The role of self-esteem on nomophobia with extraversion personality as a moderating variable

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Abstract

Nomophobia is an individual's propensity to use smartphones excessively, resulting in feelings of anxiety and panic when away from their devices. Individuals with high self-esteem are typically affable and optimistic, and vice versa. Smartphones are used to escape their disdain for themselves or as a platform for expressing emotions directly or via social media. People who use smartphones excessively in every aspect of their lives will develop a physical dependence on them and become anxious and concerned when they cannot access them. This study examines the relationship between self-esteem and nomophobia using extraversion as a moderating variable. 105 individuals between 18 and 24 were selected using the quota sampling method to participate in this study. The regression test results demonstrate the role of the two predictor variables in extraversion. Moreover, based on the PROCESS model 4 developed by Hayes, it was discovered that the extraversion personality variable had a minor potential to moderate the relationship between self-esteem and nomophobia, thereby providing a buffering effect despite this potential. The frequency of moderation is 0.102, or 10.20%. This indicates that extraversion moderates the impact of self-esteem on nomophobia by 10.20%.

Introduction

Everyone is currently required to bring a smartphone with them wherever they go. Smartphones seek to facilitate communication, interaction, and information access for their users through the sophistication and comprehensiveness of their features. Smartphones are used to interact with or access information and fulfill daily needs, making it more straightforward for users to disconnect (Oulasvirta et al., 2012). Numerous owned and downloaded applications, such as social media, YouTube, games, etc., make people more dependent on their smartphones and more susceptible to addiction (Gosmawi & Singh, 2016).

With its adverse side effects, smartphone use can be detrimental enough to necessitate self-control or control. This is consistent with prior research indicating that excessive smartphone use impairs both the user and others (Astriani, 2020). Individuals must limit their daily smartphone usage to 257 minutes (±4 hours and 17 minutes) to avoid developing a smartphone addiction. This duration is consumed in a single day, either continuously or cumulatively. Physically, excessive smartphone use can impair cognitive performance (Journal Apps, 2018). Moreover, the psychological effects of excessive smartphone use intercity are accompanied by feelings of anxiety, dread, and nomophobia (Pinchot et al., 2011). Nomophobia, also known as no-mobile-phone-phobia, is one of the new types of psychological issues that people who use their smartphones excessively experience in the digital age.

Each year, the prevalence of smartphone consumers with nomophobia increases. There are 77% of young adults between the ages of 18 and 24 were susceptible to experiencing nomophobia. A total of 68% of individuals between the ages of 25 and 34 were identified as having experienced nomophobia. The category of seniors aged 55 and older ranks the third (Yildrim & Correia, 2015). Similarly, individuals between 18 and 23 in Indonesia are 84% more likely to experience nomophobia (Farhan & Rosydah, 2021). (Widyastuti & Muyana, 2018). Among adolescents, the exceptionally high category of nomophobia was 5%, the high category was 31%, the medium category was 35%, the low category was 24%, and the superficial category was 5%. Other research demonstrates that adolescents are affected by high-category nomophobia in the areas of not being able to communicate and not being able to access information (Astriani, 2020); on the other hand, students who experience high-category nomophobia in the areas of not being able to communicate, not being able to access information, and being uncomfortable (Rakhmawati, 2017).

Nomophobia will result in psychological disorders such as anxiety disorders, depression, decreased attention, bipolar disorder, autism, and behavior disorders if not treated immediately (Bragazzi & Puente, 2014). On the other hand, in adolescents, it has an effect on academic performance and motivation levels in the learning process (Augner & Hacker, 2012), relationships with family and peers, poor self-control

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([Bian & Leung](), 2014), low self-esteem, and low independence ([Chóliz](), 2012), and causes depressive symptoms ([Davie & Hilber](), 2017).

Self-esteem is one of the factors that induce nomophobia. Self-esteem is an individual's evaluation of themselves concerning self-perception and self-identity. Those with poor or negative self-perception tend to seek reassurance. In this instance, it may be permissible for individuals to use smartphones, as smartphones facilitate communication at any time. Individuals have excessive and inappropriate smartphone usage ([Astriani](), 2020).

Previous research demonstrates a correlation between self-esteem and the phobia of strangers ([Delianty](), 2020). ([Hong et al.](), 2012). Individuals with low self-esteem will send more text messages via mobile than those with high self-esteem who prefer face-to-face communication. Smartphones facilitate more accessible communication with others. Individuals use smartphones due to their self-identity; therefore, they can enhance social status and security, provide entertainment, and foster social and interpersonal relationships. Smartphones make it easier for those who feel unwelcome in their surroundings, tend to be more reserved, and do not venture to voice their opinions to take advantage of their convenience ([Yildirim](), 2014).

Extraversion personality types are typically risk-takers, impulsive, and pleasure-seeking to express their emotions. Because they seek out more social situations, these individuals are more susceptible to smartphone use problems. They will engage in all social activities with their peers or on social media; however, only a tiny percentage will upload them to their social media platforms using smartphones ([Ghufron & Risnawita](), 2010).

The findings demonstrated that extraversion positively affected nomophobia. This suggests that extroverted individuals were more likely to use smartphones for their activities. Other research demonstrates that extraverted individuals are more susceptible to peer influence ([Lestari](), 2008).

Nomophobia is a new concept in the modern era; thus, empirical evidence in research addressing this issue must still be uncovered. Therefore, based on the preceding explanation, researchers are interested in investigating the relationship between self-esteem and nomophobia using extraversion as a moderating variable.

Methods

Participants

105 students actively participated in the research after being selected using quota sampling techniques. The quota sampling process commenced with determining a study group's quota or quorum. In addition, once the quota was satisfied, data collection ceased. This indicated that the researcher determined the sample size based on predetermined criteria. The proposed criteria for participants were 1) college students and 2) individuals aged 18 to 24.

Research Instruments

Self-esteem was the independent variable (X) in this study. Self-esteem is an individual's evaluation of himself concerning self-perception and self-identity. Self-esteem was measured using the Rosenberg Self-Esteem Scale ([Rosenberg](), 1965). This scale consisted of 10 items with four possible responses: 1) Strongly disagree, 2) Disagree, 3) Agree, and 4) Strongly agree. The reliability of the Rosenberg Self-Esteem Scale was 0.896%. Nomophobia was the dependent variable (Y) in this study. Nomophobia was measured by the Nomophobia Questionnaire (NMP-Q) ([Yildirim & Correia](), 2015). Nomophobia is a person's propensity to use a smartphone excessively, causing anxiety and stress when away from the device. The NMP-Q consisted of 20 items that could measure the inability to communicate, the loss of connectivity, the inability to access information, and the sacrifice of convenience. Each question has seven answer choices: 1) Strongly inappropriate, 2) Inappropriate, 3) Slightly inappropriate, 4) Neutral, 5) Slightly appropriate, 6) Appropriate, and 7) Strongly appropriate. The NMP-Q's reliability rating was 0.881%. In this study, the Moderating Variable (M) was extraversion personality. Extraversion is one of the five prominent personalities' personality dimensions. This variable was measured by the extensive five inventory (BFI) ([John & Srivatasya](), 1999). Individuals with this personality dimension tend to have characters more oriented to the outside world than themselves, enjoying fun and group environments. They are more optimistic in their outlook on life. The extensive five inventory (BFI) could assess extraversion, neuroticism, experience openness, agreeableness, and conscientiousness. The BFI consisted of 8 items and had a reliability score of 0.779. The subject was required to assign a number from 1 to 5 to each object based on its characteristics. A score of "1" indicated a response of "strongly disagree"; on the other hand, a score of "5" indicated a response of "strongly agree".

Data Analysis Technique

This research was conducted in three primary stages: Preparation commenced by identifying a research scale under the research topic. The following stage was to establish the subject selection criteria. The researcher provided the scale to the offline-selected research subject at this juncture. The concluding phase was Data Analysis. After collecting all the data, the researcher analysed them using SPSS for Windows version 21, specifically Regression parametric analysis. This test aimed to determine the effect of variable X on variable Y and that of variable M on variables X and Y. At this stage, the researcher examined the moderating effect of variable M on variables X and Y by employing multiple regression analysis techniques in SPSS for Windows version 21 and subsequently examining the prospective magnitude of variable M's moderating effect on variables X and Y. 21 and subsequently determined the prospective magnitude of the moderating effect using PROCESS v3.5 for SPSS. Three stages of hypothesis testing were conducted: model 1 (IV against DV), model 2 (IV against DV when moderated by M), and a comparison of models 1 and 2. This test was utilised to determine the R-square to determine what percentage (%) of nomophobia variance was explained by self-esteem; subsequently, it was determined if self-esteem affected nomophobia when moderating variables were present and how much affected was increased.

Table 1. Characteristics of research subjects (N=105)

Characteristics	N	%
Gender		
Male	59	56.20
Female	46	43.80
Age		
18 - 20 years	39	37.10
21 -24 years	66	62.90

Result

The study was conducted on 105 students aged 18 to 24 who were selected based on the characteristics of the determined research subjects.

Table. 1 reveals that most respondents were male, 59 people (56.2%), followed by female respondents totalling 46 people (43.8%). Judging by age, 18-20 years old as many as 39 people (37.1%) and 21-24 years old as many as 66 people (62.9%).

Table 2's regression test indicates that self-esteem can predict college students' nomophobia ($R2 = 0.093$, $F (15, 134) = 14.545$, $p = 0.000$) ($R2 = 0.093$, $F (15, 134) = 14.545$, $p = 0.000$). The R2 value of 0.093 indicates that self-esteem explains 9.3% of the variance in students' nomophobia in this study. The probability value was 0.000, indicating that self-esteem significantly affected students' phobia of insects. Consequently, it can be concluded that the hypothesis is approved.

Moreover, model 2 regression tests revealed that self-esteem can predict nomophobia when moderated by extraversion ($R2 = 0.108$, $F (1, 635) = 1.330$, $p = 0.000$; $2 = 0.108$, $F(1, 635) = 1.330$, $p = 0.000$). The R2 value of 0.108 indicates that extraversion explains 10.8% of the variance in students' nomophobia in this study. The probability value was 0.000, indicating that self-esteem could predict student nomophobia significantly when moderated by extraversion. Consequently, it can be concluded that the hypothesis is approved.

After being moderated by the extraversion variable, model 2 indicated that self-esteem could play a significant role in student nomophobia. Positively and significantly, self-esteem affected nomophobia when moderated by extraversion variables. This indicated that the greater an individual's extraversion personality, the less likely they were to experience nomophobia despite their elevated self-esteem. However, the higher the potential for nomophobia, the higher the individual's self-esteem was when extraversion was low. This was demonstrated by the -3.915 self-esteem regression coefficient and the 0.051 extraversion personality regression coefficient.

In addition, the results of the hyes analysis indicated that the moderation was 0.102, or 10.20%. This demonstrated that extraversion moderated the effect of self-esteem on nomophobia by 10.20%.

Discussion

The results of the first hypothesis test indicated that self-esteem could significantly and negatively predict the variable nomophobia. This indicated that a person's level of nomophobia was inversely proportional to their self-esteem. Those with poor or negative self-perception tend to seek reassurance. In this instance, it can make people nomophobia, causing them to use their smartphones excessively and inappropriately (Delianty, 2020).

Individuals with low self-esteem prefer device-mediated communication over face-to-face interaction. As a result, individuals with low self-esteem utilize other media to communicate with others on their smartphones. However, excessive smartphone use can cause a person to develop nomophobia (Hong et al., 2012). Individuals with nomophobia tendencies tend not to concentrate on the natural world; thus, they are alienated from their surroundings and engage in little face-to-face interaction (Bragazzi & Puente, 2014).

The results of the second test of the hypothesis revealed that extraversion as a moderator variable was a positively and statistically significant value. Individuals with high self-esteem were less likely to experience nomophobia the greater their extraversion personality trait. However, the higher the potential for nomophobia, the higher the individual's self-esteem was when extraversion was low.

Extraversion personality types typically please challenges and take risks, are impulsive, and require enjoyment to appreciate their emotions fully(Ghufron & Risnawita, 2010). In addition, individuals with extraversion personality types tend to be friendly, open, quickly adapt to the social environment, active, and socially easy to interact with (Pervin & John, 2001); therefore, they dislike using social media to interact because physical presence can satisfy their emotional needs. Consequently, individuals with extraversion tend not to require smartphones and social media for social interaction (Zhou et al., 2016).

In general, the findings of this study corroborated that extraversion personality could moderate the relationship between self-esteem and nomophobia, albeit in a minor way. The greater an individual's extraversion and self-esteem, the lower their likelihood of experiencing nomophobia. In other words, they experience more secure and ease when establishing positive interpersonal relationships with others than when using smartphones daily (Hong et al., 2012). Therefore, individuals with extroverted personalities and high self-esteem will be more receptive to the social environment and prefer face-to-face communication over smartphones.

This study had several limitations, including: First, the researcher employed a Western research instrument and subsequently translated it into Indonesian; there may be a necessity for language conformity after translation. Second, researchers had less control throughout the research; thus, destructor variables might cause the data to differ from what was anticipated. Thirdly, the results of this study could not be generalised due to the homogeneity of the research sample, which consisted of students aged 18 to 24.

Conclusion and Implications

The findings indicated that self-esteem could significantly and negatively predict the nomophobia variable. Despite having a small prospective effect, an extraverted personality as a moderator buffers the relationship between self-esteem and nomophobia. It is suspected that there may be other factors that play a more significant role; however, are not examined in this study, such as other personality types besides extraversion, developmental stages, life experiences, and how to deal with

Table 2. Model test of self-esteem, extraversion and nomophobia

Model Test	B	R2	F	Sig. (p)	t	Sig. (p)
Model 1 self esteem on nomophobia	1,377	0.093	15.134	0.000	14.545	0.000
Model 2 self esteem on nomophobia when moderated by extraversion	5.104	0.108	1.635	0.000	1.330	0.000

Table 3. Regression coefficients and hyes analysis

Variable	B	T	R2	F	T	Sig.
Self esteem	-3.915	-52.971	-	-	-	0.000
Extraversion	0.051	0.825	-	-	-	0.411
Self-esteem. Extraversion (X.M)	0.041	66.645	-	-	-	0.000
Moderation Potential			0.102	5.542	1.302	0.000

them or coping strategies and several strategies can be used to reduce the intensity of nomophobia, including being more open to the environment, increasing relationships with people in real life, having a positive outlook, and better emotional regulation.

Based on the study's limitations, several strategies can be implemented to maximize future research. These include identifying other variables contributing to reducing the intensity of nomophobia, such as sociocultural and environmental factors, the translation process of standardized measuring instruments, and ensuring the absence of destructor variables that can interfere with the research process.

Declarations

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Author Contributions

The author conducted all research activities, including literature review, data acquisition, data processing, analysis, and publication.

Conflict of Interest

There is no conflict of interest between various parties

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