



Self-Esteem, Fear of Missing Out and Problematic Internet Use in Generation Z Adolescents in Indonesia

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Abstract

Internet use among Generation Z adolescents is increasingly becoming a concern due to its rapid development. This phenomenon can negatively impact the quality of learning, health problems, dependence on the internet, and make it difficult to control oneself in using the internet. This study aims to determine the predictors of self-esteem and fear of missing out on problematic internet use in Generation Z adolescents. This study uses quantitative methods with a multiple linear regression design. The participants were 329 Generation Z adolescents who were determined through an incidental sampling technique. Data were collected using three scales, namely the Rosenberg Self-Esteem Scale (RSES), Fear of Missing Out Scale (FoMOs), and Generalized Problematic Internet Use Scale 2 (GPIUS 2). The results showed that self-esteem and fear of missing out jointly predicted problematic internet use in Generation Z adolescents. Specifically, self-esteem cannot predict problematic internet use in Generation Z adolescents. However, fear of missing out can predict problematic internet use in Generation Z adolescents. This study emphasizes the importance of efforts in improving self-strategy, which can be done through adaptive digital education.

Keywords: Self-esteem; Fear of missing out; Problematic internet use; Generation Z adolescents

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INTRODUCTION

The problems experienced by generation Z adolescents become crucial when problematic internet use emerges. A finding by Lubag (2024) revealed that social media addiction is associated with poor mental health. Still, internet addiction was found to be a mediator or a full factor between social media addiction and depression, anxiety, and stress. In other words, the more individuals are addicted to social media, the more they show excessive internet use. Based on this, Annur (2023) reported that the number of internet users in Indonesia reached 213 million as of January 2023, out of a total Indonesian population of 276.4 million, or equal to 77% at the beginning of 2023. Badan Pusat Statistik (2023) reports the percentage of age groups that accessed the internet, including 5-12 years old 12,43%, 13-15 years old 6,77%, 16-18 years old 7,47%, 19-24 years old 14,69%, and 25 years old 58,63%. Paramitha and Purwanti (2020) found that 71,97% of adolescents tend to have an addiction to problematic internet use, or what is called problematic internet use.

Carrying out the role of an adolescent is not easy, especially for generation Z, who live side by side with the development of the internet, which significantly affects their lives. Problematic internet use can be understood as an individual condition that shows signs of maladaptive cognition, which makes it difficult to control behavior when using the internet, causing negative impacts in various aspects, such as academic, social, or daily life (Caplan, 2010). Problematic internet use is a condition where individuals experience addiction or significant interference with internet use. This causes various negative impacts on the lives of adolescents, such as psychological, physical, and social problems. When adolescents use the internet excessively, it can cause mental health problems such as anxiety, stress, and even depression (Ciarrochi et al., 2016). Moreover, it causes fatigue, decreased learning performance, and a lack of concentration (Tomaszek & Muchacka-Cymerman, 2020). In addition, adolescents also experience conflict in social isolation and difficulty in interacting directly with others because they are only focused on obsessive internet use behavior (Throuvala et al., 2019). Adolescents who manage their internet use well can obtain extensive information and increase their knowledge on various topics. The internet can also help adolescents develop technological skills in education, daily life, and future careers (Haleem et al., 2022).

Problematic internet use can occur because various factors, including loneliness, low self-esteem, depression, and social anxiety, influence it (Morahan-Martin, 1999). In addition, excessive problematic internet use is also influenced by individuals who engage in a fear of missing out behavior (Sela et al., 2020). Wang (2022) states that the lack of self-esteem in individuals can make them feel comfortable interacting with cyberspace, which can trigger individuals to engage in uncontrolled internet use. In addition, the emergence of excessive fear of missing out in individuals can influence problematic internet use (Angesti & Oriza, 2018).

Problematic internet use is formed from five aspects, namely, preference for online social interaction, which is characterized by the confident behavior of individuals who believe online interaction is safer, more comfortable, and increases self-confidence



compared to face-to-face communication. Second, mood regulation, which means the individual's feeling of using the internet to regulate or control mood when feeling anxious in a social environment, then prefers online interaction to reduce anxiety. Third, cognitive preoccupation focuses on the obsessive mindset of individuals in using the internet, such that individuals cannot stop thinking about going online, or have thoughts that, when not connected to the internet, they continue to think about developments that occur in cyberspace. Fourth, compulsive internet use means the desire of individuals who constantly want to access the internet even though there is no urgent need to use it, resulting in behavioral lack of self-regulation or difficulty controlling themselves in using the internet. Fifth, adverse outcomes are characterized by the negative effects of internet use, such as difficulties in managing daily routines, disruption of social life, and other life problems (Caplan, 2010).

Self-esteem is an individual's behavior based on their self-understanding of how they see and assess themselves as a whole, both positively and negatively (Rosenberg, 2015). Self-esteem has two aspects: self-liking and self-worth. Self-liking means that individuals can accept everything in themselves, and self-worth means how individuals appreciate and respect themselves (Rosenberg, 2015).

Performing the role of a generation Z adolescent with low self-esteem allows adolescents to be less able to accept themselves, even considering that they have many shortcomings and are useless compared to others. However, it is different when adolescents have a good level of self-esteem; they tend to have a high level of well-being (Levy, 2019). Self-esteem in problematic internet use is crucial because adolescents seek recognition from the outside world to eliminate their negative feelings through internet use (Bernal-Ruiz et al., 2017). This is in line with what was revealed by Zeng et al. (2021) that problematic internet use has a relationship with psychosocial well-being, including loneliness, depression, shame, and low levels of self-esteem. Apart from self-esteem, the next factor related to problematic internet use is fear of missing out.

The fear of missing out is an individual's fear that other people's activities are more enjoyable without them. It is characterised by a desire to continue to be connected to what others are doing (Przybylski et al., 2013). The formation of fear of missing out can be seen from three aspects, namely, first, competence, which means the individual's strength to act productively in daily life and to be able to carry out tasks effectively despite difficulties. Second, autonomy means the power of individuals to bring up their initiatives and determine their actions or decisions without any influence from other parties. Third, relatedness is defined as an individual's closeness to others, which allows them to feel comfortable together.

A high fear of missing out can impact an individual's mental and emotional well-being. Individuals with a poor fear of missing out feel anxious and stressed due to the fear of missing out on events or feeling dissatisfied with their lives (Tanhan et al., 2022). However, individuals with a reasonable fear of missing out will positively impact their well-being. Low fear of missing out tends to make individuals more focused on what they are doing without being distracted by other thoughts that make them afraid of missing



out (Gupta & Sharma, 2021). Fear of missing out is pressure that makes generation Z adolescents want to appear perfect on social media, have high expectations from parents and society, and tend to compare themselves unhealthily. These emerging pressures can cause mental health problems (Chen et al., 2021).

Identity development makes adolescents sacrifice their authenticity to follow unrealistic societal standards. Therefore, individuals become unconfident in their abilities and have the assumption that others are better than they are (Lianawati et al., 2023). Internet use strongly impacts adolescents, especially regarding self-esteem, and can affect their social life. Meanwhile, the role of fear of missing out is a high fear for adolescents of losing communication relationships in cyberspace, so they always want to use the internet. Thus, self-esteem plays a vital role in problematic internet use, as does the fear of missing out (Wegmann et al., 2017; Mathew & Krishnan, 2020).

Therefore, this study aims to determine the influence of self-esteem, fear of missing out, and problematic internet use in generation Z adolescents. Then, the hypotheses proposed in this study include:

1. Self-esteem and fear of missing out together have a significant predictor on problematic internet use in generation Z adolescents.
2. Self-esteem significantly predictor problematic internet use in generation Z adolescents.
3. Fear of missing out significantly predictor problematic internet use in generation Z adolescents.

METHODS

Research Participants

The participants in this study were generation Z adolescents in Indonesia. The sampling technique used was an incidental sampling technique with criteria that generation Z adolescents aged 13-21 years have accessed the internet, and use the internet 7-10 hours a day. The data that has been collected resulted in 329 participants who fit the criteria. All research participants were asked to complete an informed consent sheet related to the research procedure in a Google form. Informed consent contains a statement about the research description and the participants' involvement. After that, participants chose whether they were willing or unwilling. If willing, then participants were directed to fill in the next section.

Table 1. Demographics of Research Participants

No	Participants Classification	Description	Frequency	Percentage
1	Gender	Male	124	37.7%
		Female	205	62.3%
2	Age	13 years old	16	4.8%
		14 years old	43	13.1%
		15 years old	27	8.2%



	16 years old	47	14.3%
	17 years old	40	12.2%
	18 years old	38	11.5%
	19 years old	30	9.1%
	20 years old	46	14%
	21 years old	42	12.8%
	7 hours	94	28,6%
3	Time Spent on the Internet in a Day	8 hours	79
		9 hours	63
		10 hours	49
		More than 10 hours	44
			24%
		19.1%	14.9%
			13.4%

Research Procedure

The measurements in the study used three psychological scales, namely the Rosenberg Self-Esteem Scale (RSES), the Fear of Missing Out Scale (FoMOs), and the Generalized Problematic Internet Use Scale 2 (GPIUS 2). Before the scale was distributed to participants, the validity test of the measuring instrument was first carried out through expert judgment conducted by three experts in the field of psychology. Validation conducted by expert judgment aims to see the suitability in the context of Indonesian culture. The three research scales were then piloted on 30 generation Z adolescents outside the research participants. The next stage, research ethics approval and informed consent, was completed. This research has received ethics commission approval with letter number E.6.m/147/KE-Fpsi-UMM/VI/2024.

The research was conducted using a questionnaire distributed on Google Forms. Data was collected from July 1, 2024, to December 15, 2024. Researchers distributed questionnaire links through social media, such as WhatsApp, Instagram, Facebook, TikTok, and Telegram. In collecting data, researchers provided an e-money reward of 300 thousand, which was given to 6 lucky participants. Each of them is 50 thousand, which is done by lottery.

Research Instruments

Self-esteem Scale

Self-esteem is measured using the Rosenberg Self-Esteem (RSES), which refers to aspects of self-esteem from Rosenberg (2015). The self-esteem scale consists of 10 items, which the researcher then translated into Indonesian and adapted to the context of the participants. This scale consists of favorable and unfavorable items with four response options from the Likert scale, namely Strongly Disagree, Disagree, Agree, and Strongly Agree. From the item selection test results, all items meet the coefficient standards with a total correlation value ranging from 0.305 to 0.791 and an Alpha Cronbach's value of 0.850.

Fear of Missing Out Scale

Fear of missing out is measured by the Fear of Missing Out Scale (FoMOs) from



Przybylski et al. (2013). The fear of missing out scale consists of 10 items translated into Indonesian and adapted to the context of the research participants. This scale consists of favorable items and has five response options from the Likert scale, namely Strongly Disagree, Disagree, Somewhat Agree, Agree, and Strongly Agree. The item selection test results found that all items met the coefficient standards with item total correlation values ranging from 0.386 to 0.818 and an Alpha Cronbach's value of 0.869.

Problematic Internet Use Scale

Problematic internet use is measured by the Generalized Problematic Internet Use Scale 2 (GPIUS 2). The problematic internet use scale consists of 15 items translated into Indonesian and adapted to the context of the research participants. This scale consists of favorable items and has five response options from the Likert scale, namely Strongly Disagree, Disagree, Somewhat Agree, Agree, and Strongly Agree. The item selection test results found that all the items met the standard coefficient with a total correlation value ranging from 0.375 to 0.717 and an Alpha Cronbach value of 0.904.

Data Analysis

This study's statistical data analysis technique uses multiple linear regression analysis using Jamovi software version 2.6.44 for Windows.

RESULTS

Descriptive Statistics Test

The results of descriptive statistical data involving 329 participants in Table 2 show that the self-esteem variable has a minimum score of 12, a maximum score of 40, an average of 28.2, and a standard deviation of 3.85. Then, the fear of missing out variable has a minimum score of 10, a maximum score of 48, an average of 31.8, and a standard deviation of 8.71. The problematic internet use variable has a minimum score of 15, a maximum score of 75, an average of 46.0, and a standard deviation of 13.8.

Table 2. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Self-esteem	329	12	40	28.2	3.85
Fear of Missing Out	329	10	48	31.8	8.71
Problematic Internet Use	329	15	75	46.0	13.8

Hypothesis Test

Based on the results of the simple correlation test in Table 3, it shows that there is no significant relationship between self-esteem and problematic internet use ($r = 0.106$; $p > 0.05$). On the other hand, fear of missing out is significantly related to problematic internet use ($r = 0.516$; $p < 0.001$).

Table 3. Correlation Test between Self-Esteem, Fear of Missing Out, and Problematic Internet



Use

	Self-esteem	Fear of Missing Out	Problematic Internet Use
Self-esteem	1		
Fear of Missing Out	0.054	1	
Problematic Internet Use	0.106	0.516***	1

Notes. * $p < 0,05$, ** $p < 0,01$, *** $p < 0,001$

Based on the simple regression test results in Table 4, it is known that in model 1 (self-esteem), the R value is 0.106 and sig. = 0.055 ($p > 0.05$), meaning that self-esteem cannot specifically predict problematic internet use. Meanwhile, in model 2 (fear of missing out) obtained an R value of 0.522 and sig. = 0.001 ($p < 0.01$), meaning that specifically fear of missing out can predict problematic internet use with a contribution of 27.24%.

Table 4. Simple Regression Test

Model	R	R ²	Adjusted R ²	P
1	0.106	0.0112	0.00823	0.055
2	0.522	0.2724	0.26790	<0.001

Based on the results of the multiple linear test in Table 5, it is known that the ΔR^2 value is 0.261 with sig. = 0.001 ($p < 0.01$), meaning that self-esteem and fear of missing out jointly predict problematic internet use in generation Z adolescents.

Table 5. Multiple Linear Regression Significance F

Comparison						
Model	Model	ΔR^2	F	df1	df2	p
1	2	0.261	117	1	326	<0.001

Based on Table 4.13 above, it can be explained that the self-esteem and fear of missing out variables have different significance values, namely, self-esteem of 0.098 ($p > 0.05$) and fear of missing out of 0.001 ($p > 0.01$). Thus, it can be concluded that self-esteem cannot be predicted.

Table 6. Multiple Linear Regression Test: Independent Variable t-value on Dependent Variable

Predictor	Estimate	SE	t	p	Stand. Estimate
Intercept	12.255	5.2744	2.32	0.021	
Self-esteem	0.282	0.1698	1.66	0.098	0.0785
Fear of Missing Out	0.812	0.0751	10.82	<0.001	0.5117



DISCUSSION

The results show that the central hypothesis of this study is accepted: self-esteem and fear of missing out play a significant role in problematic internet use in Generation Z adolescents. These results align with previous research, which found that adolescents have an increased fear of missing out and decreased self-esteem, contributing to problematic internet use (Gupta, Prasad, & Singh, 2022; Servidio et al., 2024).

In today's digital age, adolescents tend to have reasonable life expectations. Generation Z adolescents who have problematic internet use tend to face different life dynamics, such as experiencing psychological problems, academic stress, unstable self-regulation, or poor social pressure (Liu et al., 2022). Although generation Z adolescents face various challenges in problematic internet use, when they can deal with it by developing themselves in the form of good self-esteem, it will help solve problems in problematic internet use (Servidio, Gentile, & Boca, 2018).

The results of this study have meaning for Generation Z adolescents, where this study shows that the level of problematic internet use in adolescents can be reduced by having a good level of self-esteem and being able to control fear of missing out behavior. Research from Yang et al. (2024) also stated that reducing problematic internet use can be influenced by the ability to increase self-esteem and manage fear of missing out behavior more rationally. Even though many previous studies have linked poor problematic internet use with self-esteem and fear of missing out. In an academic and practical context, these findings indicate that existing theoretical models of problematic internet use need to be further examined by considering other variables that may be more influential.

The implications for education and mental health are also important, as schools and families who previously assumed that adolescents with low self-esteem or high fear of missing out were more prone to problematic internet use need to adapt a more evidence-based approach and understand that problematic internet use can be influenced by a broader range of factors (Kim, 2022). Thus, further research is needed to explore other factors of problematic internet use in order to be able to map them more specifically.

The results of the analysis of minor hypothesis 1 proposed in this study are rejected, where self-esteem cannot predict problematic internet use in Generation Z adolescents. This happens because problematic internet use among Generation Z is very complex and is influenced by many other factors, such as stress, social pressure, habits, and digital lifestyles that are inherent in individuals (Cam & Top, 2020; Mamun et al., 2020; Lai et al., 2023). Both adolescents with high and low self-esteem can be equally active on the internet, but it does not seem to be a trigger for problematic internet use. Therefore, self-esteem is not a factor that predicts whether an adolescent will experience problematic internet use.

The occurrence of compensatory behavior, such as excessive internet use, is not based on the role of high or low self-esteem. The occurrence of problematic internet use in Generation Z is because the internet has become part of everyday life, not as a form of escape. Therefore, problematic internet use is a natural dynamic experienced among Generation Z adolescents, and even as a form of expressing themselves in totality in



cyberspace.

Furthermore, the results of the analysis of minor hypothesis 2 proposed in this study are accepted, where fear of missing out can predict problematic internet use in Generation Z adolescents. When Generation Z adolescents have a high level of fear of missing out, it can impact their problematic internet use, which is high. Findings from Zhu, Lian, and Fan's (2024) research also show that fear of missing out plays an important role in problematic internet use. This is due to the ability of adolescents to act on impulsive impulses; as a result, they have an addiction to the internet and online social anxiety to avoid feeling left behind.

In addition, adolescents who cannot be easily influenced by trends or activities carried out by others tend to be more able to control their personal decisions independently without external encouragement or fear of being left behind. This ability indicates good self-regulation in the face of digital social pressure. However, adolescents' need to stay socially connected may be a predictive factor in increasing the risk of problematic internet use. A strong drive to stay connected and up-to-date often leads adolescents to overuse the internet, thinking that it is a form of compensation for fears of being left behind or social exclusion. This strengthens the relationship between fear of missing out and problematic internet use. Individuals with strong and quality social relationships are less likely to be affected or resistant to the fear of missing out (Duradoni et al., 2024).

Many previous studies were conducted in Western countries, where the digital and social culture may differ from those in Indonesia or other developing countries. By using Generation Z adolescent participants from the Indonesian context, this study offers a new perspective in understanding problematic internet use in a different cultural context, so that the results can be more relevant to social conditions in Indonesia. This study focuses on Generation Z adolescents as a digital native group. Generation Z adolescents are born and grow up in the digital era with extensive internet access from an early age. Therefore, this research provides a new perspective on how the unique characteristics of Generation Z in Indonesia experience problematic internet use.

This study also has its limitations, where the researcher found that in reality, this study needs to look at the social and cultural background of the research participants. Adolescents in environments that are more permissive of internet use will show different patterns than those from environments that are more strict in controlling internet use. This study also did not explore by considering other demographic factors such as education level, economic background, and regional origin. This could be added, as it provides new insights into whether these factors play a role in moderating the influence between the study variables.

CONCLUSION

Based on the study's results, it can be concluded that self-esteem and fear of missing out jointly predict problematic internet use in Generation Z adolescents. Specifically, self-esteem cannot predict problematic internet use in Generation Z



adolescents. However, fear of missing out can predict problematic internet use in Generation Z adolescents.

Based on the results of this study, it is recommended that Generation Z adolescents increase their self-awareness of the impact of excessive internet use to prevent problematic internet use. For parents, it is hoped that they can create an environment that supports the healthy formation of adolescents and provide comprehensive education about the fear of missing out phenomenon and its consequences on mental health. For mental health practitioners and counselors, it is hoped that they can design psychological interventions that involve emotion regulation and impulse control so that Generation Z adolescents can control their problematic internet use. Government and policymakers are expected to design digital literacy and mental health programs based on digital evidence to support adolescents using the internet adaptively and productively in this digital era. Future researchers are expected to explore other factors that may have a greater role in problematic internet use, including social background, economy, education level, and cultural conditions.

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