



European Journal of Educational Research

Volume 10, Issue 4, 1881 - 1892.

ISSN: 2165-8714

<http://www.eu-jer.com/>

Cyberslacking Behavior and Its Relationship with Academic Performance: A Study of Students in Indonesia

Meily Margaretha* 

Universitas Kristen Maranatha,
INDONESIA

Sherlywati 

Universitas Kristen Maranatha,
INDONESIA

Yani Monalisa 

Universitas Kristen Maranatha,
INDONESIA

Ana Mariana 

Universitas Kristen Maranatha,
INDONESIA

Imelda Junita 

Universitas Kristen Maranatha,
INDONESIA

Martalena 

Universitas Kristen Maranatha,
INDONESIA

Dini Iskandar 

Universitas Kristen Maranatha,
INDONESIA

Nur 

Universitas Kristen Maranatha,
INDONESIA

Received: May 7, 2021 ▪ Revised: July 7, 2021 ▪ Accepted: September 17, 2021

Abstract: Students are aware of the use of technology in the learning process, and they are generally referred to as digital natives. However, there are challenges associated with the availability of internet access as a learning process to both university students and teachers inside and outside the classroom. One of such challenges is students' ability to access unrelated activities which is known as cyberslacking. In the education sector, this process refers to the use of technology for unrelated academic activities. Studies associated with this activity are significantly conducted in western countries, but it is still limited to the Indonesia education environment. Therefore, this research aims to investigate the cyberslacking behavior of students in Indonesia and its relationship to their academic performances. It also determines the relationship between media multi-tasking efficacy and self-regulated learning. The results showed that there is a significant influence between media multi-tasking efficacy and self-regulated learning with cyberslacking. Furthermore, there is a negative influence between cyberslacking and the academic performance of students in Indonesia. This research adds references to studies on cyberslacking in the scope of education and provides input for universities to develop the management of information and communication technology used in the learning process.

Keywords: *Academic performance, cyberslacking, media multi-tasking efficacy, self-regulation.*

To cite this article: Margaretha, M., Sherlywati, Monalisa, Y., Mariana, A., Junita, I., Martalena, Iskandar, D., & Nur. (2021). Cyberslacking behavior and its relationship with academic performance: a study of students in Indonesia. *European Journal of Educational Research*, 10(4), 1881-1892. <https://doi.org/10.12973/eu-jer.10.4.1881>

Introduction

The growth of information and communication technologies (ICT) has led to many significant changes in life, both in daily work, and educational environments. Generally, ICT is required to carry out work more efficiently and effectively using computers, laptops, notebooks, tablets, and smartphones. The use of an integrated internet network in daily activities is one of the ICT developments. In Indonesia, the projection data for internet use for 2017-2023 shows a yearly increase. Statistical data for 2019 showed a 13.3% increase in the number of internet users from 84 million in 2018, to 95.2 million. Furthermore, there is an estimated average increase in growth by 10.2% from 2018-2023. Meanwhile, in 2019, the number of internet users in Indonesia grew by 12.6% with 107.2 million users compared to 2018 (Anam & Pratomo, 2019). Another survey carried out by Simanjuntak et al. (2019) showed that 89% of internet users are students. Furthermore, the Indonesian Internet Service Providers Association (APJII) found that 49.52% of users are between the ages of 19-34 years, with a significant percentage being students (Bohang, 2018).

From an educational perspective, the right to use internet access in universities aims to provide opportunities for students to independently, and quickly access online learning materials, thereby increasing their mastery of the studied material (Lee & Tsai, 2011; Wu et al., 2018). However, the accessibility of internet access in the learning process presents challenges for teachers both inside and outside the classroom. This is because students tend to access non-academic related contents, such as their updating status on social media, gaming online, and browsing other unrelated sites (Akbulut et al., 2016; Ugrin & Pearson, 2013; Varol & Yildirim, 2018; Yilmaz et al., 2015). Subsequently, when

* **Corresponding author:**

Meily Margaretha, Universitas Kristen Maranatha, Management, Indonesia. ✉ meily_margaretha@yahoo.com



students use the internet for personal purposes it leads to inefficient and ineffective learning outcomes (Varol & Yildirim, 2018). The concept of using the internet to access unrelated academic material is known as cyberslacking or cyberloafing. This concept originally came from research in the organizational field that explored employee behavior regarding the use of the internet to carry out unrelated work activities. According to Lim (2002), cyberslacking is any voluntary action of employees using company internet access during working hours for personal purposes, such as reading news, accessing friendship forums, etc.

The concept of cyberslacking is also found in educational learning activities. Some authors found that the activity was higher among students because they spent more free time on ICT-related activities (Yilmaz et al., 2015). According to Kalayci, cyberslacking in education refers as the behavior of students using technology for unrelated academic activities during the learning process (as cited in Yaşar & Yurdugül, 2013). Preliminary studies carried out by Bellur et al. (2015) and Wu et al. (2018) showed that cyberslacking is considered a very important issue that affects students' learning processes. Those that are too busy accessing social media in the classroom tend to reduce their concentration on the learning material provided (Junco & Cotten, 2012; Ravizza et al., 2014). A research carried out by McCoy (2016) on 269 college students from various universities in America found that 92% of respondents routinely send messages via smartphones while in class. Ergün and Altun stated that there are five reasons for conducting cyberslacking behavior from students' perspective, namely motivation, lecturers, environment, attitude towards material, and time (as cited in Varol & Yildirim, 2018). Meanwhile, Kalayci in literature review stated that the reason for students to carry out this behavior is divided into two categories, namely individual and external variables (as cited in Varol & Yildirim, 2018). Varol and Yildirim (2018) research related to cyberslacking categorizes several antecedents from the emergence of this behavior in education, such as ineffective lecturers in teaching, learning materials, and environments, as well as factors originating from the students. According to Alt (2017), lecturers with effective learning methods make students focus more in classroom, hence they feel reluctant to access unrelated sites. Conversely, from the learning material factor, they tend to engage in cyberslacking during lectures when the material is difficult to understand. Meanwhile, from classroom environmental factor, students engage in this activity with laptops or gadgets (Aguilar-Roca et al., 2012). Finally, the demographic factors influence students' abilities to engage in cyberslacking in the classroom, such as learning motivation, locus of control, self-confidence, and self-regulation (Arabaci, 2017; Varol & Yildirim, 2018; Yilmaz & Yurdugül, 2018).

This research aims to examine the media multi-tasking efficacy (MME) and self-regulated learning (SRL) factors from students. These two factors are thought to reduce the emergence of cyberslacking behavior, thereby enhancing students' academic performance. According to Wu (2017), students' involvement in multi-tasking affects the tendency of using the internet in the classroom, thereby leading to cyberslacking. When students feel confident in carrying out multi-tasking media activities, they are not necessarily committed to the use of technological aids such as laptops for learning context rather for unrelated activities (Zhang, 2015). Furthermore, self-regulated learning is also a determining factor for a student to engage in cyberslacking despite being in a less-supportive classroom environment (Gökçearsan et al., 2016; Zhang, 2015). Students capable of managing themselves try to achieve their learning goals independently by focusing on learning materials and solving learning problems that cause distractions including the tendency to engage in cyberslacking (Gökçearsan et al., 2016). However, research carried out by Kalayci showed that cyberslacking behavior and its effect on academic performance in education are still relatively understudied and still provides inconsistent results (as cited in Varol & Yildirim, 2018). For example, Wentworth and Middleton (2014) failed to determine a relationship between the number of time students spent using smartphones and social networks regularly with overall GPA rates. Meanwhile, Rashid and Asghar (2016) stated that regular social media use positively affects GPA, although there was no significant relationship. Furthermore, Doleck and Lajoie (2018) analyzed 23 studies to expand the relationship between students' use of social networking sites on academic performance. They found mixed results and concluded that further research needs to be conducted. Several studies reported that cyberslacking does not produce negative outcome, rather the provision of the internet gives a more flexible environment by reducing stress which increases work productivity, creative thinking skills, social relations, and active participation in the learning process due to easier access to information (Blanchard & Henle, 2008; Vitak et al., 2011). Furthermore, studies related to cyberslacking/cyberloafing in the scope of education are still mostly carried out in Western countries such as America and Canada, and a few in Asian countries (Wu et al., 2018). Therefore, the research in these countries cannot be generalized assuming they are adjusted to the context of students in Asia, such as Indonesia. This is because the attitude of those with western cultures differs in the learning process.

Literature Review

Cyberslacking

According to Blanchard and Henle (2008), cyberslacking is the uncorrelated use of internet access and e-mail by employees. Lim (2002) also defined it as voluntary use of internet access by an employee that is uncorrelated with work. Lim further categorized it as a form of work deviation. According to Bennett and Robinson (2000), it is a work deviation that refers to voluntary violation of organizational norms, thereby threatening the welfare of the organization or its members. Based on some opinions of Blanchard and Henle (2008) and Lim (2002), it is concluded that

cyberslacking is the deliberate use of information technology and internet access by an employee for personal needs that are not correlated with the job. Yaşar and Yurdugül (2013) added that this behavior on employees and students tend to negatively affect office work, and the material taught in class, respectively. The use of the internet during the teaching and learning process in a class by students and employees for personal gain during working hours is equated to unproductive activities. This is because students do not focus their efforts and attention on the learning process and this condition can be equated to employees' inability to focus on work. Some of the activities associated with these activities are reading personal email, having online conversations, carrying out online shopping and banking, visiting adult websites, playing online games, reading sports magazines, and checking social media accounts (Blanchard & Henle, 2008; Vitak et al., 2011). These activities are used by the lecturer to explain the learning material or by students to complete classroom assignments (Flanigan & Kiewra, 2018). Blanchard and Henle (2008) divided cyberslacking into two types, namely (1) minor and (2) serious. The forms of minor behavior are sending or receiving personal e-mails in class, browsing, reading news, and conducting online shopping. Meanwhile, the forms of serious behavior are visiting adult sites, managing personal websites, and interacting with other people through chat, blogs, and advertisements, carrying out online gambling, and downloading songs illegally (Blanchard & Henle, 2008). Students divert a lot of attention from lecturers teaching in a class by playing with their cellphones, tabs, i-pads, laptops, and other gadgets.

Media Multi-Tasking Efficacy

Media multi-tasking efficacy is related to the concept of self-efficacy, which refers to belief in the simultaneous use of media technology (Wu, 2017). Students do not find it difficult to carry out activities related to the use of technology. Therefore, when they are focused on learning, they feel confident in their abilities to carry other activities not related to accessing internet technology.

Self-Regulated Learning

According to Ozhiganova (2018) students' abilities to have self-control is important in explaining self-regulation because they tend to stay focused on long-term goals by fighting those that are only temporary or short-term, such as having self-control or self-regulation. The concept of self-regulation is important because it tends to affect their self-control on the use of the internet during the learning process in class. Zimmerman and Schunk (2011) stated that self-regulated learning (SRL) is an individual's ability that comes directly from cognition, affection, and behavior to achieve personal goals. Schunk (2020), stated that SRL is closely related to the learning situation, hence students with clear learning objectives try to achieve their academic goals despite being in a less supportive environment.

Hypothesis Development

Media Multi-Tasking Efficacy (MME) and Cyberslacking

According to Pellas (2014) and Brooks (2015), media multi-tasking efficacy is when someone feels less confident of being involved in a variety of jobs while using the communication media (Wu, 2017). Students in this era also known as digital natives think they possess a high enough ability in MME to enable them to access the internet while listening to the explanations of material from lecturers however, they tend to overestimate their capacity in this regard (Sanbonmatsu et al., 2013). MME plays an impact on students' ability to focus on the learning material provided, which involves access to their laptops or smartphones. Unfortunately, they tend to find it difficult to concentrate when reading information on gadgets and simultaneously paying attention to the information described by the lecturer in the classroom (Bowman et al., 2010). Previous research focused more on the personality aspects of self-efficacy with cyberloafing (Widiastuti & Margaretha, 2016), however, not many have directly linked MME with this behavior in class.

Self-Regulated Learning and Cyberslacking

Self-regulation is an important factor in a person's life because it influences goal actualization (LaRose & Eastin, 2004). According to Zhang (2015), the concept of self-regulation is important for students because it tends to affect their self-control regarding internet use during the learning process. Self-regulated learning (SRL) is the outcome of self-regulation associated with the learning situation which is defined by Zimmerman and Schunk (2011) as an individual's ability that comes directly from cognition, affection, and behavior to achieve personal goals. This means that students with SRL try to achieve the goals of the learning process despite staying in a less supportive environment (Schunk, 2020). In terms of internet usage behavior in class, those with SRL are able to control themselves hence they do not access materials that are not relevant to their learning (Gaudreau et al., 2014; Wu, 2015). Those with good SRL are motivated to monitor the learning objectives therefore, they only utilize the internet to find suitable academic materials (Dunbar et al., 2018). In conclusion, students with high self-regulation show more control when accessing the internet for non-academic purposes, compared to those with low SRL. Several studies have found a relationship between self-regulation and cyberloafing/cyberslacking behavior (Widiastuti & Margaretha, 2016). However, numerous studies show an insignificant relationship between these two variables (Gökçearslan et al., 2016; Wu, 2017), hence this indicates that the relationship between SRL and cyberslacking variables is still inconsistent.

Cyberslacking and Academic Performance

Several preliminary studies have shown that the negative impact of using the internet in the classroom is not related to non-academic activities on student performance. An example is a research carried out by Barks et al. (2011) on students at midwestern universities. According to Barks, students that used their gadgets for text messaging during the learning process showed poor academic performance scores. This is in line with the research carried out by Clayson and Haley (2013) on marketing students at two different campuses. Experimental studies carried out by Hembrooke and Gay (2003) has also provided evidence that cyberslacking behavior in the learning process plays an impact on decreasing student academic performance. Meanwhile, Ravizza et al. (2014) stated that cyberslacking is related to student performance. The research carried out by Le Roux and Parry (2017), with data obtained from 1678 students from 10 different faculties at a university in South Africa, found that courses influenced the relationship between these behaviors and academic performance. Setiawan's research (2019) found insignificant results between cyberslacking and the academic performance of accounting students in Yogyakarta, Indonesia. The previous research showed that there are still inconsistencies between cyberslacking and academic performance.

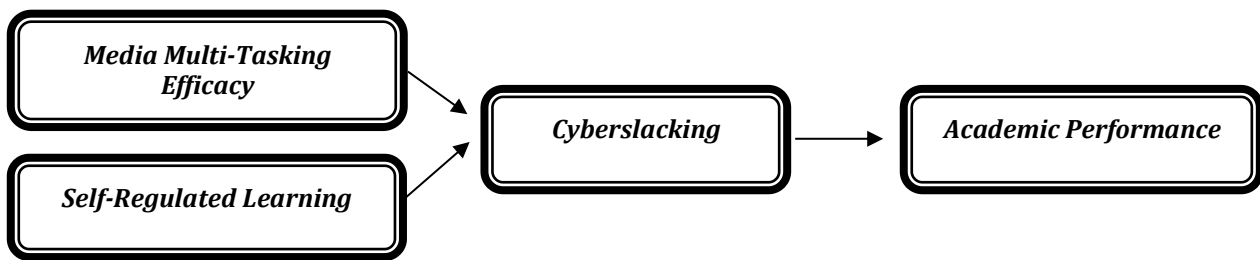


Figure 1: Research Model

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

H1: Media multi-tasking efficacy affects students' cyberslacking behavior

H2: Self-regulated learning affects students' cyberslacking behavior

H3: Cyberslacking negatively affects students' academic performance

Methodology

Research Samples

The research sample consists of 605 students from various state and private universities in Indonesia. The sampling criteria were students that had attended lectures for at least one year with data collected using internet-based questionnaires which were sent directly to respondents via communication media or through the assistance of research contact persons.

Research Instruments

Measurement of each variable was carried out using research instruments developed by previous authors. The cyberslacking scale consisted of 30 statements developed by Akbulut et al. (2016) and an example is "I check my friends' posts". Respondents in this study chose their answers from offered choices, ranging from "Never" to "to a Great Extent". The Cronbach's alpha coefficient on the cyberslacking scale was 0.925. The multi-tasking efficacy scale media questionnaire developed by Wu (2017) and had a Cronbach's alpha coefficient of 0.751. The scale consisting of 5 statements with the example "I can surf the Internet for non-academic purposes while studying and still carry out my academic work efficiently and effectively". The scale consisted of 5 answer-alternatives, which were 1 (Not at all like me), 2 (Not much like me), 3 (Neutral), 4 (Somewhat like me) and 5 (Very much like me). The self-regulated learning scale uses a questionnaire developed by Kadioğlu et al. (2011) with Cronbach's alpha (α) reliability coefficient in the original scale is 0.759 which consists of 7 statements, for example, "I persuade myself to work hard to learn the topic", and options of answer ranging from 1 to 5, i.e., Strongly Agree, Agree, Slightly Agree, Disagree, and Strongly Disagree. Academic performance is measured by determining its level of performance index. Data collection from a single source or using different scales together at the same time can have common method biases (CMB). Podsakoff et al. (2003) stated that CMB is a problem in the research because it can give error in data analysis. One of the most frequently technique used by previous researchers to show common biases is by applying Harman's single factor test to the scales used in the study. From 40 items of statements from three variables, the variance explained by a single and general factor was 30%. Therefore, this low amount of common variance showed that there is no common variance problem in scales. This study suggests that there is no single factor explains the variance of more than 50% in order to avoid common method biases (Podsakoff et al., 2003).

Data Analysis Methods and Hypothesis Testing

The collected data are analyzed by testing the validity, reliability, and hypotheses. According to Hair et al. (2018), the validity test is the degree of research accuracy's measuring instruments regarding the actual content or meaning being measured. Testing is carried out using factor analysis with varimax rotation and the data used is analyzed using this technique assuming the Kaiser's MSA value is ≥ 0.4 (Hair et al., 2018). Reliability is the level of confidence in the measurement, therefore Cronbach's Alpha value was used to access it in this research with a standard of 0.60 and 0.70 used by Ghozali (2011) and Hair et al. (2018), respectively. This is carried out because according to Hair et al. (2018) this value is still acceptable. Furthermore path analysis was used to examine the direct and indirect effects between independent and dependent variables. Value goodness of fit (GFI) ≥ 0.90 is categorized as good fit, RMSEA (Root Mean Square Error of Approximation) ≤ 0.08 is good fit and for NFI (Normal Fit Index) ≥ 0.90 is good fit (Hair et al., 2018). From the computation of data analysis, all the measurements of the instruments are fitting to the assumptions to analyze the data using path analysis, as explained in the findings/results section.

Respondents Characteristics

The research questionnaire was distributed through an online network using the google form platform. The distribution of questionnaires was carried out by direct survey by distributing the link <https://bit.ly/RisetMaranatha> to respondents according to the research criteria, namely the status of active undergraduate students' class of 2014-2019. Questionnaire links were distributed for two months from January to February 2021. By the end of February 2021, a total of 605 data were collected from respondents with various characteristics.

Table 1. Description of the respondents' characteristics

Dimensions	Category	Total Respondents	Percentage
Gender	1. Male	239	39.5%
	2. Female	366	60.5%
Type of University	1. Private Universities	536	88.6%
	2. State Universities	69	11.4%
Age	1. >22 years	63	10.4%
	2. 21-22 years	247	40.8%
	3. 19-20 years	290	47.9%
	4. 17-18 years	5	0.8%
Class	1. 2014	5	0.8%
	2. 2015	7	1.2%
	3. 2016	31	5.1%
	4. 2017	152	25.1%
	5. 2018	243	40.2%
	6. 2019	167	27.6%
Current GPA	1. 0.00-0.99	2	0.3%
	2. 1.00-1.99	2	0.3
	3. 2.00-2.99	81	13.4
	4. 3.00-3.99	513	84.8
	5. 4	7	1.2%
Faculty	1. Faculty of Economics and Business	322	53.2%
	2. Faculty of Engineering	75	12.4%
	3. Faculty of Information Technology	48	7.9%
	4. Faculty of Language and Culture	44	7.3%
	5. Faculty of Art and Design	31	5.1%
	6. Faculty of Math and Science	30	5.0%
	7. Faculty of Psychology	27	4.5%
	8. Faculty of Social Science and Political Science	12	2.0%
	9. Faculty of Law	6	1.0%
	10. Faculty of Agriculture	4	0.7%
	11. Faculty of Medicine	3	0.5%
	12. Faculty of Teaching	2	0.3%
	13. Faculty of Nursing	1	0.2%

Source: Processed data (2021)

As shown in table 1, the majority of respondents were female (60.5%) and 88.6% came from private universities with ages ranging from 17 to more than 22 years. The two largest respondent age groups were 19-20 years (47.9%) and 21-

22 years (40.8%), respectively. Meanwhile, the college class looks linear with 40.2% of the respondents in 2018. The majority of respondents have GPAs ranging from 3.00 to 3.99 (84.8%), where faculty respondents are spread across 13 faculties and dominated by the Faculty of Economics and Business as by 53.2% followed by the Faculty of Engineering at 12.4%.

Findings / Results

Validity and Reliability Tests

Hair et al. (2018) stated that a construct is valid assuming the loading factor value is above 0.40. Meanwhile, a construct or variable is reliable when it produces a Cronbach alpha value of ≥ 0.60 (Ghozali, 2011). Furthermore, the calculation of descriptive statistics such as the mean, standard deviation, and correlation between variables is shown in table 3.

Table 2. Validity And Reliability Test Results

	Component			Cronbach's Alpha
	1	2	3	
CS1		.547		
CS2		.613		
CS3		.638		
CS4		.630		
CS5		.715		
CS6		.610		
CS7		.726		
CS8		.440		
CS9		.632		
CS10		.764		
CS11		.744		
CS12		.729		
CS13		.710		
CS14		.677		
CS15		.722		.951
CS16		.667		
CS17		.684		
CS18		.690		
CS19		.690		
CS20		.621		
CS21		.695		
CS22		.632		
CS23		.638		
CS24		.538		
CS25		.675		
CS26		.529		
CS27		.610		
CS28		.649		
CS29		.641		
CS30		.487		
MME1			.746	
MME2			.737	
MME3			.626	.749
MME4			.754	
MME5			.674	
SRL1	.663			
SRL2	.737			
SRL3	.626			.752
SRL4	.754			
SRL5	.674			

Source: Data processing results (2021)

The validity analysis results for cyberslacking variables showed a value above the standard of 0.40, in the range of 0.440-0.764. For media multi-tasking efficacy variable in the range of 0.626-0.754, and for self-regulated learning variables is 0.626-0.754. Meanwhile, the reliability value is indicated by Cronbach alpha's for cyberslacking of 0.951,

multi-tasking media efficacy of 0.752, and self-regulated learning of 0.749. The validity and reliability test results of each question item from the three variables studied are shown in table 2. As a result of the confirmatory factor analysis, it was seen that the cyberslacking scale has a good level of fit index (χ^2 (Chi-square) = 315.379, df (degrees of freedom) = 90, $\rho = 0.00$, RMSEA (Root Mean Square Error of Approximation) = 0.05, NFI (Normed Fit Index) = 0.95, GFI (Goof Fit Index) = 0.97, CFI (Comparative Fit Index) = 0.98. For the media multi-tasking efficacy scale has a good level of fit index (χ^2 (Chi-square) = 152.251, df = 20, $\rho = 0.00$, RMSEA = 0.05, NFI = 0.94, GFI = 0.95, CFI = 0.97. The self-regulated learning scale has a good level of fit index (χ^2 (Chi-square) = 227.263, df = 22, $\rho = 0.00$, RMSEA = 0.05, NFI = 0.94, GFI = 0.95, CFI = 0.98).

Table 3. Descriptive Statistics And Correlation Analysis

	M	SD	1	2	3	4	5	6	7	8
1. Gender	1.6050	0.48926	1	-0.122**	0.029	-0.067	0.196**	-0.087*	0.076	-0.068
2. Age	2.6083	0.68106		1	-0.016	0.598**	-0.147**	-0.026	0.058	-0.010
3. University	1.8860	0.31813			1	-0.010	0.069	0.074	-0.016	0.035
4. Class	2.1884	1.06457				1	-0.171**	0.102*	-0.013	0.141**
5. GPA	3.8612	0.41162					1	0.011	0.068	-0.087*
6. MME	13.2430	4.27012						1	-0.166**	0.554**
7. SRL	28.000	4.16784							1	0.121**
8. CS	65.4893	22.39010								1

* Correlation is significant at the .05 level (2-tailed)

** Correlation is significant at the .01 level (2-tailed)

Source: Data processing results (2021)

According to table 3, when looking at the relationships in the correlation matrix, the relationship between media multi-tasking efficacy and cyberslacking is at a positive and significant level. The relationship between self-regulated and cyberslacking is at a positive and significant, and for cyberslacking and academic performance (GPA) is negative and significant.

Hypothesis Testing Results

The first hypothesis proposed in this research is that media multi-tasking efficacy (MME) affects students' cyberslacking behavior (CS). The results showed in the table 4 that there was a direct effect between students' multi-tasking efficacy on their cyberslacking behavior ($\beta = 0.549$, $\rho = 0.000$). Results also found that there is direct effect MME and academic performance (GPA) with $\rho = 0.001$ and $\beta = 0.750$. This research is comparable to previous studies carried out by Brooks (2015), Wu (2017), and Sanbonmatsu et al. (2013) which stated that MME affects student behavior when carrying out online learning.

The second hypothesis in this research is that self-regulated learning (SRL) affects students' cyberslacking behavior ($\beta = 0.290$, $\rho = 0.003$). Results also found there is direct effect SRL and GPA ($\beta = 0.722$, $\rho = 0.008$). This is in line with Widiastuti and Margaretha's (2016) research which found a relationship between self-regulation and cyberloafing behavior. According to Schunk (2020), when students have SRL, they try to achieve the goals of the learning process despite staying in a less supportive environment. Therefore, when it is related to the behavior of students in using the internet in the learning process, those with SRL are able to control themselves and ultimately refuse to access the internet that is not related to their learning materials (Gaudreau et al., 2014; Wu, 2015).

The last hypothesis proposed in this research is that cyberslacking behavior negatively affects students' academic performance (GPA). The results showed that the ρ -value is 0.005, and the β is -0.138. This research also shown that there is indirect effect between MME and GPA ($\beta = 0.674$) and indirect effect between SRL and GPA ($\beta = 0.682$). This outcome is similar to preliminary studies carried out by Barks et al. (2011), Clayson and Haley (2013), and Ravizza et al. (2014). The summary of the path analysis proposed in this research is shown in Table 4.

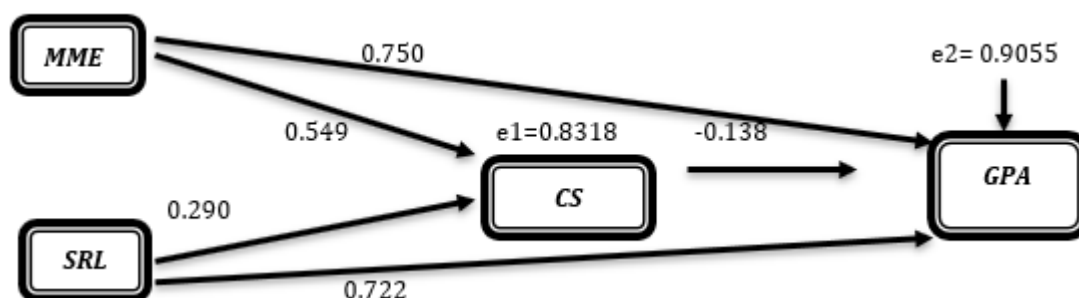


Figure 2: Path analysis of media multi-tasking efficacy, self-regulated learning, cyberslacking and academic performance

Figure 2 explained the model of path analysis results between media multi-tasking efficacy and cyberslacking (with $\beta = 0.549, \rho = 0.000$); self-regulated learning and cyberslacking ($\beta = 0.290, \rho = 0.003$) and for cyberslacking and academic performance (GPA) it showed value of β is -0.138 and ρ -value is 0.005 .

Table 4. Path Analysis Results

Path	Direct Effect	Indirect Effect	ρ -Value	Conclusion
Media Multi-Tasking Efficacy (MME) → Cyberslacking (CS)	0.549		0.000	Accepted
Self Regulated Learning (SRL) → Cyberslacking (CS)	0.290		0.003	Accepted
Media Multi-Tasking Efficacy (MME) → Academic Performance (GPA)	0.750		0.001	Accepted
Self Regulated Learning (SRL) → Academic Performance (GPA)	0.722		0.008	Accepted
Cyberslacking (CS) → Academic Performance (GPA)	-0.138		0.005	Accepted
Media Multi-Tasking Efficacy (MME) → Cyberslacking (CS) → Academic Performance (GPA)		0.674	0.001	Accepted
Self Regulated Learning (SRL) → Cyberslacking (CS) → Academic Performance (GPA)		0.682	0.008	Accepted

Source: Data processing results (2021)

Furthermore, table 4 showed details of path analysis results of each variable. The results showed direct effect between MME and academic performance (GPA) with $\rho = 0.001$ and $\beta = 0.750$ and there is direct effect SRL and GPA ($\beta = 0.722, \rho = 0.008$). Path analysis results also found indirect effect between MME and GPA ($\beta = 0.674$) and indirect effect between SRL and GPA ($\beta = 0.682$).

Discussion

Based on the data analyzed using path analysis, we found that media multi-tasking efficacy (MME) has direct effect on cyberslacking. Furthermore, MME has a significant impact on students' sense of confidence, which enables them to follow the learning process while accessing the internet from their laptops or smartphones. However, students are unable to concentrate when carrying out these two activities as stated by research carried out by Bowman et al. (2010). The respondents in this research felt confident in using their laptop/cellphone to access the internet while listening and participating in classroom learning. This means that students carried out cyberslacking behavior, such as checking social media, chatting with friends on social media, or via applications e.g WhatsApp, etc during the learning process.

In the table 4 shown that there is a relationship between self-regulated learning analysis (SRL) and cyberslacking as explained by aspects of SRL which include the ability of students to set strategies in completing their assignments. Some students stated that they have many lecture assignments that need to be completed, hence they listen in class while accessing the internet. Another argument was also found that cyberslacking behavior by students is considered the fastest way to overcome boredom hence they can refocus on the learning process delivered by the lecturer. Further research showed that cyberslacking is carried out by students as a means of communication to complete other lecturers' assignments and as a solution to overcome boredom and refocus on learning.

This research indicates that cyberslacking negatively affects the academic performance of students in Indonesia. Therefore, the regular use of social media positively affects students' GPAs. This is similar to the studies carried out by Barks et al. (2011), Clayson and Haley (2013), and Ravizza et al. (2014). Subsequently, similar results were also presented in the research carried out by Wu et al. (2018) with a sample of students in China as well as Le Roux and Parry (2017) at a university in South Africa. Therefore, it can be concluded that the findings of this research are similar in different countries, which stated that the academic performance of students is negatively affected by the cyberslacking activities carried out inside or outside the classroom. This provides input for the university and the teachers to be able to provide intervention and guidance when students use the internet for activities that are not related to academics. Furthermore, various monitoring rules are needed to reduce the negative effects of this cyberslacking behavior.

Conclusion

This research aims to examine the effect of media multitasking efficacy and self-regulated learning on cyberslacking as well as determine the impact on the academic performance of students in Indonesia. This research provides empirical evidence for a multidimensional relationship between dimensions of workplace spirituality and employee engagement. Furthermore, studies related to cyberslacking in the scope of education are still mostly carried out in Western countries with few in Asian countries. Therefore, the research is generalized when they are adjusted to the context of students in Asian countries, such as in Indonesia, due to the differences in the learning processes. Based on the hypothesis testing, it is concluded that the media multi-tasking efficacy had direct effect with cyberslacking by 0.549 with a sig. level of 0.000 hence the H1 is supported and accepted. This supports several preliminary studies carried out by Brooks (2015),

Sanbonmatsu, et al., (2013), and Wu (2017) which stated that MME affects students' cyberslacking behavior. Furthermore, self-regulated learning had direct effect with cyberslacking by 0.290 with a sig. level of 0.003, hence H2 is supported. This analysis is in line with the studies carried out by Widiastuti and Margaretha (2016) which found a relationship between self-regulation and cyberloafing/cyberslacking behavior. According to these studies, cyberslacking has a negative effect on the academic performance of students in Indonesia with value of $\beta = -0.138$ with the sig. level of 0.005 hence H3 is accepted. This research is similar to previous studies carried out by Barks et al. (2011), Clayson and Haley (2013), Le Roux and Parry (2017), Ravizza et al. (2014), and Wu et al. (2018).

Recommendations

The findings in this research also provide several important implications for students and all academicians. The current era makes it common for people to meet and interact with technology daily, cyberslacking needs to be a concern for every individual and organization, especially for educational institutions where most of the technology users in this environment are certainly students. The use of mobile technology such as smartphones, tablets, laptops is not new to students, because the items make it easier for them to carry out the learning process inside and outside the classroom. However, in reality, not all students use this technology wisely and proportionally due to their varying character, which in turn makes them commit or reject cyberslacking behavior. Therefore, universities are advised to pay attention to the development and character education of students which in turn tends to create a culture capable of reducing the occurrence of cyberslacking behavior. This is achieved by providing training and technology-based character development or other similar activities regularly, including making various rules and monitoring necessary to reduce the negative effects of cyberslacking behavior.

Limitations

The authors suggest several important attributes for future studies, therefore, the research model and understanding of MME, SRL, cyberslacking, and academic performance becomes more comprehensive. Furthermore, practical suggestions also complement any weaknesses found in this research. Measurement of cyberslacking activity is carried out through self-reported evaluations which leads to a careless filling. Therefore, to overcome this self-reported data retrieval, subsequent studies need to be carried out by monitoring the frequency and duration of student cyberslacking behavior. Furthermore, this is a cross-sectional survey, hence future research needs to be carried out longitudinally to obtain a more dynamic effect between the variables studied. In this research, the role of the lecturer was not examined further, even though one of the factors responsible for students' participation in cyberslacking came from boredom during explanations. Therefore, factors from the environment that promote cyberslacking behavior such as the role of the teacher, learning methods, classroom situations, and classmates need to be considered in future research. Due to the Covid-19 pandemic, online surveys were widely used in the current research, hence the data collection process was time-consuming and the number of respondents that filled in the survey was not as expected. Therefore, future research needs to utilize various other methods for data collection to increase the number of respondents.

Authorship Contribution Statement

Margaretha: Concept and design, data analysis, writing, critical revision of manuscript, supervision. Sherlywati: Data acquisition, statistical analysis, editing. Monalisa: Data acquisition, editing, technical. Mariana: Data acquisition, securing funding, technical. Imelda: Data acquisition, technical. Martalena: Data acquisition, admin. Iskandar: Data acquisition, statistical analysis. Nur: Data acquisition, admin.

References

- Aguilar-Roca, N. M., Williams, A. E., & O'Dowd, D. K. (2012). The impact of laptop-free zones on student performance and attitudes in large lectures. *Computers & Education*, 59(4), 1300-1308. <https://doi.org/10.1016/j.compedu.2012.05.002>
- Akbulut, Y., Dursun, Ö. Ö., Dönmez, O., & Şahin, Y. L. (2016). In search of a measure to investigate cyberloafing in educational settings. *Computers in Human Behavior*, 55(2), 616-625. <https://doi.org/10.1016/j.chb.2015.11.002>
- Alt, D. (2017). Students' social media engagement and fear of missing out (fomo) in a diverse classroom. *Journal of Computing in Higher Education*, 29(4), 1-23. <https://doi.org/10.1007/s12528-017-9149-x>
- Anam, K., & Pratomo, G. A. (2019). Fenomena cyberslacking pada mahasiswa [The phenomenon of cyberslacking in college students]. *Intuition Research Psychology Journal/ Intuisi Jurnal Psikologi Ilmiah*, 11(3), 202-210.
- Arabaci, I. (2017). Investigation faculty of education students' cyberloafing behaviors in terms of various variables. *Turkish Online Journal of Educational Technology*, 16(1), 72-82.
- Barks, A., Searight, H. R., & Ratwik, S. (2011). Effects of text messaging on academic performance. *Signum Temporis: Journal of Pedagogy and Psychology*, 4(1), 4-9. <https://doi.org/10.2478/v10195-011-0039-0>

- Bellur, S., Nowak, K. L., & Hull, K. S. (2015). Make it our time: In class multitaskers have lower academic performance. *Computers in Human Behavior*, 53(12), 63-70. <https://doi.org/10.1016/j.chb.2015.06.027>
- Bennett, R. J., & Robinson, S. L. (2000). Development of a measure of workplace deviance. *Journal of Applied Psychology*, 85(3), 349-360. <https://doi.org/10.1037/0021-9010.85.3.349>
- Blanchard, A. L., & Henle, C. A. (2008). Correlates of different forms of cyberloafing: The role of norms and external locus of control. *Computers in Human Behavior*, 24(3), 1067-1084. <https://doi.org/10.1016/j.chb.2007.03.008>
- Bohang, F. K. (2018, February 22). *Berapa jumlah pengguna internet di Indonesia? [How many internet users in Indonesia?]*. Kompas.com. <https://bit.ly/2XiXjkB>
- Bowman, L. L., Levine, L. E., Waite, B. M., & Gendron, M. (2010). Can students really multitask? an experimental study of instant messaging while reading. *Computers & Education*, 54(4), 927-931. <https://doi.org/10.1016/j.compedu.2009.09.024>
- Brooks, S. (2015). Does personal social media usage affect efficiency and well-being? *Computers in Human Behavior*, 46(5), 26-37. <https://doi.org/10.1016/j.chb.2014.12.053>
- Clayson, D. E., & Haley, D. A. (2013). An introduction to multitasking and texting: Prevalence and impact on grades and GPA in marketing classes. *Journal of Marketing Education*, 35(1), 26-40. <https://doi.org/10.1177/0273475312467339>
- Doleck, T., & Lajoie, S. (2018). Social networking and academic performance: A review. *Education and Information Technologies*, 23, 435-465. <https://doi.org/10.1007/s10639-017-9612-3>
- Dunbar, D., Proeve, M., & Roberts, R. (2018). Problematic internet usage self-control dilemmas: The opposite effects of commitment and progress framing cues on perceived value of internet, academic and social behaviors. *Computers in Human Behavior*, 82(12), 16-33. <https://doi.org/10.1016/j.chb.2017.12.039>
- Flanigan, A. E., & Kiewra, K. A. (2018). What college instructors can do about student cyber-slacking. *Educational Psychology Review*, 30(2), 585-597. <https://doi.org/10.1007/s10648-017-9418-2>
- Gaudreau, P., Miranda, D., & Gareau, A. (2014). Canadian university students in wireless classrooms: What do they do on their laptops and does it really matter? *Computers & Education*, 70(1), 245-255. <https://doi.org/10.1016/j.compedu.2013.08.019>
- Ghozali, I. (2011). *Aplikasi analisis multivariate dengan program SPSS [Multivariate analysis application with the SPSS program]*. BP Universitas Diponegoro.
- Gökçearsan, Ş., Mumcu, F. K., Haşlaman, T., & Çevik, Y. D. (2016). Modelling smartphone addiction: The role of smartphone usage, self-regulation, general self-efficacy and cyberloafing in university students. *Computers in Human Behavior*, 63(10), 639-649. <https://doi.org/10.1016/j.chb.2016.05.091>
- Hair, J. F., Anderson, R. E., Babin, B. J., & Black, W. C. (2018). *Multivariate data analysis: A global perspective*. 8th Edition. Pearson Education.
- Hembrooke, H., & Gay, G. (2003). The laptop and the lecture: The effects of multitasking in learning environments. *Journal of Computing in Higher Education*, 15(3), 46-64. <https://doi.org/10.1007/BF02940852>
- Junco, R., & Cotten, S. R. (2012). No A 4 U: The relationship between multitasking and academic performance. *Computers & Education*, 59(2), 505-514. <https://doi.org/10.1016/j.compedu.2011.12.023>
- Kadioğlu, C., Uzuntiryaki, E., & Aydın, Y. Ç. (2011). Development of Self-Regulatory Strategies Scale (SRSS). *Education and Science*, 36(160), 11-23.
- LaRose, R., & Eastin, M. S. (2004). A social cognitive theory of internet uses and gratifications: Toward a new model of media attendance. *Journal of Broadcasting & Electron Media*, 48(3), 358-377. https://doi.org/10.1207/s15506878jobem4803_2
- Lee, S. W. Y., & Tsai, C. C. (2011). Students' perceptions of collaboration, self-regulated learning, and information seeking in the context of internet-based learning and traditional learning. *Computers in Human Behavior*, 27(2), 905-914. <https://doi.org/10.1016/j.chb.2010.11.016>
- Le Roux, D. B., & Parry, D. A. (2017). In-lecture media use and academic performance: Does subject area matter? *Computers in Human Behavior*, 77(12), 86-94. <https://doi.org/10.1016/j.chb.2017.08.030>
- Lim, V. K. G. (2002). The IT way of loafing on the job: Cyberloafing, neutralizing and organizational justice. *Journal of Organizational Behavior*, 23(5), 675-694. <https://doi.org/10.1002/job.161>

- McCoy, B. R. (2016). Digital distractions in the classroom phase II: Student classroom use of digital devices for non-class related purposes. *Journal of Media Education*, 7(1), 5-32.
- Ozhiganova, G. V. (2018). Self-regulation and self-regulatory capacities: components, levels, models. *RUDN Journal of Psychology and Pedagogics*, 15(3), 255-270. <https://doi.org/10.22363/2313-1683-2018-15-3-255-270>
- Pellas, N. (2014). The influence of computer self-efficacy, metacognitive self-regulation and self-esteem on student engagement in online learning programs: Evidence from the virtual world of Second Life. *Computers in Human Behavior*, 35(6), 157-170. <https://doi.org/10.1016/j.chb.2014.02.048>
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879-903. <https://doi.org/10.1037/0021-9010.88.5.879>
- Rashid, T., & Asghar, H. M. (2016). Technology use, self-directed learning, student engagement and academic performance: examining the interrelations. *Computers in Human Behavior*, 63(10), 604-612. <https://doi.org/10.1016/j.chb.2016.05.084>
- Ravizza, S. M., Hambrick, D. Z., & Fenn, K. M. (2014). Non-academic internet use in the classroom is negatively related to classroom learning regardless of intellectual ability. *Computers & Education*, 78(9), 109-114. <https://doi.org/10.1016/j.compedu.2014.05.007>
- Sanbonmatsu, D. M., Strayer, D. L., Medeiros-Ward, N., & Watson, J. M. (2013). Who multi-tasks and why? multi-tasking ability, perceived multi-tasking ability, impulsivity, and sensation seeking. *PLoS ONE*, 8(1), e54402. <https://doi.org/10.1371/journal.pone.0054402>
- Schunk, D. H. (2020). *Learning theories: an educational perspective* (8th ed). Pearson Education.
- Setiawan, W. Y. (2019). The impact of cyber-slacking on accounting students' academic performance: A preliminary study. *Review of Integrative Business and Economics Research*, 8(2), 352-359.
- Simanjuntak, E., Fajrianti, Purwono, U., & Ardi, R. (2019). Skala cyberslacking pada mahasiswa [Cyberslacking scale in college students]. *Psychology Journal/ Jurnal Psikologi*, 18(1), 55-68. <https://doi.org/10.14710/jp.18.1.55-68>
- Ugrin, J. C., & Pearson, M. J. (2013). The effects of sanctions and stigmas on cyberloafing. *Computers in Human Behavior*, 29(3), 812-820. <https://doi.org/10.1016/j.chb.2012.11.005>
- Varol, F., & Yildirim, E. (2018). An examination of cyberloafing behaviors in classrooms from students' perspectives. *Turkish Online Journal of Qualitative Inquiry*, 9(1), 26-46. <https://doi.org/10.17569/tojqi.349800>
- Vitak, J., Crouse, J., & LaRose, R. (2011). Personal internet use at work: Understanding cyberslacking. *Computers in Human Behavior*, 27(5), 751-1759. <https://doi.org/10.1016/j.chb.2011.03.002>
- Wentworth, D. K., & Middleton, J. H. (2014). Technology use and academic performance. *Computers and Education*, 78(9), 306-311. <https://doi.org/10.1016/j.compedu.2014.06.012>
- Widiastuti, R., & Margaretha, M. (2016). Personality factors and cyberloafing of college students in Indonesia. *International Journal of Applied Business and Research*, 14(13), 9227-9238.
- Wu, J., Mei, W., & Ugrin, J. C. (2018). Student cyberloafing in and out of the classroom in China and the relationship with student performance. *Cyberpsychology Behavior and Social Networking*, 21(3), 199-204. <https://doi.org/10.1089/cyber.2017.0397>
- Wu, J. Y. (2015). University students' motivated attention and use of regulation strategies on social media. *Computers & Education*, 89(11), 75-90. <https://doi.org/10.1016/j.compedu.2015.08.016>
- Wu, J. Y. (2017). The indirect relationship of media multitasking self-efficacy on learning performance within the personal learning environment: Implications from the mechanism of perceived attention problems and self-regulation strategies. *Computers & Education*, 106(3), 56-72. <https://doi.org/10.1016/j.compedu.2016.10.010>
- Yaşar, S., & Yurdugül, H. (2013). The investigation of relation between cyberloafing activities and cyberloafing behaviors in higher education. *Procedia-Social and Behavioral Sciences*, 83(6), 600-604. <https://doi.org/10.1016/j.sbspro.2013.06.114>
- Yilmaz, K. F. G., Yilmaz, R., Ozturk, H. T., Sezer, B., & Karademir, T. (2015). Cyberloafing as a barrier to the successful integration of information and communication technologies into teaching and learning environments. *Computers in Human Behavior*, 45(4), 290-298. <https://doi.org/10.1016/j.chb.2014.12.023>
- Yılmaz, R., & Yurdugül, H. (2018). Cyberloafing in IT classrooms: Exploring the role of the psycho-social environment in the classroom, attitude to computers and computing courses, motivation and learning strategies. *Journal of Computing in Higher Education*, 30(4), 530-552. <https://doi.org/10.1007/s12528-018-9184-2>

- Zhang, W. (2015). Learning variables, in-class laptop multitasking and academic performance: A path analysis. *Computers & Education, 81*(2), 82-88. <https://doi.org/10.1016/j.compedu.2014.09.012>
- Zimmerman, B. J., & Schunk, D. H. (2011). *Handbook of Self-Regulation of Learning and Performance*. Routledge-Taylor & Francis.