

The Role of Self-Regulation on the Tendency of Nomophobia in College Students

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ABSTRACT

The advancing development of information and communication technology has resulted in the widespread integration of gadgets into nearly all aspects of daily life and the learning process. The use of gadgets not only facilitates daily activities but, when used excessively, can give rise to adverse consequences, one of which is Nomophobia. Individuals experiencing nomophobia develop a dependency on their smartphones, leading to excessive worry when they are separated from their smartphone or when its battery is depleted. There are several efforts aimed at preventing the emergence of Nomophobia, one of which involves self-regulation. The objective of this research is to examine the role of self-regulation in the predisposition towards Nomophobia among university students. The research design employed is quantitative correlational with a non-probability sampling technique, specifically purposive sampling. The research population comprises 1,411 university students at University X, with a sample size of 93 students determined using the Slovin formula. Data was collected using the Nomophobia questionnaire developed by Yildirim and the Self-Regulation scale by Bandura. Based on the results of hypothesis testing, an R value of 0.288 was obtained ($F = 8.230$; $p < 0.05$). Based on the results of data analysis and discussion that has been presented, the results show that self-regulation has a positive effect on nomophobia. The effective contribution of self-regulation to the propensity for nomophobia is 18.3%, while the remaining 81.7% is attributed to other variables or factors. The research findings indicate that 71% of the subjects exhibit high self-regulation, 18.3% possess very high self-regulation, and 10.2% demonstrate moderate self-regulation. As for the tendency towards Nomophobia among the research subjects, 34.4% display a low tendency, 25.8% fall into the moderate category, 20% exhibit a high tendency towards Nomophobia, and 19.8% are classified as having a very high tendency.

Keywords: Nomophobia, Self-Regulation, University Students

ARTICLE INFO

Article history

Received : 2024-02-16

Revised : 2024-09-08

Accepted : 2024-09-17

Introduction

The increasing development of information and communication technology has made the development of communication tools increasingly sophisticated and massive, one of which is a smartphone. Smartphones are devices that have many features such as entertainment (games, social media) or to help with daily activities such as agendas, calendars, calculators, and various applications whose use uses internet access (Amalia & Hamid, 2020). The use of smartphones is currently experiencing a significant increase. The survey results of the Indonesian Internet Service Providers Association (APJII) in 2021-2022 revealed that the device used to access the internet was mostly mobile phones/tablets (smartphones) by 89.03%, then computers/laptops by 0.73%, and using both (computers/laptops and smartphones) by 10.24% (APJII, 2022). Students are one of the most smartphone users in Indonesia, which is around 53.99% (APJII, 2022). The use of smartphones in students is one of the things that cannot be separated because it can help daily activities such as helping the learning process, financial transactions (tuition payments), communicating in cyberspace, as a means of entertainment and others (Agniwijaya & Hamidah, 2019). Losing a mobile phone or internet connection can be a stress for some people (Buctot et al, 2020). And excessive use of gadgets (smartphones) can also have a negative impact, one of which is *Nomophobia* disturbance (Dasiroh, 2017).

Nomophobia (No Mobile Phone Phobia) is experienced by individuals who are dependent on their smartphones, leading to excessive anxiety. Nomophobia is a specific phobia term coined after its description in the Diagnostic and Statistical Manual of Mental Disorders (DSM-V), referring to an anxiety disorder characterized by fear or anxiety about specific objects or situations. Animals, nature, blood, needles, and other medical procedures all stand out as sources of irrational fear for some people (APA, 2013). The term "nomophobia" specifically refers to the fear of being without a mobile phone. Nomophobia is the fear of being disconnected for an extended period, such as when someone loses phone service, runs out of battery, forgets to answer a call, or fails to check their email. In short, losing a phone is a psychological fear (Yildirim, 2014).

Several factors contribute to nomophobia, including feelings of loneliness, diverse social media applications, various entertainment features, and smartphone games, making individuals anxious when away from their smartphones. Individuals experiencing nomophobia spend more time with their smartphones than interacting with those around them (Kendler in Davidson et al., 2006). Dixit et al. (2010) found in their study that out of 53% males and 47% females, 18.5% experienced nomophobia. Nomophobia sufferers may check their smartphones

more than 34 times a day and often bring them to the toilet, using smartphones intensively for more than 4 hours (Sudarji, 2017). If the duration of smartphone usage exceeds 4 hours, there is a tendency towards smartphone addiction (Aljoma et al., 2016).

Nomophobia sufferers exhibit several characteristics, including a) spending a lot of time with their smartphones; b) having one or more smartphones and always carrying a charger; c) feeling anxious and nervous about losing or being away from their smartphones; d) avoiding places that prohibit smartphones, such as airports and cinemas; e) frequently checking smartphones for messages or calls; f) keeping smartphones active 24/7; g) sleeping near their smartphones; h) feeling anxious and stressed when interacting face-to-face and preferring online interaction; i) spending a significant amount of money on mobile credit and smartphone usage (Bragazzi & Del Puente, 2014).

Similar sentiments are expressed by Kanmani et al. (2017), stating that individuals experiencing nomophobia never turn off their phones, obsessively check unanswered messages and calls, carry phones everywhere, use phones at inappropriate times, and miss direct interactions. Nomophobia has many characteristics, but a key one is that any disturbance to the smartphone is a source of relief and comfort for the individual (Harkin, 2003). Nomophobia symptoms become evident when an individual cannot go even a minute without their phone (Gupta, 2019). In addition to the mentioned characteristics, Kanmani (in Safira, 2021) also reveals that those experiencing nomophobia have difficulty in establishing meaningful direct relationships.

For students, dependence on their smartphones can affect various aspects of their lives, such as reduced study concentration and declining academic performance. Various efforts can be made to prevent individuals from becoming smartphone-dependent, including practicing good self-regulation to control smartphone usage and avoid dependency (Deursen, 2015). Self-regulation is an individual's ability to employ cognitive, behavioral, and affective strategies to control themselves and perform a series of actions to achieve learning goals (Effendi, 2017). The three main components of self-regulated learning are "cognitive strategies," "metacognitive strategies," and "motivation" (Damaianti, 2021). Bandura (in Pisani, 2017) identifies three components of self-regulation as Self-Observation, Judgmental Process, and Self-Response Process. Self-Observation is the ability to maintain attitudes, feelings, and actions in various situations, Judgmental Process is the ability to assess and evaluate one's behavior and compare it with prevailing norms, while Self-Response Process is the individual's reaction to their self-evaluation.

Deursen et al. (2015) state that, according to addiction theory, those who feel anxious when away from their smartphones exhibit a form of the individual's inability to regulate themselves properly. However, is it certain that individuals who can control smartphone usage well are capable of self-regulation? Considering that almost all aspects of life are now controlled through the internet, one of its accesses being through smartphones, for students, smartphones are vital devices that support various activities such as learning, completing assignments, communication, and entertainment. Given this, the researcher is interested in studying the Role of Self-Regulation in the Tendency of Nomophobia in Students.

Method :

The research method used is correlational quantitative to determine the strength of the relationship between two variables (Azwar, 2018). The research subjects are 93 students calculated using the Slovin formula with purposive sampling technique, selecting samples from the population with specific characteristics (Hadi, 2017). Sample characteristics include active students aged 18-25, owning smartphones, using smartphones 20-35 times a day for more than 4 hours intensively, and having a tendency for nomophobia based on initial surveys.

The measured research variables are Self-Regulation and Nomophobia. Self-regulation is an individual's ability to control themselves to focus feelings and actions to achieve a goal. Aspects of self-regulation in this study include (1) Self-Observation, (2) Judgmental Process, and (3) Self-Response Process. Self-regulation is measured using a questionnaire adapted from Pisani (2017) based on Bandura's theory, with a total of 25 items. A high total score indicates high self-regulation, and vice versa.

Nomophobia is an excessive anxiety and fear disorder experienced by individuals when away from their smartphones. Aspects of nomophobia in this study are (1) Not being able to communicate, (2) Losing connectedness, (3) Not being able to access information, and (4) Giving up convenience. The measuring instrument used is the Nomophobia Questionnaire (NMP-Q) adapted from Yildirim and Correia (2014) to measure nomophobia tendencies, with a total of 24 items. High nomophobia tendencies are obtained from higher total scores, and vice versa. Data analysis in the study uses a simple regression analysis to determine the effective contribution of the measured variables (Hadi, 2017).

Results :

Based on the hypothesis testing results, an R value of 0.288 was obtained ($F = 8.230$; $p < 0.05$). The research results indicate that each one-point increase in self-regulation will lead to a 0.183 increase in nomophobia tendencies. The effective contribution of self-regulation to nomophobia tendencies is 18.3%, while the remaining 81.7% is caused by other variables or factors. Other data obtained in this study include 93 responses examined, with 34.4% experiencing low nomophobia tendencies, and 71.0% having high self-regulation. This indicates that the self-regulation possessed by students can influence the decrease in nomophobia tendencies.

Tabel 1. Empirical and Hypothetical Data

Statistik	Self Regulation		Nomophobia	
	Hypothetical	Empirical	Hypothetical	Empirical
X Maximum	100	94	96	96
X Minimum	25	60	24	50
<i>Mean</i>	62.5	75	60	69,3
Standar Deviasi	12.5	6	12	10,7

Additionally, it is known that the results show high self-regulation on the research subjects, indicated by an empirical average of 75 and a hypothetical average of 62.5. Meanwhile, the nomophobia variable has an empirical average of 69.3 and a hypothetical average of 60, indicating high nomophobia on the subjects.

Tabel 2. Categorization of Research Variable Description

Variable	Categorization	Value Range	Frequency	%
Self Regulation	Very high	$81,25 < X$	17	18,3%
	High	$68,75 < X \leq 81,25$	66	71,0%
	Medium	$56,25 < X \leq 68,75$	10	10,8%
	Low	$43,75 < X \leq 56,25$	-	-
	Very low	$X \leq 43,75$	-	-
Nomophobia	Very high	$78 < X$	18	19,8%
	High	$66 < X \leq 78$	19	20,0%
	Medium	$54 < X \leq 66$	24	25,8%
	Low	$42 < X \leq 54$	32	34,4%
	Very low	$42 < X$	-	-

Based on the categorisation of the research subjects' scores, the majority of respondents had a high level of self-regulation as shown by the highest percentage of 71.0% at a high level. While on the nomophobia variable, the results showed that the majority of respondents had a low tendency of nomophobia, which was shown by a percentage of 34.4% of students. Based on the

categorization of the research variable scores, most respondents have high self-regulation (71.0%) and low nomophobia tendencies (34.4%).

Tabel 3. Normality test

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		93
Normal	Mean	.0000000
Parameters ^{a,b}	Std. Deviation	10.33215036
Most Extreme	Absolute	.081
Differences	Positive	.061
	Negative	-.081
Kolmogorov-Smirnov Z		.780
Asymp. Sig. (2-tailed)		.577

The Kolmogorof-Smirnov Z value for the data distribution in this study is 780, and the significance level is 0.577 ($p > 0.05$), so it is concluded that the residual values follow a normal distribution. Meanwhile, a significant deviation from linearity ($0.484 > 0.05$) was found when comparing nomophobia and self-control ($F 0.994$ and $p = 0.170$ ($p < 0.05$)), meaning that there is a linear relationship between the two variables. Then based on hypothesis testing, it was found that the ability to self-regulate is a strong predictor of nomophobic behaviour, as shown in table 4. The R value of 0.288 ($F = 8.230$; $p < 0.05$) from the simple regression analysis supports the null hypothesis of the study that participants' ability to self-regulate will have a significant effect on their level of nomophobia.

Table 4. Hypothesis Test

Variabel	R	Rsquare	F	Sig
X : Self Regulation	0,288	0.183	8,230	p=0,008 < 0,005
Y : <i>Nomophobia</i>				

Based on the results of the study, respondents have a high potential to develop nomophobia tendencies, but the Rsquare (R²) value shows that self-regulation provides an effective contribution of 18.3% while 81.7% is caused by other variables or factors.

Table 5. Description of subject's age

Age	Number	Percentage
19 Tahun	2	2,2%
20 Tahun	42	45,1%
21 Tahun	22	23,7%
22 Tahun	24	25,8%
23 Tahun	3	3,2%
Total	93	100%

Discussion

This study was conducted with the aim of identifying the role of self-regulation on the tendency of nomophobia among university students. This study involved 93 student subjects obtained from the Slovin formula. Hypothesis testing yielded a significance level of 0.05, so R equalled 0.288 ($F = 8.230$). The study found that a one-point increase in self-regulation would lead to a 0.183 increase in nomophobia tendency. The effective contribution given by self-regulation to nomophobia tendencies is 18.3% while 81.7% is caused by other variables or factors. Bivin et.al (2013) explain other factors that influence nomophobia include; the demands of modern life, the use of mobile phones in the workplace, and the rise of social media. Nomophobia can also be influenced by the level of smartphone use, their habits, and their level of dependence on their mobile devices, as described by Widyastuti (2018). Bianci and Philips (in Safira, 2021) agree, arguing that gender, age, self-esteem, and extroversion also play a role in shaping an individual's tendency towards nomophobia. Nonetheless, Yuwanto (2010) argues that a number of external and situational factors, including exposure to advertising media and the facilities provided, feelings of stress, sadness, loneliness, anxiety, boredom, and learning boredom, as well as factors from the social environment, contribute to the development of nomophobia.

The results of this study are in line with Safira's (2021) research that self-regulation is positively correlated with smartphone use or nomophobia. Meanwhile, several previous studies have stated that self-regulation is negatively correlated with nomophobia tendencies (Jiang & Zhao in Safira, 2021). Although self-regulation is considered a critical predictor of excessive

smartphone use, no research has been found that explores more deeply how self-regulation can affect nomophobic tendencies. The results of this study show that self-regulation is positively correlated with information seeking patterns when students use smartphones.

This study reveals that the need for smartphone use is very high but the intensity of controlling smartphone use is also high. This is a new finding that the use of smartphones has now become a necessity (lecture activities, tuition payments, competency exams) so that the low intensity of using smartphones will be less relevant to the results obtained in the field, for current students, especially since the learning system has implemented a hybrid, it is very easy to use a smartphone (Anami, 2021).

Then, based on gender distribution, the data shows that of the 93 research subjects, the majority were female with a total of 65 people (69.9%), while male subjects numbered 28 people (30.1%). This finding is consistent with the results of previous studies, as expressed by Widyastuti (2018), which showed that the tendency towards nomophobia does not discriminate by gender, meaning that individuals of both genders have the same susceptibility to this phenomenon. This indicates that factors other than gender may play a more significant role in influencing the level of nomophobia tendency, such as psychological factors such as self-regulation and a tendency towards dependence on technology.

A study conducted by Katharine in Widyastuti (2018) in the UK on 2163 participants showed that 53% of participants felt anxious when they lost access to their smartphones, either due to running out of battery, losing the device, or no network. This percentage shows the prevalence of anxiety related to dependence on smartphones which is quite high in modern society. In the study, men showed a higher tendency towards nomophobia with a figure of 58%, compared to 48% in women. These findings can be interpreted as men possibly having different dynamics of technology usage, which makes them more prone to anxiety when not connected

through their devices. However, this also requires further exploration to understand whether differences in social context or gender roles contribute to these results.

In addition, 9% of participants in the study expressed feelings of distress when their mobile devices were inactive. This suggests that anxiety due to not being able to use a smartphone is not simply a matter of accessibility, but may be related to deeper psychological aspects, such as the fear of losing social connections. When asked why they felt anxious when not being able to use their smartphone, 55% of respondents stated that they wanted to stay connected with those closest to them. This fact supports the hypothesis that smartphones have become a very important medium for maintaining social relationships, and the inability to access them can trigger negative emotional responses. It also emphasizes the importance of self-regulation in dealing with situations that limit access to technology.

Thus, these findings emphasize the relevance of self-regulation in reducing the tendency of nomophobia, where individuals with good self-regulation skills are more likely to be able to manage their anxiety when not able to access their smartphones. This indicates that interventions focused on improving self-regulation may be an effective strategy in addressing the negative impacts of nomophobia. Based on age, this study shows that 93 respondents ranged from 19 to 23 years old, in the low nomophobia tendency category. The results of this study are in line with research conducted by Rakhmawati (2017) that from the age range of 18-24 years, the highest nomophobia tendency is experienced by students aged 21 and 22 years with a percentage of 61%. However, this study contradicts previous research by Yildirim (2014) who found that those who have just entered adulthood, namely ages 18-24, are very vulnerable to experiencing nomophobia with a significance of 77% (high category).

Conclusion

Based on the results of data analysis and discussion that has been presented, the results show that self-regulation has a positive effect on nomophobia with an effective contribution of 18.3%. From the results of the study, it was found that most respondents had high self-

regulation (71%) and low levels of nomophobia (34.4%). However, based on the results of hypothesis testing, the direction of the relationship is positive, because the needs associated with the use of smartphones are getting higher, so the results show that there is a positive role of self-regulation variables on nomophobia tendencies, namely the higher the nomophobic behaviour that appears, the higher the level of self-regulation. However, according to the age analysis those aged between 20-24 years old are particularly at risk of developing the fear of being away from smartphones into nomophobia.. Based on the results of the study, some suggestions that can be given include: Nomophobia plays a role in limiting the social life of individuals in the real world. Therefore, as a teenager while acting as a student, teenagers should control themselves regarding the intensity of gadget use in their social environment, and improve interpersonal communication skills with people around them. The university also needs to anticipate this nomophobia phenomenon by providing socialisation about the negative impact of nomophobia and activating various student activities on campus so that students can be more involved in positive activities in the interactive learning process in the real world.

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