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Correlation between social networking time use and self-control of university students in Indonesia

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Abstract

Social networking sites (SNSs) play a role in communication and connection among people. SNSs are currently the most popular online communication platforms for university students. However, many users experience difficulty managing the urge to use these sites continuously, resulting in excessive time spent on the platforms. Thus, they also display difficulty in overriding their thoughts, which might be related to self-control. The correlation between social networking time use and self-control of university students in Indonesia remains unknown. This study investigated the correlation between social networking time use and self-control among Indonesian university students. This research was conducted through an online survey with 973 university students as participants. The questionnaire collected data on demographics, self-control scale (SCS), and social networking time use scale (SONTUS) to measure time spent on SNSs. This study found that the higher levels of self-control were significantly correlated to spending less time on SNSs. It also found that the higher level of the factor of self-control, such as self-discipline, the ability to do non-impulsive action, health habits, work ethic, and reliability, the less the time spent on SNSs. A higher self-control also significantly correlates with less time on SNSs in relaxation, academic, public places, and stress-related use.

Introduction

University students visit social networking sites (SNSs), which may be multiple times per day (Miller & Melton, 2015). Thus, many users experience difficulty in managing the urge to use these sites continuously, resulting in excessive time spent on the platforms (Andreassen, 2015). As a result, they displayed difficulty in overriding their thoughts, which might be related to self-control. Previous studies demonstrated that people with limited self-control are prone to various type of addictive behaviors. For instance, they might be unable to resist the temptation and, thus, spent excessive time on the Internet (Li et al., 2014). Individuals with low levels

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of self-control trait were predicted to exhibit frequent SNS use (Brevers & Turel, 2019).

Jiang and Zhao (2016) and Servidio (2021) conducted studies on university students in China and Italy respectively, and demonstrated that poor self-control might lead to high chance of problematic smartphone use. In general, students compulsively use smartphones to access SNSs, check messages, and view SNS profiles and WhatsApp groups. Thus, they are more likely to be attracted to use smartphones for interpersonal communication. However, the above-mentioned studies did not directly describe the correlation between the universal use of SNSs and self-control. Moreover, the correlation between social networking time use and self-control among university students in Indonesia remains unknown. Several studies assessed social media and its impact on the student in Indonesia. Indonesian students with higher social media addiction scores had a greater likelihood of experiencing mild depression (Sujarwoto et al., 2021). In addition, time, productivity, and relations influence social media and gadget addiction (Pratama et al., 2020). Since addiction may affect students' productivity and mental health, this study about self-control and social media addiction may give clues to reduce social media addiction in Indonesian students. Therefore, this study aimed to investigate this correlation between self-control and social media time use.

Literature Review

SNSs are web-based platforms for building social networks between people sharing common interests or activities to interacting via the Internet (Baruah, 2012). SNSs have been utilized for a variety of purposes (e.g. communication, entertainment, education, social, and emotional; Olufadi, 2016) and are currently accessible via a variety of platforms, including smartphones. As a result, they have become one of the most widely used online communication channels among university students (AlBarashdi, 2020). In particular, they utilize SNSs to communicate with friends, family, and relatives (Subrahmanyam et al., 2008).

Self-control pertains to the competence to override or adjust one's internal reaction, which can interrupt unwanted behavior inclinations (i.e. impulse) and refrain one from acting on them (Tangney et al., 2004). Individuals with high levels of self-control are less likely to be influenced by their impulses, whereas the opposite is true for people with poor levels of self-control. Addiction, particularly, has long been viewed as a failure to exert self-control over impulses (West & Brown, 2013).

Learning is the activity or process of gaining knowledge or skill. Attention to the learned material may be the most important of all the factors that influence learning since it helps to improve memory (Chunn & Turkbrown, 2007; Posner & Rothbath, 2014), and it may affect academic achievement. In the present condition, attention could be distracted by addiction to social media (Wood et al., 2012). Thus, an individual must omit the distraction to social media. The ability to remove the distraction may relate to the power of self-control.

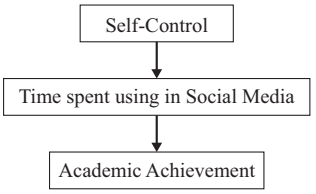

Figure 1 The relationship between self-control, time spent using in social media and academic achievement

Methodology

Data Collection and Participants

A national cross-sectional study was performed between November 2020 and December 2020 through an online questionnaire, which was distributed *via* social media (e.g., WhatsApp, Instagram, Twitter, and LINE). The online form consisted of four sections; the first section was the introductory page, informing respondents about the study and informed consent; the second section asked about demographic information, such as age and academic performance (Grade Point Average (GPA)); the third section asked about the social networking time use scale (SONTUS); the last section asked about the self-control scale (SCS). The IPB University Ethics Committee approved the study (No: 305/IT3.KEPMSM-IPB/SK/2020), and the methods were carried out in accordance with the ethical approval.

The social networking time use scale (SONTUS) was used to determine how much time was spent on SNSs (Olufadi, 2016). This self-reported questionnaire had 29 items separated into five categories, namely, relaxation and free time, academic-related time, public-place related time, stress-related time, and use motives. An 11-point Likert-type scale was used to rate the items. The questionnaire was translated into and presented in Bahasa Indonesia.

Tangney et al. (2004) developed the self-control scale (SCS), a 36-item self-report questionnaire to assess one's level self-control. A five-point Likert-type scale was used

to rate the items. The questionnaire had 36 items that were divided into five categories, namely, general capacity for self-discipline, deliberative or non-impulsive actions, health habits, work ethics, and reliability (Unger et al., 2016). The questionnaire was also translated into and presented in Bahasa Indonesia.

Data Analysis

Statistical analysis was conducted using statistical software RStudio software version 4.0.3 (R Core Team, 2020) for descriptive statistics and correlation analysis. The correlation between the variables was determined using Spearman's rank correlation coefficients. To assess differences between sex and self-control, analysis of variance was applied. Lastly, the Kruskal–Wallis test was used to see whether there were any differences in sex and social networking time use (Sugiyono, 2013).

Results

The main research topic of this research was the correlation between social networking time use and self-control. The secondary research topic was the correlation between social networking time use and self-control with several demographic factors, such as age and GPA.

A total of 973 university students (males = 248; 25.49%) in Indonesia were recruited for the study. Age ranged from 17 to 49 years (mean = 20.58 ± 2.14 years; males = 20.99 ± 2.09 years; females: 20.44 ± 2.14 years).

Social networking time use scale (SONTUS)

This study found that many of the respondents were categorized as average SNS users (49.64%; Table 1) (Kruskal–Wallis, $p = .3694$).

Duration of Social Networking Service Use

This study found that many of the respondents spent 5–6 h per day on SNSs (26.93%; Table 2). The female students spent more time on SNSs compared with the male respondents. Twenty eight percent of the female respondents spent 5–6 hours per day on SNSs; in contrast, the male students (37.10%) spent 3–4 hours per day over the previous week (Table 2).

Table 1 Scores for SONTUS

Categories (Min Scale-Max Scale)	Sex	*n*	Total *n*	Percentage (%)
Low user of SNSs (5–9)	Male	42	145	4.32
	Female	103		10.59
Average user of SNSs (10–14)	Male	121	483	12.44
	Female	362		37.20
High user of SNSs (15–19)	Male	73	300	7.50
	Female	227		23.33
Extremely high user of SNSs (> 19)	Male	12	45	1.23
	Female	33		3.39
Total		973	973	100

Table 2 Duration of SNS use

Duration (h)	Variable	*n*	Percentage (%)	Percentage for each sex (%)
1–2	Male	31	3.19	12.50
	Female	39	4.01	5.38
3–4	Male	92	9.46	37.10
	Female	155	15.93	21.38
5–6	Male	59	6.06	23.70
	Female	203	20.86	28.00
7–8	Male	34	3.49	9.67
	Female	142	14.59	19.58
9–10	Male	15	1.54	6.04
	Female	60	6.17	8.28
> 10	Male	17	1.75	6.85
	Female	126	12.95	17.37
Total		973	100	

Self-Control Scale

The minimum and maximum scores on the SCS were 70 and 162, respectively, with a mean score of 118.74. This study found that male students displayed significantly higher levels of self-control than female students (males: 121.68; females = 117.74; analysis of variance: p = .000149). The mean of each factor of self-control scale is shown in Table 3.

Table 3 Mean of each factor of self-control scale

Factors of Self-Control Scale	Mean (All)	Mean (Male)	Mean (Female)
General capacity for self-discipline	33.87	35.16	33.43
Deliberative or non-impulsive actions	31.97	32.25	31.87
Health habits	19.41	19.77	19.29
Work ethics	15.07	15.64	14.88
Reliability	18.40	18.84	18.24

Correlation between Social Networking Time Use Scale and Self-Control Scale

High levels of self-control were correlated with less social networking time use (cor. test; $R = -.31$; $p < 2.2e{-}16$). A similar conclusion was also seen when we separated the analysis between male and female (cor.test; male: $R = -.0.2618009$, $p = 2.9e{-}05$; female: $R = -.0.32$, $p < 2.2e\text{-}16$). In other words, students with high levels of self-control were likely to control their social networking time use more than students with low level of self-control.

Correlation between Social Networking Time Use Scale Components and Self-Control Scale Scores

Significant negative correlations were noted between SCS scores and SONTUS components. We found that the higher level of self-control, the less the SNS usage during relaxation and free time, academic-related time, public-place related time, stress-related time (Spearman's cor. test: $R < 0$; $p < .05$) (Table 4).

Correlation between Self-Control Scale Factors and Scores for Social Networking Time Use Scale

The study observed significant negative correlations between SONTUS scores and SCS factors (Spearman cor. test: $R < 0$; $p < .05$; Table 5). This result implied that the higher the level of factors of self-control, which is indicated from the general capacity for self-discipline, deliberative or non-impulsive actions, health habits, work ethics, and reliability, the less the SNS time use.

Correlation between Social Networking Time Use and Demographics

A significant negative correlation between SONTUS and age was discovered in the study. This result indicated that social networking time use decreased with the increase in age. Furthermore, as indicated in Table 6, there was no significant correlation between *social networking time use* and academic achievement (GPA).

Table 4 Correlation between social networking time use scale components and self-control scale scores

Component of social networking time use	Scores for self-control scale score (All)		Scores for self-control scale score (Male)		Scores for self-control scale score (Fale)	
	Rho	p	Rho	p	Rho	p
Relaxation and free time	−.27	<2.2e−16	−0.21	5.53e−04	−0.29	8.7e−16
Academic-related time	−.21	1.032e−10	−0.13	.0037	−0.22	4.4e−10
Public-place related time	−.16	3.978e−07	−0.18	.031	−0.17	1.71e−06
Stress-related time	−.31	<2.2e−16	−0.31	3.81e−07	−0.29	1.12e−15
Use motives	−.11	.0004295	−0.07	.23	−0.12	.001

Table 5 Correlation between self-control scale factors and scores of the social networking time use, from SONTUS

Factors of Self-Control Scale	Scores SNS Use, from SONTUS (All)		Scores SNS Use, from SONTUS (Male)		Scores SNS Use, from SONTUS (Female)	
	Rho	p	Rho	p	Rho	p
General capacity for self-discipline	−.27	<2.2e−16	−0.22	.0003	−0.27	1.6e−14
Deliberative or non-impulsive actions	−.26	2.901e−16	−0.23	.0002	−0.26	2.9e−13
Health habits	−.22	3.202e−12	−0.20	.001	−0.22	1.23e−09
Work ethics	−.18	3.109e−08	−0.17	.004	-0.16	5.33e−06
Reliability	−.13	8.814e−05	−0.08	.19	-0.13	.0002

Table 6 Correlation between social networking time use scale and demographic data

Demographics	Social networking time use (all)		Social networking time use (Male)		Social networking time use (Female)	
	Rho	*p*	Rho	*p*	Rho	*p*
Age	−.12	.0001797	−.031	.622	−.14	7.65e−05
Academic achievement (GPA)	−.031	.37	−.027	.676	−.031	.4298

Note: *$p < .05$.

Correlation between Self-Control Scale and Demographics

According to our findings, the SCS score and age had a significant positive correlation. This finding suggested that as people get older, their level of self-control improves. Furthermore, SCS score was significantly positively correlated with academic achievement, which implies that the higher the academic achievement, the higher the self-control (Table 7).

Discussion

The present study demonstrated that the majority of the respondents were SNS users with average engagement. This result is similar to that of Alfarizi et al. (2020). In addition, the current study obtained a mean SCS score of 118.74 with possible minimum and maximum scores at 36 and 180, respectively. This result indicates that the majority of respondents exerted reasonable control over their behavior, which is in line with that of Mardliyah (2020), who obtained a mean SCS score of 115.2 among university students.

The present study observed a negative correlation between social networking time use and self-control, which indicated that the higher the level of self-control, the less time spent on SNSs. Moreover, high levels of self-control were negatively correlated to all motives for SNS use. SNSs use was also negatively correlated with high scores on self-control variables. These findings are consistent with those of prior research, which indicated that a lack of self-control becomes a predictor of excessive SNS use (Cudo et al., 2020). Individuals with high levels of self-control trait can better avoid excessive SNS time use because enacting self-control strategies toward SNS use is easier for this group. Thus, they develop less SNS use habits.

Previous research has shown that individuals aged 18–34 years spent more time on social media than those aged 35–54 years (Statista, 2020). In line with this finding, our study also found a decrease in social networking time use with the increase in age. (Okray et al., 2018) obtained similar findings for SNS use among older individuals. Older individuals tend to use SNSs only to conform. Conversely, younger individuals are more likely to explore all available activities. Moreover, they might be more accustomed to using technology compared with older individuals (Orchard et al., 2014). Another possible reason for this result is that older university students hold jobs, such as worker (e.g. part-time worker, internship employee, and freelancer), so they used less time for SNSs.

The current findings also indicate that social networking time use is not correlated with the academic achievement of university students, which was measured using GPA. In this regard, Tarigan et al. (2019) demonstrated that social networking time use is not correlated to academic achievement among university students in Indonesia. This finding differs from the majority of studies conducted outside Indonesia, which showed the detrimental impact of increased SNS use on the university students' academic performance in Ethiopia (Tafesse, 2020). In order to study in a less structured environment, university student might be more sensitive to the detrimental effects of SNSs (Liu et al., 2017). Thus, they could decide whether to attend lessons and study without direct parental supervision. This condition indicates that they should place a larger emphasis on their capacity to self-regulate their study and study habits. Many respondents in the present study used SNSs

Table 7 Correlation between self-control scale and demographics

Demographics	Self-control scale		Self-control scale (Male)		Self-control scale (Female)	
	Rho	*p*	Rho	*p*	Rho	*p*
Age	−.13	7.067e−05*	.08	.1758*	.12	.0007*
Academic achievement (GPA)	.07	.044*	.079	.236*	.088	.029*

Note: * $p < .05$.

for 5–6 hours per day and are considered SNS users with average engagement according to the SONTUS. This result indicated they spent a large amount of their time studying, which may lead to the high GPA, which may also be affected by their ability to practice self-control.

This study also observed a positive correlation between high levels of self-control and academic achievement, which is consistent with that of Tangney et al. (2004), who found evidence that people with high levels of self-control achieved better grades. Self-control is important for academic performance because it cannot only predict internally (i.e., distraction) but also externally (i.e., interruption) initiated disturbances. Individuals with high levels of self-control can obtain favorable outcomes by putting forth more proactive scenario selection and modification effort (e.g. avoiding the desire to check emails while writing a paper or choosing to work on a paper in a library instead of at home, which results in less interruptions) (Moon et al., 2020). Moreover, this study found that self-control increased with the increase in age. Chiesi et al. (2020) also reported low levels of self-control among younger individuals, especially, young individuals as adolescents acting on gut feelings without fully considering their actions. In contrast, older individuals display increased willingness to delay gratification (Steinberg, 2007).

This study also noted that female students exhibited low levels of self-control. As such, they displayed high levels of SNS use. This result is different from those of previous research. For example, Pechorro et al. (2021) reported that females exerted stronger self-control than males, whereas Chapple and Johnson (2007) proposed that females tend to be more monitored and controlled in contrast to males, who are prone to impulsiveness and risk-taking. Therefore, the tendency to reduce self-control may eventually become part of the male identity. This difference may be due to the increased levels of non-impulsive actions among the male students in this research as indicated by the low levels of SNS use. Thus, those with strong self-control can overcome their impulsive behaviors even if such may provide immediate pleasure (Mamayek et al., 2017).

From the point of view of cognitive ability, the excessive time of SNSs use is associated with impulsive behaviors that provide immediate pleasure, implying that it is also linked to reward and punishment processing in the brain. Dong et al. (2011) scanned the brains of individuals with internet addiction disorder and controls when receiving a guessing task. The findings showed that internet addicts had higher orbitofrontal cortex activation in gain trials and lower anterior cingulate activation in loss trials than normal controls. The orbitofrontal cortex regulates impulse control and decision-making. This finding showed that internet addicts have higher reward sensitivity and lower loss sensitivity than non-addicts.

Another study suggested that craving reactions were correlated with prefrontal brain changes. Internet addiction was associated with functional brain changes involving parts of the prefrontal cortex, accompanied by changes in other cortical (e.g., temporal) and subcortical (e.g., ventral striatum) regions. These results suggest that prefrontal control processes are reduced in individuals who are addicted to the Internet (Brand et al., 2014). Due to the similarities between craving of internet use and SNSs use, it is possible that the same neurobiological mechanisms cause excessive time in use of SNSs. Together with those studies, our result implies that frequency of student activity in social media may impact cognitive ability. More neurobiological research is needed to establish this link for SNS in particular.

Conclusion and Recommendation

This study found that the majority of the university students were SNS users with average engagement. It also found that higher levels of self-control are significantly correlated to less time spent on SNSs. We also found that the higher level of the factor of self-control, such as self-discipline, the ability to do non-impulsive action, health habits, work ethic, and reliability showed a significant correlation to less time spent on SNSs. Higher self-control also significantly correlates with less time on SNSs in relaxation, academic, public places, and stress-related use. There was no direct relationship between SNSs and academic achievement. However, academic achievement was correlated with higher self-control.

This research has its limitations. The participants were not representative of all universities in Indonesia. Moreover, it did not categorize the time for specific SNS use. Thus, future research should extend the results of the current study to all universities and categorize SNS uses.

Conflict of Interest

The authors declare that there is no conflict of interest.

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