Cyberloafing → p= 0.000 < 0.05. It simply implies that academic stress significantly and directly affects cyberloafing.

3. Analysis of the effect of fatigue on cyberloafing → p is .564 > .05. This means that fatigue has an insignirant and direct effect on cyberloafing.

Analyzing the effect of Academic Stress through fatigue on cyberloafing shows that its direct impact is .311. Meanwhile, the indirect effect involves the multiplication between the beta value of academic stress on fatigue with the beta value of fatigue on cyberloafing = .667 x .044 = .029. The total effect of academic stress on cyberloafing is equivalent to direct plus indirect impacts, namely .311 + .029 = .34. Therefore, the direct effect is .311 > the indirect impact of .029. These results indicate that academic stress through fatigue has an insignificant and direct influence on cyberloafing. Academic stress's effect on cyberloafing is greater than fatigue acting as a mediating variable.

Discussion

The results of first hypothesis show the tendency of students to exhibit cyberloafing behavior, such as accessing social media during lectures as well as watching online videos when stressed about college grades and the innumerable assignments or boredom during learning activities. This is also supported by Chen et al. (2021), who reported a correlation between perceived stress due to cyberloafing and negative coping behavior. Furthermore, Hamrat et al. (2019) stated the value of academic stress is .62. This simply implies that it has a direct effect on cyberloafing behavior, such as smartphone addiction. The results of second hypothesis show that fatigue does not act as a mediator between academic stress and cyberloafing. This is in line with Chen et al. (2021), who stated that fatigue does not affect cyberloafing behavior because these students have many other options when they feel fatigued, such as resting, buying their favorite food, and engaging in relaxing activities with their friends.

Based on the results obtained, it was proven that academic stress has a positive and significant effect on cyberloafing behavior. This supports Vitak et al. (2011), who stated that cyberloafing also has a positive impact in eliminating boredom or stress experienced by these students, therefore H1 is accepted. Furthermore, fatigue does not serve as a mediator between academic stress and cyberloafing, therefore H2 was rejected. Academic stress does have a significant and positive relationship with fatigue and an insignificant impact on cyberloafing. This is supported by Chen et al. (2021), who stated that fatigue does not act as a mediator between the perceived stress and cyberloafing behavior rather, a negative problem-solving attitude acts as the mediating variable. This is because the stress felt by these students is negatively related to one's self-control ability, which leads to fatigue. Furthermore, Chen et al. (2021) also stated that these undergraduates are exposed to several choices when fatigued. Most prefer to sleep in class rather than play with gadgets because these tend to make them more tired.

Conclusion

Many studies have showed the relationship between work stress and cyberloafing behavior. On the other hand, the research in the context of students is still limited. Stress in academic setting is the cause of cyberloafing behavior. This research aims to determine the effect of academic stress and cyberloafing behavior on undergraduates at universities in Bandung during the pandemic. The results showed that the academic stress has a positive and significant effect on cyberloafing behavior, however fatigue does not mediate the relationship between academic stress and cyberloafing. This research provides empirical evidence for a multidimensional relationship between academic stress, cyberloafing and fatigue.

Recommendations

This research offers various benefits for the related parties; in addition, the numerous campuses and lecturers may use the results to evaluate online learning methods, especially ensuring that these students are not bored or experience excessive stress. Furthermore, lecturers should develop learning strategies that do not make them feel bored or engage in cyberloafing during class hours. The lecturers can use these results to understand these undergraduates' emotional and physical states. The campus has to provide learning facilities and an adequate network to ensure students focus on lecture materials and not on other activities that are not related to learning. For fellow students, the results show that academic stress directly affects cyberloafing behavior. Students must be able to strike a balance between study and play to avoid academic stress. Furthermore, they should reduce their stress levels by engaging in positive activities, hobbies as well as hanging out with friends and family during leisure. Additionally, students may be able to reduce cyberloafing behavior by understanding the negative impact on lectures.

Future studies are expected to search, process data, and include several variables to help educators and students optimize work and assignments according to their respective roles.

Limitations

This research still has many shortcomings, such as the sample needing more than 300 respondents, and the questionnaire was filled by only 284 of the 301 respondents therefore the results need not be generalized. Lack of standardization proves that the respondents answered the questions honestly, and only one mediating variable was studied.

Authorship Contribution Statement

Simatupang: Data analysis, writing, editing data acquisition, statistical analysis, editing, technical. Margaretha: Concept and design, critical revision of manuscript, supervision.

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