Smartphone Addiction Reviewed from Big Five Personality in College Students

Noer Ichsan Bhayangkara[1], Mariana Dinah Ch. Lerik[2], Juliana M. Y. Benu[3]
[1-3]Department of Psychology, Faculty of Public Health, Nusa Cendana University
e-mail: *[1]Ikhsan0721@gmail.com, [2]mdinah.lerik@staf.undana.ac.id,
[3]juliana.benu@staf.undana.ac.id

Abstract. Smartphones offer numerous advantages but can also lead to detrimental effects, such as addiction. Smartphone addiction refers to a dependence on smartphones that can cause various problems in students' lives. Personality traits are closely linked to addictive behaviours, with the Big Five Personality Theory being the most commonly used framework to examine addiction. This study aims to explore the relationship between the Big Five personality dimensions and smartphone addiction in students. This research employs a quantitative correlational design. The sample consisted of 325 respondents, selected using proportionate stratified random sampling. Data were collected using the Smartphone Addiction Scale (SAS) and the Big Five Inventory (BFI). The analysis was conducted using the Spearman rank correlation test. The findings indicate that the personality dimensions of conscientiousness ($p = 0.001 < 0.05$), extraversion ($p = 0.006 < 0.05$), and neuroticism ($p = 0.001 < 0.05$) have a significant relationship with smartphone addiction. In contrast, openness to experience ($p = 0.175 > 0.05$) and agreeableness ($p = 0.367 > 0.05$) do not show a significant relationship with smartphone addiction among students.
Keywords: Addiction; Big Five Personality; Smartphone;

Abstrak. Ponsel pintar memiliki banyak keuntungan, namun juga dapat menimbulkan dampak yang merugikan yaitu kecanduan. Kecanduan ponsel pintar merupakan perilaku ketergantungan terhadap ponsel pintar yang dapat menimbulkan berbagai masalah dalam kesibukan mahasiswa. Sifat kepribadian sangat berhubungan dengan perilaku adiktif. Teori kepribadian yang paling banyak digunakan untuk mengungkap kecanduan adalah *Big Five Personality.* Tujuan dari penelitian ini adalah untuk mengetahui hubungan antara dimensi *big five personality* dan kecanduan ponsel pintar pada mahasiswa. Penelitian ini merupakan penelitian kuantitatif korelasi. Sampel dalam penelitian ini berjumlah 325 responden yang diperoleh menggunakan *proportionate stratified random sampling.* Data diambil menggunakan skala SAS (*Smartphone Addiction Scale)* dan BFI *(Big Five Inventory).* Teknik analisis menggunakan uji korelasi *rank spearman.* Hasil uji menunjukkan bahwa dimensi *conscientiousness* (0.001<0.05), *extraversion* (0.006<0.05) dan *neuroticism* (0.001<0.05) memiliki hubungan yang signifikan dengan kecanduan ponsel pintar pada mahasiswa, sedangkan dimensi *Openness to experience* (0.175>0.05) dan *agreeableness* (0.367>0.05) tidak memiliki hubungan yang signifikan dengan kecanduan ponsel pintar pada mahasiswa.
Kata kunci: Big Five Personality; Kecanduan; Ponsel Pintar

Introduction

The millennial era is characterized by rapid technological advancements, with smartphones being a prominent example. Smartphones have become integral to daily life, facilitating communication, task management, information retrieval, and social interaction through entertainment apps, all without the need for physical face-to-face contact. The sophistication of smartphone technology has made it a crucial necessity in society and the most popular form of technology among students. Even individuals who do not identify as students often claim they cannot live without smartphones. Thus, smartphones are advanced communication tools that are deeply embedded in the lives of the millennial generation (Nasa & Daulay, 2022).

Smartphones offer many advantages, but their use can also lead to detrimental effects, such as addiction. Mobile phone addiction can arise from excessive time spent using smartphones. Smartphone addiction is characterized by an addictive behaviour or dependence on smartphones, which can cause various problems in the busy lives of students. Bianchi and Philips (2005) conducted a study examining several symptoms of cell phone addiction. These include searching for the phone, spending increased time on the device to calm down, unsuccessful attempts to regulate use, feelings of loss, anxiety, and depression, discomfort when stopping phone use, secretive phone use around others (e.g., friends or family), and using the phone as a means to distract from issues such as loneliness, anxiety, and depression (Irnawaty & Agustang, 2019). This tendency to become addicted to

smartphones can be influenced by a range of internal and external factors. One key internal factor is personality characteristics.

Each individual possesses unique personality characteristics that distinguish them from one another. Floros and Siomos (2014) note that theorists have proposed a strong association between personality traits and addictive behavior. Certain traits or characteristics of individuals, particularly those who are relatively sedentary, are referred to as personality. Personality plays a crucial role in determining individual behavior (Mastuti, 2005). According to Wisudiani and Fardana (2014), the Big Five Personality Trait theory is the most widely used framework to examine addiction, as it is believed to provide more specific insights.

The Big Five Personality model was introduced by the renowned psychologist Lewis Goldberg in 1981. This theory suggests that human personality is shaped by dominant traits, which manifest as distinct personality features. Each unique personality triggers different stress responses in individuals. The Big Five Personality model is a psychological approach used to assess human personality through five key traits, derived through factor analysis. These five traits are agreeableness, extraversion, openness to experience, conscientiousness, and neuroticism. The agreeableness trait describes individuals who are more likely to comply with others and seek to avoid conflict. The extraversion trait refers to individuals who are comfortable engaging with others and enjoy social interactions. The openness to experience trait characterizes individuals with a strong interest in new experiences, as well as a desire to learn and explore. The conscientiousness trait describes individuals who are careful in their actions, considerate in decision-making, possess high self-discipline, and are trustworthy. Lastly, the neuroticism trait refers to individuals who are more prone to experiencing negative emotions, such as anxiety, depression, and sadness.

In line with this perspective, a recent meta-analysis found that extraversion, agreeableness, openness to experience, and, conscientiousness were negatively

associated with internet addiction (Kayiş et al., 2016). In addition, another meta-analysis also found that neuroticism was positively related to smartphone use disorders, conscientiousness was negatively related to smartphone use disorders, extraversion did not have a significant relationship with smartphone use disorders, while other traits showed smaller relationships (Marengo et al., 2020).

Based on the initial data collection that has been carried out, it was found that the duration of students' use of smartphones in a day is more than 2 hours, there are even students who use their smartphones for up to 8, 12, or 16 hours a day. Where they generally use their smart phones to access social media, chat, watch Youtube or play games. They also cannot be separated from the use of smart phones and feel anxious or restless if they do not use them. The use of smart phones by students themselves is based on various reasons, ranging from doing coursework to being bored or noisy. In addition, the authors also found that students are aware of the good and bad effects of smartphone use, and feel that the adverse effects are more prominent than prolonged smartphone use. The good impact is to help access information and materials to do college assignments and communicate, while the bad effects are decreased eye health, reduced sleep time, forgetting time, reduced social interaction, to like to postpone a job.

From the above problems, the author became interested in conducting research related to smartphone addiction in terms of the big five personality in college students to find out the relationship between big five personality and smartphone addiction.

Method

This research is a quantitative study using a correlational research design. It was conducted at the Faculty of Public Health, Nusa Cendana University, with a sample of 325 respondents. The sample size for each study program at the Faculty of Public Health was determined using the proportionate stratified random sampling

technique, which is a method where the population is divided into non-homogeneous strata, and samples are selected proportionally from each stratum (Sugiyono, 2018). As a result, the Public Health Science program included 214 respondents, and the Psychology program had a total of 111 respondents. Data collection was carried out by distributing online questionnaires via Google Forms. The instruments used in this study include the Smartphone Addiction Scale (SAS), which has been modified and translated into Indonesian by Kurniawan et al. (2016). The validity test of the Indonesian version of the modified SAS showed that 21 of the 33 original items were valid, with total item correlation coefficients ranging from 0.282 to 0.802. The reliability test of the Smartphone Addiction Scale (SAS) resulted in a Cronbach's Alpha coefficient of 0.890, which is greater than 0.60, indicating that the research scale is reliable.

The big five personality scale in the form of Big Five Inventory (BFI) which has also been modified and translated into Indonesian by Ramdhani (2012). The Big Five inventory scale measurement is divided into two measurement models, namely M2 and M3. In M2, the validity obtained was 0.32 to 0.78, while the validity results in M3 were 0.43 to 0.50. The reliability of the Big Five Inventory (BFI) scale uses Confirmatory Factor Analysis with measurement models M2 and M3. So the scale reliability of M2 is 0.70 to 0.79. Meanwhile, the M3 model is 0.70 to 0.79.

Result

Data description of respondents, when viewed from study program, semester, and gender, can be seen in the table below.

Table 1.
Description of the characteristics of the respondent

Characteristic	Category	Sum	Percentage
Courses	Public health sciences	214	65,8%
	Psychology	111	34,2%
Semester	1	69	21,3%
	3	103	31,7%
	5	70	21,5%
	7	27	8,3%

		9	56	17,2%
Gender		Man	60	18,5%
		Woman	265	81,5%

Based on the table above, it can be seen that the majority of respondents are students with public health science study programs as many as 214 respondents (65.8%). The majority of respondents were 3rd semester students with a total of 103 respondents (31.7%). The most respondents in this study were women with a total of 265 respondents (81.5%).

Table 2.
Spearman Rank Correlation Test

Sub Variables		Smartphone Addiction
Openness to experience	Spearman's rho	-0.075
	p-value	0.175
Conscientiousness	Spearman's rho	-0.295
	p-value	<.001
Extraversion	Spearman's rho	-0.152
	p-value	0.006
Agreeableness	Spearman's rho	-0.050
	p-value	0.367
Neuroticism	Spearman's rho	0.391
	p-value	<.001

The table above shows that based on the Spearman Rank correlation test, it can be seen that the dimensions of Conscientiousness (0.001 < 0.05), Extraversion (0.006 < 0.05), and Neuroticism (0.001 < 0.05) have a significant relationship with smartphone addiction in college students. The Conscientiousness and Extraversion dimensions have a negative relationship with smartphone addiction expressed by the correlation coefficient values of the two dimensions respectively, namely -0.295 and -0.152, while Neuroticism has a positive relationship with smartphone addiction expressed by a correlation coefficient value of 0.391. In the dimensions of

Openness to experience (0.175 > 0.05) and Agreeableness (0.367 > 0.05), there was no significant relationship with smartphone addiction in college students.

Discussion

This study aimed to find out if there is a relationship between the Big Five Personality and smartphone addiction in college students. The results of this study show that the dimensions of conscientiousness, extraversion, and neuroticism have a relationship with smartphone addiction in college students. Another dimension, openness to experience and agreeableness itself has no relationship with smartphone addiction in college students.

The conscientiousness dimension has a negative relationship with smartphone addiction in students as indicated by a correlation coefficient value of -0.295 and p-value of 0.001 < 0.05. The conscientiousness dimension itself describes individuals who are disciplined, responsible, ambitious, and persistent (Rizky & Soetjiningsih, 2021), so that individuals will be better able to control the use of smartphones, fill their free time with more useful activities, and less likely for students with this personality to experience smartphone addiction. The results obtained from this study are in line with Yaozong (2022), that students with conscientiousness personality have a low risk of smartphone addiction.

The extraversion dimension has a negative relationship with smartphone addiction in college students as indicated by a correlation coefficient value of -0.152 and p-value of 0.006 < 0.05. The results of this study are in line with research conducted by Kim (2014) which found that extraversion negatively affects smartphone addiction. This result is also in accordance with the statement of Friedman and Schustack (in Nelvi & Raudatussalamah, 2017), that individuals who have a high extraversion personality will tend to be energetic, enthusiastic, dominant, friendly, communicative, affectionate, cheerful, happy to talk, happy to

gather and fun. Conversely, individuals who have a low extraversion personality usually tend to be shy, insecure, passive, and do not have enough ability to express strong emotions.

The neuroticism dimension has a positive relationship with smartphone addiction in students as shown by a correlation coefficient value of 0.391 and p-value of 0.001 < 0.05. The dimensions of neuroticism include unpleasant emotions, as well as the tendency to sadness, stress, hopelessness, low self-esteem, and pessimism (McCrae & Costa, in Cervone & Pervin, 2012), so individuals with this personality will have a high smartphone addiction. This can happen because individuals with high neuroticism will continue to use smartphones as a way to reduce stress and anxiety (Pearson & Hussain, 2015; Roberts et al, 2015). The results of this study are in line with research conducted by Yaozong (2022) that emotional stability has a negative influence on smartphone addiction in college students. It can be interpreted that there is a positive influence between neuroticism and smartphone addiction, because emotional stability is the opposite of neuroticism.

The openness to experience dimension did not have a significant relationship with smartphone addiction in college students expressed by a correlation coefficient value of -0.075 and p-value of 0.175 > 0.05. The results of this study are in accordance with research conducted by Roberts et al (2015), which showed that there was no significant influence between the dimensions of openness to experience and smartphone addiction. The results of this study are not in line with previous research conducted by Yaozong (2022), that openness to experience has a negative influence on smartphone addiction in college students. Different results found in another study conducted by Mahajan et al (2017) showed that there is a positive relationship between openness to experience and smartphone addiction.

The agreeableness dimension has no relationship with smartphone addiction in college students expressed by a correlation coefficient value of -0.050 and p-value of 0.367 > 0.05. The results in this study contrast with research conducted by Roberts

et al (2015), that individuals with low agreeableness personality tend to be antisocial and abuse smartphones. Even so, the results of previous studies showed inconsistent results. Research conducted by Pearson & Hussain (2015) and Takao (2014) showed that there was no significant relationship between agreeableness and smartphone addiction. These results are different from the results of research conducted by Andreassen et al (in Roberts et al, 2015) which showed a negative relationship between agreeableness and smartphone addiction.

Conclusion

Based on the results of this study, the openness to experience dimension did not have a significant relationship with smartphone addiction in college students expressed by a correlation coefficient value of -0.075 and p-value of 0.175 > 0.05. The conscientiousness dimension has a negative relationship with smartphone addiction in students as shown by a correlation coefficient value of -0.295 and p-value of 0.001 < 0.05. The extraversion dimension has a negative relationship with smartphone addiction in college students as indicated by a correlation coefficient value of -0.152 and p-value of 0.006 < 0.05. The agreeableness dimension has no relationship with smartphone addiction in college students expressed by a correlation coefficient value of -0.050 and p-value of 0.367 > 0.05. The neuroticism dimension has a positive relationship with smartphone addiction in students as shown by a correlation coefficient value of 0.391 and p-value of 0.001 < 0.05.

Suggestion

1) For students, it is hoped that they can start getting used to controlling the use of smart phones to avoid addiction to smart phones themselves, and get used to using smart phones for things that are more useful than just playing games or

checking social media. In addition, it is also expected to take time to carry out positive activities and if you can develop your potential.

2) For future researchers who are interested in researching similar topics, it is expected to conduct deeper research on this topic by adding other variables besides the personality dimension to be able to get more and broader findings, besides that they are also expected to conduct research with qualitative methods in order to find out the deeper reasons and causes of this research.

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