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The Role of Cyberslacking in Student Performance

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Abstract: *Internet access in universities facilitates students' learning. However, students often use the internet during class for non-academic activities such as social media, games, or shopping. This behavior, known as cyberslacking, can cause students to lose focus and lower their academic performance. This study aims to investigate the effects of media multitasking efficacy and technostress on cyberslacking and academic performance. The study used a quantitative method with 270 management students at Universitas Islam Indonesia. Data were collected through questionnaires and analyzed using PLS-SEM. The results of this study showed that media multitasking efficacy negatively affected cyberslacking, while technostress positively affected it. Additionally, cyberslacking adversely affected academic performance. The findings also revealed that media multitasking efficacy had a positive impact on educational achievement, with cyberslacking as a mediator.*

Keywords: *Academic performance; Cyberslacking; Multitasking; Technostress*

1. Introduction

Academic performance is a fundamental objective in education, often defined as the knowledge and skills students acquire over a specified period, measured by grades or established learning goals (Rono et al., 2014). Narad & Abdullah (2016) define academic achievement as the knowledge demonstrated by students as reflected in grades assigned by teachers. It represents the educational outcomes that students, teachers, or institutions aim to reach, commonly assessed through examinations or continuous evaluation. These objectives may differ across contexts. McCoach (2002) emphasized both course grades and academic self-perception, the latter referring to students' assessment of their academic ability, which has been shown to predict academic success significantly.

The development of information and communication technologies has had a significant impact on education, particularly on the learning process in higher education. The Islamic University of Indonesia (UII), for example, provides internet networks such as UIIConnect and Eduroam for academics. Despite its benefits, widespread internet access has also led to unintended consequences, including increased cyberslacking. This is because students often use their devices for non-academic purposes, such as checking social media updates, playing online games, and browsing content unrelated to lectures (Varol & Yildirim, 2018; Yilmaz et al., 2015). This behavior is known as cyberslacking; in an educational context, it is referred to as students accessing non-academic materials during lectures (Akbulut et al., 2016).

With easy internet access and online learning materials available on individual devices, students face a challenge in avoiding non-learning activities, materials, leading to cybers-

lacking. Previous research by Margaretha et al. (2021) found that cyberslacking negatively affects students' academic performance in Indonesia. Research by Barks et al. (2011) on students at Midwestern University yielded similar results: students who use their devices to text during class were associated with poorer academic performance. According to data from the Indonesian Internet Service Providers Association (APJII) for 2021–2022, students accounted for 99.26% of internet penetration. The findings further showed that most respondents primarily used the internet for social media activities, such as Facebook, Instagram, and Twitter.

This study aims to determine the effect of media multitasking efficacy and technostress on academic achievement, with cyberslacking as a mediating variable. Media multitasking efficacy (MME) is related to self-efficacy, as defined by Bandura, which refers to confidence in one's ability to use technology while simultaneously performing other tasks (Wu, 2017). Technostress, on the other hand, is a mismatch resulting from an inability to adapt to the demands of information technology use (Brod, 1984). Technostress can occur when individuals lack the skills and abilities to use information and communication technology, often leading to a loss of focus and increased cyberslacking (Wang et al., 2020; Tarafdar et al., 2020; Taneja et al., 2015; Güğerçin, 2020).

2. Literature Review & Hypotheses Development

2.1. Media Multi-Tasking Efficacy and Cyberslacking

Media multitasking efficacy (MME) is based on Bandura's concept of self-efficacy, which refers to a person's belief in their ability to complete challenging tasks and achieve goals (Wu, 2017). In the digital era, self-efficacy is linked to media use and daily productivity. MME refers to the confidence individuals feel when performing multiple tasks simultaneously across various media. According to Pellas (2014) and Brooks (2015), media multitasking efficacy (MME) occurs when an individual experiences a lack of confidence in performing communication-related tasks. Wu (2017) also noted that students often multitask by using social media, messaging, shopping online, browsing websites, or making video and audio calls while studying. Several researchers have found a strong link between MME and cyberslacking. Research by Margaretha et al. (2021) found that media multitasking efficacy had a positive and significant effect on cyberslacking. Simanjuntak et al. (2022) demonstrated that media multitasking self-efficacy significantly affects academic cyberslacking. Research by Mumu et al. (2022) revealed that high media multitasking efficacy was a significant factor in cyberslacking behavior.

H_1: Media multitasking efficacy positively influences cyberslacking.

2.2. Technostress and Cyberslacking

Nowadays, learning materials and teaching processes can be conducted online, and students and teachers need to be confident in using information and communication technology (ICT). This situation requires strong skills in the use of information and communication technology (ICT). However, this constant use of technology can lead to technostress. Brod (1984) first used this term to describe stress associated with technology use. He said that

people might feel confused, afraid, or anxious. Weil and Rosen also report that many people experience discomfort and frustration when using technology (Levinson, 1999).

Güğerçin (2020) described technostress as a condition in which individuals lack the necessary skills to use ICT effectively. Tarafdar et al. (2010) explained that technostress occurs when individuals are unable to keep pace with rapid technological changes. Brod (1984) also believed that working long hours alone with computers can exacerbate technostress. According to Güğerçin (2020), signs of technostress include excessive use (techno-overload), difficulty (techno-complexity), and technology interfering with personal life (techno-invasion). When students feel this stress, they may struggle to concentrate and choose to distract themselves through *cyberslacking*, spending time on non-academic websites, social media, or games during lessons. A study by Li &Liu (2022) found that technostress has a positive and significant impact on cyberslacking among students. Mumu et al. (2022) also found that even low levels of technostress can lead to cyberslacking behavior.

H_2: Technostress positively influences cyberslacking behavior.

2.3. Cyberslacking and Academic Performance

Cyberslacking is defined as employees' conscious use of company internet access to access non-work-related content (Lim, 2002). This aligns with Blanchard & Henle (2008), who define cyberslacking as the use of internet access and email for non-work purposes. Meanwhile, in the educational context, Akbulut et al. (2016) define cyberslacking, or cyberloafing, as students accessing non-academic content during lectures. There are five signs of cyberslacking: sharing content, online shopping, live updates, watching videos or reading online content, and playing games or gambling (Akbulut et al., 2016). Cyberslacking is often seen as a distraction during class, and many researchers believe it can affect students' academic performance. According to Margaretha et al. (2021), cyberslacking during lectures negatively affects academic achievement. This is because students are not entirely focused on their learning materials when using the internet for non-academic purposes.

H_3: Cyberslacking has a negative effect on academic achievement.

2.4. Cyberslacking Mediates the Relationship Between Media Multi-Tasking Efficacy on Academic Performance

Academic performance is widely recognized as a central measure of educational success, most often reflected in grades, test scores, or cumulative GPA, which serve as indicators of how well students achieve learning objectives (Narad & Abdullah, 2016). It not only represents the results of examinations but also reflects the overall ability of students to process knowledge, apply concepts, and demonstrate competence across various subjects. McCoach (2002) emphasized that academic self-perception, students' evaluation of their academic ability, also significantly contributes to academic achievement. Media multitasking efficacy (MME) refers to students' confidence in using technology while performing multiple tasks simultaneously (Wu, 2017). However, greater confidence in multitasking may encourage students to engage in non-academic online activities during

lectures, thereby contributing to cyberslacking. Such behavior is often described as cyberslacking, which includes browsing social media, chatting, shopping online, or accessing entertainment sites during learning activities. While students may view cyberslacking as harmless or even as a brief break, it diverts attention from academic tasks and reduces the depth of cognitive engagement with the material presented. Over time, repeated cyberslacking behavior disrupts concentration, diminishes the effectiveness of studying, and weakens long-term learning outcomes. Margaretha (2021) found that cyberslacking negatively affects academic performance, suggesting that it mediates the relationship between MME and academic performance.

H_4: Media multitasking efficacy indirectly affects academic achievement through cyberslacking.

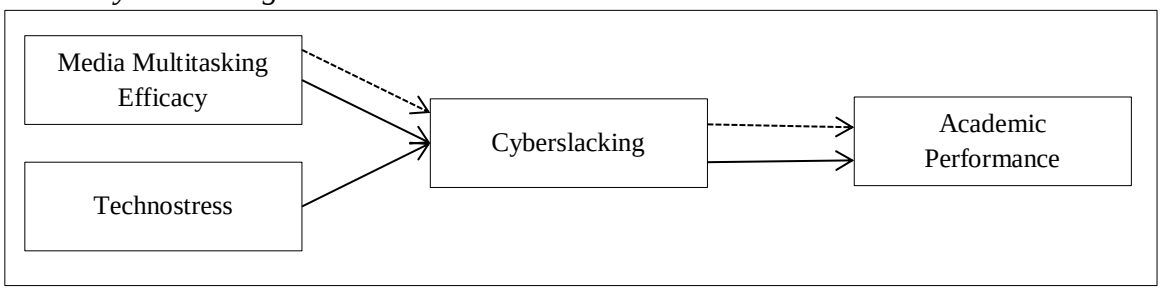

Figure 1: Research model

3. Method

3.1. Population and Sample

The study population comprised 1,544 students from the Management Study Program at the Faculty of Business and Economics, Islamic University of Indonesia. The sample of 270 students was chosen through probability sampling, applying Slovin's formula.

Table 1. Respondents' demographic data

Profile of the respondent		Percentage (%)
Gender	Male	45.19%
	Female	54.81%
Concentration	Financial Management	8.14%
	Human Resource	12.60%
	Management	14.82%
	Marketing Management	7.04%
	Operations Management	57.40%
Based on Year of Admission	2019	1.85%
	2020	1.85%
	2021	19.26%
	2022	14.08%
	2023	62.96%
Latest GPA	<2.00	0.38%
	2.00-3.00	11.11%
	>3.00	88.51%

Primary data were collected through questionnaires distributed to selected respondents who met specific criteria, ensuring that data were obtained directly. The demographic findings indicate that female students comprised the largest share of the sample, with most respondents entering in 2023. Academic performance was also high, with nearly all students

achieving a final GPA above 3.00, indicating that the study participants generally performed well academically.

3.2. Variable Measurement

This study adopted established indicators from prior research. Wu (2017) highlighted various forms of multitasking in learning environments, including media use such as Facebook, instant messaging, online shopping, and web browsing. Technostress was measured using indicators proposed by Güğerçin (2020), which include techno-overload, techno-complexity, and techno-invasion. Meanwhile, cyberslacking behavior was assessed using five indicators adapted from Akbulut et al. (2016): content sharing, online shopping, real-time updates, viewing content, and online gaming or gambling. All variables were measured using a Likert scale. A Likert scale is commonly used to measure attitudes, with response options ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

3.3. Data Analysis

Instrument trials were conducted prior to data analysis to assess data quality. These trials aimed to check whether the instruments were valid and reliable. Once confirmed, the researcher used SEM-PLS to analyze the data. Ghozali & Latan (2015) explained that convergent validity is based on the correlation between indicators and their constructs, with a loading above 0.7 considered ideal. However, values between 0.5 and 0.6 are also acceptable for early research. The R^2 score indicates the strength of the model: 0.67 is strong, 0.33 is moderate, and 0.16 is weak. The significance of the relationships was tested using bootstrapping, with standard t-values used to evaluate confidence levels.

4. Result & Discussion

An instrument test was conducted prior to hypothesis testing to confirm the tool's validity and reliability. Table 2 summarizes the results of the reliability and validity assessments (**appendix**).

Table 3. The Test Of Reliability

Variable	Cronbach alpha	C.R (rho_a)	C.R (rho_c)	AVE
Cyberslacking	0.930	0.935	0.940	0.513
Media Multitasking Efficacy	0.786	0.828	0.856	0.602
Academic Performance	0.846	0.882	0.887	0.611
Technostress	0.832	0.840	0.879	0.552

The Fornell-Larcker method is commonly used to test discriminant validity in structural equation modeling (Hair et al., 2014). This method compares the square root of the Average Variance Extracted (AVE) for each construct with the correlation of that construct with the others in the model. If the AVE root is higher than the correlations, it indicates that the construct is more closely related to its own indicators than to other constructs. As shown in Table 4, all constructs in this research meet this condition, showing that the discriminant validity is good.

Table 4. Fornell-Lacker

	Cyberslacking	Media Multitasking Efficacy	Academic Performance	Technostress
Cyberslacking	**0.716**			
Media Multitasking Efficacy	-0.317	**0.776**		
Academic Performance	-0.204	0.192	**0.781**	
Technostress	-0.113	0.411	-0.160	**0.743**

The R-squared (R^2) value measures the proportion of variance in the dependent variable explained by the independent variables. According to Ghozali and Latan (2015), R^2 values are classified as strong (0.67), moderate (0.33), or weak (0.16). Hypothesis testing in this study examined the relationship between variables using the bootstrapping method in SmartPLS. Table 6 presents the relationships among the research variables tested in this study.

Table 5. R-Square (R^2)

Variables	R-square	Ajd. R-square
Cyberslacking	0.101	0.094
Academic Performance	0.042	0.038

Table 6. Results of Direct Relationship Testing

Variables	Original Sample	t-statistics	P values	Result
MME => Cyberslacking	-0.326	5.964	0.000**	H_1: Rejected
Technostress => Cyberslacking	0.021	0.348	0.728	H_2: Accepted
Cyberslacking => AP	-0.204	3.764	0.000**	H_3: Accepted

**Sig<5%

The results of the direct relationship testing showed that media multitasking efficacy has a negative effect on cyberslacking, with an original sample value of -0.326, a t-statistic of 5.964, and a p-value of 0.000. Therefore, Hypothesis 1 (H_1) is rejected. On the other hand, technostress has a positive effect on cyberslacking, as indicated by an original sample value of 0.021, a t-statistic of 0.348, and a p-value of 0.728. This means Hypothesis 2 (H_2) is accepted. The relationship between cyberslacking and academic performance is negative, with an original sample of -0.204, a t-statistic of 3.764, and a p-value of 0.000; hypothesis 3 (H_3) is accepted.

Table 7. Test of Mediation

	Variables	Original Sample	t-statistics	P values	Result
H_4	MME => Cyberslacking => AP	0.067	2.896	0.004**	H_4: Accepted

**Sig<5%

The results of the indirect effect test revealed that media multitasking efficacy has a significant indirect effect on academic performance through cyberslacking. This is shown by the original sample value of 0.067, the t-statistic of 2.896, and a p-value of 0.004. Because the p-value is less than 0.05, the result is statistically significant. Therefore, Hypothesis 4 (H_4) is supported, confirming that cyberslacking mediates the relationship between media multitasking efficacy and academic performance.

5. Discussion

This study found that media multitasking efficacy (MME) negatively affects cyberslacking behavior. These findings suggest that students with higher self-confidence in their multitasking abilities are not necessarily more likely to use digital technology for non-academic activities; instead, they are better able to regulate their use. The higher a student's MME, the lower their tendency to engage in cyberslacking during lectures. Students with high MME tend to be more disciplined in directing their technology use, ensuring that digital devices are used in ways that support academic needs. They are also better trained to distinguish between activities relevant to learning and those that could disrupt it. This suggests that students with high MME do not use their abilities to engage in more non-academic activities; instead, they employ them to maximize learning outcomes. Therefore, in the context of this study, MME is more appropriately understood as a factor that supports self-control and learning effectiveness rather than as a trigger for cyberslacking. Sanbonmatsu et al. (2013) also noted that perceived multitasking ability does not always align with actual effectiveness, which may explain the differing outcomes observed across studies.

The results further indicate that technostress positively influences cyberslacking behavior. This means that the higher the level of stress students experience due to the demands of technology use, the greater their tendency to engage in non-academic activities during lectures (Li & Liu, 2022; Güğerçin, 2020). Empirically, this condition can be attributed to students' limited ability to maintain focus and concentration under the pressure of intensive technology use (Brod, 1984; Tarafdar et al., 2010). When students are exposed to technostress, they tend to feel overwhelmed by the complexity of modern technology, the large amounts of information they must process, and the high expectations of technology-based learning systems (Wang et al., 2020; Owusu-Ansah & Adu, 2016). This ongoing stress reduces their mental resilience and increases their likelihood of disengaging from academic tasks. To alleviate these feelings, students often seek escape through cyberslacking, which involves diverting attention to non-academic online activities, such as social networking, streaming entertainment, or casual browsing (Lim, 2002; Akbulut et al., 2016; Taneja et al., 2015). Although such behaviors may temporarily reduce stress, they represent a form of cyberslacking that distracts students from their academic responsibilities. This avoidance strategy reduces their ability to remain engaged in the learning process. Over time, it can reduce academic discipline and lead to poorer learning outcomes. Thus, while cyberslacking provides momentary psychological comfort, it ultimately undermines academic achievement by diverting energy and attention away from educational goals (Margaretha et al., 2021).

The findings of this study indicate that cyberslacking negatively affects students' academic achievement. Students who engage in cyberslacking during lectures lose the ability to focus entirely on academic tasks. Time that should be invested in understanding the lecture material or recording helpful notes is instead consumed by unrelated activities such as social networking, online chatting, or watching entertainment content (Taneja et al., 2015; Akbulut et al., 2016). This weakens their commitment to academic goals. In practice, cyberslacking impairs students' attentional and memory capacities. Distractions reduce their capacity to

understand the material being explained, thereby keeping their comprehension superficial. Over time, this limited understanding makes them less prepared to perform well on exams or complete academic assignments (Setiawan, 2019). Moreover, cyberslacking has consequences for active involvement in class. Students who are distracted become passive; they ask fewer questions, contribute less to discussions, and engage less with the learning community. As a result, they miss opportunities to gain a deeper understanding. Therefore, higher levels of cyberslacking directly reduce students' academic achievement since the effectiveness of the learning process is significantly weakened (Simanjuntak et al., 2022). These differences suggest that the impact of cyberslacking depends on context, such as the type of online activity, its intensity, and students' time management. Among management students at UII, this study confirms that cyberslacking tends to harm academic achievement (Margaretha et al., 2021; Setiawan, 2019).

The results indicate that media multitasking efficacy (MME) has a positive indirect effect on academic achievement, mediated by cyberslacking. Students who are confident in their multitasking skills tend to manage digital distractions more effectively than those with lower efficacy. Even when they engage in cyberslacking, their ability to regulate their focus allows them to mitigate its negative effects (Wu, 2017; Simanjuntak et al., 2022). Empirically, students with high MME scores exhibit stronger self-control and time-management abilities. They may occasionally shift their attention to non-academic online activities, but they can quickly return to academic tasks. This flexibility prevents cyberslacking from causing serious harm to their concentration (Sanbonmatsu et al., 2013; Bowman et al., 2010). Instead, it becomes a brief break that does not significantly disrupt the learning process. As a result, students with high MME maintain academic focus and continue to meet their learning goals. Cyberslacking does not entirely disappear, but its impact is minimized by students' ability to regulate their digital use. Therefore, the mediating role of cyberslacking shows that MME helps students to sustain positive academic outcomes, even in the presence of distractions (Margaretha et al., 2021; Wu, 2017).

6. Conclusions, Limitations, and Suggestions

This study aimed to examine the influence of media multitasking efficacy (MME) and technostress on cyberslacking and their implications for the academic achievement of Management students at the Faculty of Economics and Business (FBE), Universitas Islam Indonesia. The findings reveal that MME negatively affected cyberslacking, meaning that students with higher confidence in multitasking were less likely to engage in non-academic online activities during lectures. In contrast, technostress positively affected cyberslacking, as pressure from technological demands increased students' tendency to engage in non-academic activities. Moreover, cyberslacking has been shown to affect academic achievement negatively, as this behavior reduces attention and focus on learning. The analysis further demonstrated that MME had a positive indirect effect on academic achievement through cyberslacking, whereas technostress had a negative indirect effect through cyberslacking. The main limitation of this study is that the data were collected via a self-report questionnaire, which is susceptible to response bias because participants may provide socially desirable responses rather than reflecting their actual behavior. Therefore,

to address the limitations of self-reported data, subsequent studies should monitor the frequency and duration of students' cyberslacking behavior. This approach would improve the accuracy and validity of the findings and provide a more comprehensive understanding of cyberslacking behavior and its relationship with academic achievement (Margaretha, 2021; Li & Liu, 2022).

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Appendix

Table 2. Validity and Reliability

Variables	Instrument	Code	Loading Factors
Media Multitasking Efficacy (Wu, 2017)	I can surf the Internet for non-academic purposes while studying and still study sufficiently.	MME1	0.556
	I can make video or audio calls with friends while studying, and still study sufficiently.	MME2	0.720
	I can instant message friends while studying and still study sufficiently	MME3	0.831
	I can do online shopping while studying and still study sufficiently	MME4	0.819
	I can use Facebook for non-academic purposes while studying and still study sufficiently.	MME5	0.702
Technostress (Güğerçin, 2020)	**Techno overload**		
	I am forced by this technology to work much faster	TO1	0.712
	I am forced by this technology to do more work than I can handle	TO2	0.769
	I am forced by this technology to work with very tight time schedules	TO3	0.795
	I am forced to change my work habits to adapt to new technologies	TO4	0.797
	I have a higher workload because of increased technology	TO5	0.670
	Techno-complexity		
	I do not know enough about this technology to handle my job satisfactorily	TC1	0.797
	I need a long time to understand and use new technologies	TC2	0.828
	I do not find enough time to study and upgrade my technology skills	TC3	0.741
	I find that recruits to this organization know more about computer technology than I do	TC4	0.694
	I often find it too complex for me to understand and use new technologies	TC5	0.872
	Techno-invasion		
	I spend less time with my family due to this technology	TI1	0.719
	I have to be in touch with my work even during my vacation due to this technology	TI2	0.742
		TI3	0.763
		TI4	0.756

	I have to sacrifice my vacation and weekend time to keep current on new technologies		
	I feel this technology is invading my personal life		
Cyberslacking (Akbulut,2016)	**Sharing**		
	I check my friend's posts	SHR1	0.709
	I check my friend's social networking profiles	SHR2	0.642
		SHR3	0.764
	I share content on social networks	SHR4	0.763
	I like interesting posts	SHR5	0.620
	I comment on shared photos	SHR6	0.773
	I post status updates on social networks	SHR7	0.735
	I tag friends on photos	SHR8	0.754
	I chat with friends	SHR9	0.783
	I watch shared videos		
	Shopping	SHO1	0.872
	I shop online	SHO2	0.707
	I visit deal-of-the-day websites	SHO3	0.872
	I visit online shopping sites	SHO4	0.453
	I visit auction sites	SHO5	0.698
	I use online banking services	SHO6	0.509
	I visit online shops for used products	SHO7	0.439
	I check job advertisements		
	Real-time updating	RTU1	0.830
	I retweet a tweet I like	RTU2	0.668
	I favor a tweet I like	RTU3	0.849
	I post tweets	RTU4	0.785
	I read tweets	RTU5	0.709
	I comment on trending topics		
	Accessing online content	AOC1	0.695
	I download music	AOC2	0.882
	I watch videos online	AOC3	0.878
	I listen to music online	AOC4	0.693
	I download videos	AOC5	0.818
	I download the applications I need		
	Gaming/gambling	GAM1	0.631
	I visit betting sites	GAM2	0.626
	I bet online	GAM3	0.745
	I check online sports sites	GAM4	0.666
	I play online games		
Academic Performance (McCoach, 2002)	I am confident in my scholastic abilities	PA1	0.826
	I do well in school	PA2	0.764
	I learn new concepts quickly	PA3	0.815
	I am successful	PA4	0.693
	I am confident in my ability to succeed	PA5	0.786