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The Relationship Between Boredom Proneness and Problematic Smartphone Use Among Indonesian Adolescents

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ABSTRACT

Adolescents are an age group with high levels of smartphone use, making them susceptible to problematic smartphone use. One psychological factor believed to play a role in this condition is boredom proneness, which is an individual's tendency to become easily bored. Adolescents with high levels of boredom tend to use smartphones as a means of distraction, which, if uncontrolled, can have a negative impact on daily activities. This study aims to determine the relationship between boredom proneness and problematic smartphone use among adolescents in Indonesia. A quantitative correlational approach was used. The sample consisted of 280 adolescents aged 12–18 years, comprising 214 females and 66 males, selected via purposive sampling. The research instruments used were the Short Boredom Proneness Scale and the Smartphone Addiction Scale–Short Version. Data were analyzed using the Pearson Product-Moment correlation test. The results of the analysis indicated a significant positive relationship between boredom proneness and problematic smartphone use, with a correlation coefficient of $r = .693$ and a significance level of $p < .05$. These findings suggest that the higher the level of boredom proneness among adolescents, the higher the level of problematic smartphone use. Thus, boredom proneness is one of the psychological factors contributing to the emergence of problematic smartphone use among adolescents.

Introduction

In today's digital era, smartphones have become an essential part of human life (Abbasi et al., 2021). According to Marini et al., (2024), smartphones are modern communication devices that play a significant role in daily life and are equipped with various multifunctional capabilities. In addition to serving as communication tools, smartphones facilitate internet access and the use of a wide range of applications available on these devices (Winskel et al., 2019). Rapid technological advancements have increased smartphone capabilities, resulting in a continuous rise in smartphone usage worldwide (Wardani, 2016; Wijanarko., 2014).

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Based on a survey by the Indonesian Internet Service Providers Association APJII (2025), the highest smartphone usage rate, reaching 99.16%, was found among adolescents aged 13–18 years. Furthermore, 26.62% of internet users reported spending an average of 4–6 hours per day online (Indonesian Internet Service Providers Association., 2025). These findings indicate that smartphones have become an inseparable part of adolescents' lives and are intensively used in their daily activities. Adolescence is a transitional period from childhood to adulthood characterized by physical, biological, and social changes (Sawyer et al., 2018). To cope with these developmental changes, adolescents tend to use smartphones as a means of distraction from the pressures they experience. Smartphones can also provide emotional comfort and serve as an escape from various unpleasant situations (Aydn & Sar, 2011; Chiu, 2014; Van Deursen et al., 2015).

The presence of smartphones offers numerous benefits by enabling users to access information, communicate with others, and obtain entertainment more conveniently (Canale et al., 2023; Rozgonjuk et al., 2018). However, excessive smartphone use may lead to dependency and pose risks to both physical and mental health (UNICEF, 2017). When individuals are unable to effectively regulate their smartphone use, they may develop problematic patterns of smartphone usage, commonly referred to as problematic smartphone use (Billieux et al., 2015).

Problematic smartphone use is defined as an individual's inability to control recurrent urges to use a smartphone, resulting in disruptions to daily functioning (Busch & McCarthy, 2021). This condition is characterized by various symptoms, including difficulty concentrating during activities, failure to complete planned tasks, inability to reduce smartphone usage duration, and signs of dependency reflected in a strong urge to repeatedly use smartphones (Kwon et al., 2013). Excessive and uncontrolled smartphone use may gradually develop into problematic smartphone use (Busch & McCarthy, 2021).

The phenomenon of problematic and difficult-to-control smartphone use among children and adolescents has been reported in various countries, with a global prevalence ranging from 14% to 31.2% (Sohn et al., 2021). everal studies conducted in China reported that approximately 27.6% to 29.8% of adolescents experienced problematic smartphone use (Chen et al., 2017; Jiang & Shi, 2016; Tao et al., 2017). Similarly, a national survey in South Korea found that the prevalence of problematic smartphone use among adolescents reached 29.3%, the highest among all age groups (Cho, 2020). Findings from Indonesia also indicate a high prevalence of problematic smartphone use among adolescents.

Research conducted by Nufus et al., (2020), revealed that 8.50% of adolescent students were categorized as experiencing problematic smartphone use, while 43.62% were classified as being at risk, indicating a strong tendency toward problematic smartphone usage patterns. Consistent with these findings, Marini et al., (2024), reported that 83% of Indonesian adolescents aged 12–18 years fell into the moderate problematic smartphone use category. The high prevalence of problematic smartphone use reported across various countries, including Indonesia, suggests that this phenomenon is widespread and requires serious

attention. This issue is particularly important because problematic smartphone use has been associated with numerous negative consequences, including mental health problems, physical health issues, and maladaptive behaviors (Han et al., 2017; Lemola et al., 2015; Lepp et al., 2014; J. Wang et al., 2019).

Excessive smartphone use can negatively affect mental well-being, influence daily behavior, hinder academic achievement, reduce social interactions, and decrease participation in physical activities (Pereira et al., 2020). ommon physical consequences include pain in the neck, shoulders, and lower back due to prolonged use in uncomfortable postures (Maharani et al., 2019). Moreover, this behavior is often accompanied by withdrawal symptoms, such as irritability, restlessness, or anxiety when access to smartphones is restricted, as well as difficulties in independently controlling usage duration (Wickord & Quaiser-Pohl., 2022).

One of the psychological factors that plays an important role in the development of problematic smartphone use is boredom proneness. Individuals with high levels of boredom proneness tend to seek external stimulation through smartphone use to alleviate feelings of boredom (Elhai et al., 2018). Adolescents who use smartphones as a means of escaping boredom or avoiding monotonous activities are at a greater risk of developing problematic smartphone use (Marini et al., 2024). he tendency to experience boredom due to an inability to engage in satisfying activities is known as boredom proneness (Mugon et al., 2020).

Vodanovich and Watt (2016), efined boredom proneness as a condition characterized by low engagement and satisfaction resulting from insufficient environmental stimulation. This condition makes individuals more likely to experience intense boredom when confronted with situations perceived as meaningless, uninteresting, or unchallenging (Struk et al., 2017). Amiro and Laka (2023), explained that boredom often involves complex emotional experiences, such as feelings of emptiness, dissatisfaction, and unmet needs. Such conditions may encourage individuals to seek distractions, including internet use, as easy access to digital technology allows them to reduce the emotional discomfort associated with boredom (Orsolini et al., 2023).

Beyond being viewed as an unpleasant experience, boredom proneness can also be explained through self-regulation theory, which refers to an individual's ability to manage thoughts, emotions, and behaviors in accordance with desired goals (Baumeister & Vohs, 2003). Effective self-regulation helps individuals remain focused and engaged in activities, whereas self-regulation failure may result in difficulties controlling attention, emotions, and behaviors effectively (Baumeister et al., 1994). In line with this perspective,, Struk et al. (2015), explains that boredom proneness is related to failure in the process of goal pursuit and reflects low self-regulation skills. argued that boredom proneness is associated with failures in goal pursuit and reflects deficiencies in self-regulatory capacity. Individuals with high boredom proneness are generally less capable of maintaining engagement in activities, whereas those with stronger self-control, greater cognitive flexibility, and better action orientation tend to exhibit lower levels of boredom proneness (Struk et al., 2015).

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A study conducted by Gezgin (2025), found that boredom proneness was positively correlated with problematic smartphone use, indicating that individuals with higher levels of boredom proneness are more vulnerable to developing problematic smartphone use. Similarly, Koç et al., (2025), reported a positive correlation between boredom proneness and problematic smartphone use. These findings are supported by previous studies demonstrating that higher levels of problematic smartphone use are associated with higher levels of boredom proneness (Bozaci, 2020; Li, 2021; Yang et al., 2022; Zhao et al., 2022). Conversely, individuals with lower levels of problematic smartphone use tend to report lower levels of boredom proneness as well (Rozgonjuk et al., 2018).

Based on the literature reviewed above, several studies have demonstrated a relationship between boredom proneness and problematic smartphone use. However, research specifically examining this relationship among Indonesian adolescents remains limited. Previous studies have also indicated that the diversity of adolescent samples used has been relatively restricted (Koç et al., 2025). Furthermore, most prior studies have been conducted among university students or emerging adults outside Indonesia, resulting in limited empirical evidence regarding the relationship between boredom proneness and problematic smartphone use among Indonesian adolescents. Therefore, this study is expected to provide a deeper understanding of the relationship between boredom proneness and problematic smartphone use among Indonesian adolescents while contributing to the psychological literature concerning the psychological factors that influence problematic smartphone use.

Method

This study employed a quantitative approach using a correlational design aimed at examining the relationship between boredom proneness and problematic smartphone use among adolescents. The population of this study consisted of adolescents in Indonesia. The sampling technique used was purposive sampling, which is a method of selecting samples based on specific criteria determined by the researcher in accordance with the research objectives This study uses a quantitative approach with a correlational method that aims to determine the relationship between boredom proneness and problematic smartphone use in adolescents. The study population is adolescents in Indonesia. The sampling technique used is purposive sampling, which is a technique of determining samples based on certain criteria set by the researcher in accordance with the research objectives (Sugiyono, 2017). The inclusion criteria for participants in this study were adolescents aged 12–18 years who were active smartphone users. Smartphone usage duration was not used as an inclusion criterion; however, it was recorded as a respondent characteristic. Previous studies have shown that smartphone use of more than 5 hours per day is associated with an increased risk of problematic smartphone use and may have impacts on physical, social, and psychological aspects (Marini et al., 2025).

Based on these criteria, a sample of 280 adolescents in Indonesia was obtained. Data collection was conducted online using a Google Form distributed through various social media platforms such as WhatsApp, Instagram, TikTok, X, and Threads. Before completing the questionnaire, respondents were provided with an informed consent form containing information about the research objectives, procedures, voluntary participation, and data confidentiality assurance. This study was conducted in accordance with psychological research ethical principles by ensuring the confidentiality of respondents' identities and voluntary participation. In addition, each respondent was only allowed to complete the questionnaire once to minimize the possibility of duplicate responses.

The data in this study were obtained using psychological scale instruments, namely:

1. Independent variable: Boredom Proneness (X)

This variable was measured using the Short Boredom Proneness Scale (SBPS) developed by Struk et al., (2017). This scale is unidimensional and consists of 8 items. The instrument was adapted into the Indonesian cultural context by the researcher through a cross-cultural adaptation procedure based on Beaton et al., (2000), including forward translation, back translation by professional translators, expert committee review, readability testing to ensure item comprehensibility for adolescents, and the development of the final version of the instrument. This adaptation process was carried out with permission from the original scale developers. Content validity was tested using the Content Validity Index (CVI), resulting in a score of 1.00, indicating excellent content validity. All 8 items were declared valid with no item being removed, and item discrimination indices ranged from 0.311 to 0.701. In addition, the scale demonstrated good internal consistency with a Cronbach's alpha coefficient of $\alpha = 0.822$.

2. Dependent variable: Problematic smartphone use (Y)

This variable was measured using the Smartphone Addiction Scale–Short Version (SAS-SV) developed by Kwon et al., (2013). The scale was adopted by the researcher based on previous construct validity testing using confirmatory factor analysis (CFA) conducted by Marini et al. (2025), with a Cronbach's alpha reliability coefficient of $\alpha = 0.820$.

Results and Discussion

Results

The characteristics of respondents in this study were described based on gender, age group, and duration of smartphone use. The general overview of the characteristics of the respondents involved in the study is as follows:

Table 1. Descriptive Research Subject

Categories	Remarks	Number of Subjects	Percentage (%)
Gender	Women	214	76.4%
	Male	66	23.6%
	Total	**280**	**100%**
Categories	**Remarks**	**Number of Subjects**	**Percentage (%)**
	< 5 Hours	31	11.1%

Duration of smartphone use	5 Hours	37	13.2%
	6 Hours	43	15.4%
	7 Hours	48	17.1%
	8 Hours	42	15.0%
	>8 Hours	79	28.2%
	Total	**280**	**100%**
Categories	**Remarks**	**Number of Subjects**	**Percentage (%)**
Age	12	6	2.1%
	13	21	7.5%
	14	19	6.8%
	15	34	12.1%
	16	25	8.9%
	17	62	22.1%
	18	113	40.4%
	Total	**280**	**100%**

Based on Table 1, the research respondents were dominated by 214 women (76.4%), while men were 66 people (23.6%). The findings of this study show that the number of female respondents is much higher than that of men. Based on the duration of smartphone use, participants who used smartphones for less than 5 hours were 11.1%, used for 5 hours as much as 13.2%, used for 6 hours as much as 15.4%, used 7 hours as much as 17.1%, used 8 hours as much as 15.0%, and used for more than 8 hours as much as 28.2%. These findings show that most respondents have a relatively high intensity of smartphone use. Meanwhile, based on age groups, participants were 12 years old (2.1%), 13 years old (7.5%), 14 years old (6.8%), 15 years old (12.1%), 16 years old (8.9%), 17 years old (22.1%), and 18 years old (40.4%).

Table 2. Categorization of Boredom Proneness and Problematic Smartphone Use

Variable	**Categories**	**Frequency**	**Percentage (%)**
Boredom Proneness	Very Low	12	4.3%
	Low	33	11.8%
	Medium	75	26.8%
	Hight	85	30.4%
	Very High	75	26.8%
Total		**280**	**100%**
Variable	**Categories**	**Frequency**	**Percentage (%)**
Problematic Smartphone Use	Very Low	11	3.9%
	Low	33	11.8%
	Medium	80	28.6%
	Hight	69	24.6%
	Very High	87	31.1%
Total		**280**	**100%**

Based on Table 2, descriptive analysis of data through a categorization test on the variables of boredom proneness and problematic smartphone use. The highest frequency in the boredom proneness variable was in the high category with a percentage of 30.4%, while

the lowest frequency was in the very low category at 4.3%. The findings suggest that the level of boredom proneness in the study participants tends to fall into the high category. In the problematic smartphone use variable, the highest frequency was in the very high category with a percentage of 31.1%, while the lowest frequency was in the very low category of 3.9%. These results show that the problematic rate of smartphone use in the study participants tends to be in the very high category.

Table 3. Normality Test

Variable	Statistics		Remarks
	Skewness	Kurtosis	
Boredom Proneness	-0.351	-0.279	Normal
Problematic Smartphone Use	-0.355	-0.572	Normal

Based on Table 3, the results of the analysis show that the boredom proneness variable has a skewness value of -0.351 and kurtosis of -0.279. Meanwhile, the problematic variable smartphone use had a skewness value of -0.355 and kurtosis of -0.572. According to the rules put forward by Field (2013), the data is declared to be normally distributed when the values of skewness and kurtosis are in the range of -1.96 to +1.96, especially in the number of samples of more than 200. It was concluded that the data on the variables of boredom proneness and problematic smartphone use were distributed normally.

Table 4. Linearity Test

Variable	Linearity	Remarks
Boredom Proneness* Problematic Smartphone Use	0.000	Linear

Based on Table 4, the results of the linearity test on the variables of boredom proneness and problematic smartphone use showed a significance value of 0.000. These results indicate that there is a linear relationship between the two variables, because the significance value shows $p < 0.05$.

Table 5. Hypothesis Test

Variable	Significant	Correlation	Remarks
Boredom Proneness* Problematic Smartphone Use	0.000	0.693	Significant

Based on Table 5, the results of the hypothesis test using Pearson Product Moment correlation show a significance value of 0.000 with a p< of 0.05. These results show a significant relationship between boredom proneness and problematic smartphone use in adolescents. In addition, a correlation coefficient value of 0.693 shows that the relationship between boredom proneness and problematic smartphone use is in the strong category, so boredom proneness can be considered as one of the relevant psychological factors in understanding problematic smartphone use in adolescents.

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Discussion

The hypothesis analysis results indicate a significant positive relationship between boredom proneness and problematic smartphone use. These findings suggest that the higher the level of boredom proneness among adolescents, the higher their tendency to experience problematic smartphone use. Therefore, the research hypothesis is accepted, indicating that boredom proneness is one of the factors associated with problematic smartphone use in adolescents

These results are consistent with previous studies showing that boredom proneness is positively related to problematic smartphone use (Elhai et al., 2018; Gezgin, 2025; Koç et al., 2025). Individuals with high levels of boredom proneness tend to be more prone to using smartphones as a means of escaping unpleasant emotional states, particularly boredom (Elhai et al., 2017; Leung, 2008; Wolniewicz et al., 2020; X. J. Yang et al., 2020). In such conditions, smartphones function as a distraction tool that provides instant stimulation to reduce the experience of boredom (Wang et al., 2020).

This relationship can be understood from several theoretical perspectives. One of them is self-regulation theory, which states that individuals with low self-regulation abilities tend to have difficulty controlling their attention, emotions, and behavior, making them more likely to seek external stimuli such as smartphones when experiencing boredom (Baumeister & Vohs, 2003; Struk et al., 2015). Poor self-regulation leads individuals to use smartphones as a coping mechanism to deal with negative emotions, including boredom and loneliness. This finding is also consistent with the compensatory internet use theory proposed by Kardefelt-Winther (2014), which explains that individuals tend to use the internet or digital technology excessively to reduce or avoid unpleasant emotional experiences.

Based on the descriptive analysis results, the level of problematic smartphone use among respondents was dominated by the very high category (31.1%). This condition indicates that some adolescents experience difficulties in controlling the duration and frequency of smartphone use, which may have psychological, social, and academic impacts (Canale et al., 2023; Peng et al., 2025). The symptoms include difficulty concentrating during activities, failure to complete planned tasks, inability to reduce smartphone use duration, and signs of dependence characterized by a strong urge to repeatedly use smartphones (Kwon et al., 2013).

In addition, excessive smartphone use may also reduce mental well-being, decrease participation in physical activitie (Pereira et al., 2020), and cause physical complaints such as pain in the neck, shoulders, and lower back due to prolonged use (Maharani et al., 2019). This habit is often accompanied by withdrawal-like symptoms, such as irritability, restlessness, or anxiety when unable to access a smartphone, as well as difficulties in independently controlling usage duration (Wickord & Quaiser-Pohl, 2022). The high level of problematic smartphone use among respondents indicates that smartphones may serve as a tool used by adolescents to cope with or reduce their experience of boredom.

Based on the descriptive analysis, boredom proneness was in the high category (30.4%). This finding indicates that adolescents tend to experience boredom more easily and have limitations in sustaining attention and controlling impulses (Struk et al., 2017). Moreover, adolescence is a developmental period characterized by an increased need for new experiences and diverse stimulation (Sawyer et al., 2018). This condition may encourage adolescents to seek easily accessible external sources of stimulation, such as smartphones, thereby increasing vulnerability to problematic smartphone use.

The majority of adolescents in this study used smartphones for 5 hours to more than 8 hours per day. This high duration indicates that smartphones have become an important part of adolescents' daily activities. Previous research shows that smartphone use of more than 5 hours per day may increase the risk of social interaction problems, decreased concentration, and lower academic performance (Danal et al., 2022). In addition, Meherali et al., (2021) found that adolescents' smartphone use can reach 5–10 hours per day and may form maladaptive usage patterns and increase the risk of smartphone addiction.

Based on these findings, boredom proneness can be understood as a psychological factor contributing to the increased risk of problematic smartphone use among adolescents. This study provides empirical contribution by extending previous findings on the relationship between boredom proneness and problematic smartphone use in Indonesian adolescent populations, which are still relatively limited in the literature. These findings also extend previous studies that were mostly conducted on university students or emerging adults outside Indonesia. Practically, this study highlights the importance of strengthening self-regulation skills and providing education on healthy smartphone use in order to minimize the risk of problematic smartphone use among adolescents.

Conclusion

The results of this study indicate a positive relationship between boredom proneness and problematic smartphone use among adolescents in Indonesia. This finding suggests that the higher the level of boredom proneness, the higher the tendency toward problematic smartphone use among adolescents. The results also show that smartphone use among adolescents is influenced not only by technological factors but also by psychological factors, particularly self-regulation ability in coping with boredom. Adolescents with high levels of boredom proneness tend to use smartphones as a means of reducing feelings of boredom, which, if not balanced with good self-control, may develop into maladaptive usage patterns and have impacts on academic, social, and psychological well-being. This study also provides practical implications for various parties in efforts to prevent problematic smartphone use among adolescents. Schools can organize educational activities that promote healthy and responsible smartphone use, while parents are expected to play an active role in accompanying and monitoring adolescents' smartphone use. Future researchers are encouraged to further develop this study by involving a broader and more diverse sample

and by considering other variables that may influence the relationship between boredom proneness and problematic smartphone use.

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