NOMOPHOBIA TENDENCY IN COLLEGE STUDENTS WHO HAVE EXTROVERTED PERSONALITIES

Ananda Pratiwi[*], IGAA Noviekayati, Niken Titi Pratitis
Universitas 17 Agustus 1945 Surabaya, Indonesia
Email: anandapratiwi070@gmail.com, noviekayati@untag-sby.ac.id, nikenpratitis@untag-sby.ac.id

ABSTRACT

Although previous research has examined the general impact of nomophobia—anxiety experienced when without a mobile phone—on student populations, limited studies have specifically addressed how this condition manifests among individuals with extroverted personalities. This study aims to fill that gap by descriptive analysis of nomophobia tendencies in college students who identify as extroverts. Utilizing a quantitative descriptive approach, data were collected through purposive sampling from 148 students aged 18–25 years. The findings revealed that 127 out of 148 extroverted students demonstrated a notable tendency toward nomophobia. These results highlight the significant vulnerability of extroverted individuals to mobile phone dependence, likely due to their high need for social interaction. The study contributes to psychological research by underscoring the intersection between personality traits and technology-related anxiety. Practically, the findings offer valuable insight for mental health professionals and educators to develop targeted interventions for reducing nomophobia in extroverted student populations.

| KEYWORDS | *Extroverted Personality, Nomophobia Trends, College Students* |

INTRODUCTION

Technology is not an option but a necessity and an inseparable part of human life today. Individuals cannot avoid the use of technology in their daily lives because this is a choice of today's lifestyle (Seno & Juneman, 2016)As time passes, information and communication technology development becomes increasingly sophisticated. There have been many advances in various fields, especially in information technology. This can be seen in the development of communication tools that can be accessed in any part of the world, with only one tool with a special function.

The development of technology is inseparable from the use of smartphones. The use of smartphones can be used in all types of groups, including children, teenagers, adults, and even the elderly (Saidah, 2017).

Smartphones have many devices or applications that can make a person feel less bored (Rafy, 2019). In addition, smartphones have many applications and uses, for example, communicating with other people, sending messages via chat or email, searching and getting information, shopping using online shop applications, playing social media such as WhatsApp, Facebook, Twitter, Instagram, YouTube and games in just one tool can get all the existing facilities. So anyone using a smartphone will not feel bored (Seno, 2016).

Smartphones have taken over the mobile phone market with their capabilities, smartphones that have various facilities in them and facilitate instant communication, helping people stay connected with anyone and anywhere. Thus, people will become more dependent on their smartphones (Park et al., 2013). In addition, excessive smartphone use can worsen feelings of anxiety and anxiety caused by the absence of contact with the smartphone.

Smartphones are owned by almost everyone globally, including Indonesians. In Indonesia, the term smartphone is familiar to the public. Smartphone sales are increasing every year. Smartphones are tools used by all people in the world. Indonesia has the largest smartphone market share in Southeast Asia, with a total of 14.8 million units in smartphone sales, and is expected to continue increasing by around 10-15% (Nistanto, 2014).

Liputan6.com (2021) reported that in January 2021, smartphone use in the world reached 5.22 billion people. This number will continue to increase every year. In (Media Indonesia 2021), the use of smartphones in Indonesia reached 167 million people, or 89% of the total population in Indonesia (Kang & Jung, 2014).

The use of smartphones will always increase every year. Individuals have more than one smartphone, which will increase the number of smartphone users. Smartphone usage worldwide consumes more than 4 hours of smartphone usage per day. The use of smartphones can replace other technological tools such as televisions, laptops, and computers (Liputan6.com, 2021)

The impact of increasing smartphone use is also influenced by the impact of the current COVID-19 pandemic, individuals must stay indoors and mostly use internet media (King et al., 2010). The COVID-19 pandemic has had a considerable impact, restricting individuals' travel and communication with others. However, individuals can overcome this by using internet media or smartphones to relate to others and meet their daily needs (Liputan6.com, 2021).

In Indonesia itself, this phenomenon only appeared in 2012. The reason why the researcher took the subject of students is that, based on a survey conducted by the Indonesian Internet Service Providers Association (APJII), students occupy the highest position in the use of smartphones in Indonesia (APJII, 2018).

Research from Yildirim (2016) stated that out of 537 students at State Universities in Turkey, 206 adult students have a tendency toward nomophobia. In another study conducted in the UK, 66% of smartphone users are people who tend to be older than 18-24 years old, who tend to have nomophobia (Sumo, 2019).

Smartphone use among students is caused by the ability of smartphones themselves. Smartphones allow students to do various daily tasks on one device. But smartphone use is not only limited to that. Smartphones have many skills, such as calling and texting, checking and sending messages in emails, scheduling

appointments, browsing the internet, shopping, social networking, searching the internet, playing games, watching entertainment, and more (Park, Kim, Shon & Shim, 2013).

If students have anxiety, discomfort when not using or not using smartphones, this leads to a tendency to nomophobia, which has a negative impact on psychological, physical, social relations, behavioral, academic, or work and law (Yuwanto, 2010).

The impact that can be experienced by people who tend nomophobia can have a significant influence on their lives such as lack of direct communication with people around them, sleep pattern disorders, and consumptive behavior due to the use of smartphones with various kinds of facilities provided in them that can make individuals spend more by buying data packages to take advantage of the facilities they want to use in smartphones. In addition, excessive and uncontrollable use of smartphones causes one to harm oneself, for example, driving while playing with one's smartphone.

The tendency of Nomophobia is anxiety felt by smartphone users when they are far from their smartphones. The use of smartphones can lead to compulsive habits (Oulasvurta et al., 2012), which can lead to compulsive use and increase a wide range of pressures and stresses.

The current phenomenon is that people always prioritize the smartphones or cell phones they have, whether when eating, studying, watching television, or walking with their friends, their smartphones are always carried. Individuals may not play with their smartphones and can do activities as usual, but it does not last long, as they check or play with their smartphones or mobile phones as soon as possible. They will feel anxious and stressed if they are far away from their phones (Kompas.com, 2020).

Bivin (in Bragazzi, 2014) found several patterns of smartphone or cell phone disorders that have a tendency to nomophobia, one of which is the intensity of checking a smartphone or cell phone more than 35 times a day, not to check email or other applications, but a habit to avoid discomfort. Another study found that most students start their day by checking their social networking pages. The use of smartphones is accessed more than 4 hours per day, according to Jeffrey (in Pradana et al., 2016).

Agreeing with Bivin's pattern of using smartphones or cell phones, (in Bragazzi, 2014) found several characteristics of nomophobia, one of which is the intensity in checking smartphones or cell phones for more than 24 hours, always carrying a charger anywhere to prevent running out of battery, losing communication with other people, losing connectivity, not getting a signal, not being able to send messages or open emails, social media and experienced ringxiety.

According to Pavithra et el (2015), nomophobia refers to feelings of discomfort and anxiety when individuals do not access information on their smartphones. Judging from the discomfort, anxiety, nervousness, or sadness experienced by people living with nomophobia, it has exceeded natural limits and leads to compulsive behavior. The limitation between nomophobia and smartphone dependence lies in feelings of anxiety and fear when being far away from their smartphones. Meanwhile, dependence is a continuous effort to use the smartphone. Excessive use can lead to addictive behavior and dependence, both of which are indications of nomophobia (Pavithra et al., 2015).

In a study conducted by Bianchi & Phillips (2015), extroverted personality is one factor that makes a person experience dependence on smartphones, leading to experiencing nomophobia due to looking for social situations. Personality is the actual and potential behavior pattern of an individual, determined by genes and the surrounding environment (Eysenck in Pervin, 2005)

Eysenck (in Alwisol 2009) divides individual personality into 2 types, introverts and extroverts, which states that there are differences in actions towards the social environment and social behavior. According to Allport (1961), some of us have five to ten central traits that reflect our behavior, relating to others, and choosing places to have fun and others. Extrovert versus introvert personality describes someone as sociable or shy. This factor relates to people who like to socialize or be alone, adventurous or alert, socially dominant or passive, and so on (Chang et al., 2012). Socialization is one of the characteristics of an extroverted personality, so this type will tend to have a larger circle of friends and social networks. This can indirectly increase smartphone use in individuals who have extroverted personality types (Sharma et al., 2015).

Friedman and Schustack (2008) said that extroverted people have socialization skills and an impulsive nature, like to joke, are quick to think, are optimistic, and appreciate the existence of others around them. Individuals with an extroverted personality will need the presence of others to interact with others. Social interaction is not only done by meeting face-to-face, but can also be done using smartphones. Smartphone dependence can be defined as continuous use of smartphones (Ezoe et al., 2009). If students use smartphones continuously, it will cause addictive behavior and dependence on their smartphones, both of which are indications of nomophobia (Pavithra et al., 2015).

Antaranews.com (2019) said that all people today can be said to own gadgets. Most people have used smartphones from metropolises to remote areas in the mountains. Research conducted by Desi on adolescents in Juwana District stated that introverted and extroverted personality types have differences in the level of nomophobia tendencies. Extroverted adolescents have much higher anxiety with smartphones than introverted personality types because they have wider friendships not only in the real world but also through social networks. So, extroverts will be more anxious when they are far away from their smartphones.

The impact of nomophobia is quite significant for human social life and health. With smartphones that are quite high, some people focus more on their smartphones and ignore other people around them when gathering. This has an impact on symptoms of stress, lack of focus, often feeling panicked and irritable for no apparent reason, and antisocial (Khalisa, 2015). According to Joshi Andrea & Hamidah (2019) When individuals use smartphones too often, health impacts can occur, namely the risk of cancer, carpal tunnel syndrome, high accident risk, text neck, and others. Eye problems generally arise from staring at the screen too often with super mini letters (Pavithra, 2015).

Based on the description of nomophobia and extroverted personality types above, the formulation of the problem arises, namely, knowing the description of nomophobia tendencies in students who have extroverted personalities. This study aims to find out the description of *nomophobia* tendencies in students who have *extroverted* personalities.

The practical benefits of this study's results are expected to provide information and understanding for the public, especially students, about the relationship between extroverted *personality and* Nomophobia tendencies.

RESEARCH METHOD

Type of Research

In this study, the method used is a quantitative descriptive research method. The quantitative approach, according to Azwar (2019), is a study that focuses more on the analysis of quantitative data (questionnaires) collected through measurement procedures and processed by statistical analysis methods using SPSS (Sugiyono, 2019). Descriptive research is research aimed at describing a situation or event. The data collected is purely descriptive, so it does not intend to seek explanations, test hypotheses, make predictions, or draw implications (Azwar, 2012, 2015, 2019). Researchers use the quantitative descriptive approach to describe the phenomenon of *nomophobia* tendency in students with *extroverted* personalities.

Population and Sample

The population used is students in Yogyakarta who have an age range of 18-25 years. Male and female students who are active in using *smartphones*. The sample used to represent the population was 148 students. The number is based on the general guidelines for sampling Roscoe in (Sugiyono, 2018). Roscoe explained that 1) the number of research samples is between 30 and 500, which is a number that is feasible for research in general, and 2) if the sample is broken down into several subsamples, then the size for each subsample required is at least 30 for each subsample.

Sampling techniques

The sampling technique used in this study is the nonprobability sampling method, namely purposive sampling. Nonprobability sampling is a technique that does not allow each population to be selected as a sample (Sugiyono, 2019). The characteristics of the subjects are as follows:
1. Currently pursuing S-1 or equivalent in the city of Yogyakarta
2. 18-25 years old
3. Have a *smartphone*
4. Using internet service for more than 4 hours or 34 times daily.
5. Be active in using social media and communicating with others on social media
6. Express emotions freely on social media.

Data Collection

The data collection in this study was conducted using a quantitative approach with questionnaires as the primary method. Two scales were employed: the Nomophobia Tendency Scale, adapted from Yildirim (2015) using the No Mobile phone Phobia Questionnaire (NMP-Q), and the Extroverted Personality Scale, adapted from the EPQR-Short Form developed by Eysenck and Barrett (1985). Both instruments used a 4-point Likert scale, measuring the extent of agreement with various statements. The nomophobia scale assessed four dimensions: inability to communicate, loss of connectivity, inability to access information, and seeking comfort,

while the extroversion scale measured activity, sociability, and expressiveness. Expert judgment from a psychology lecturer was used to ensure content validity, and a try-out with 92 students was conducted to test reliability and item validity. Fifteen valid items were retained from the nomophobia scale, achieving a Cronbach's alpha of 0.824, indicating strong internal consistency. The data collection ensured that both instruments were psychometrically sound for measuring the respective constructs.

Data Analysis

The data gathered from the questionnaires were analyzed using the Statistical Package for the Social Sciences (SPSS) version 20.0 for Windows. The analysis involved descriptive statistics to examine both variables' distribution and central tendencies. Nomophobia tendency served as the dependent variable (X), while extroverted personality was treated as the independent variable (Y). A correlation analysis was conducted to explore the relationship between these variables. The selection of appropriate statistical tests, including the Pearson correlation coefficient, aimed to determine the strength and direction of the relationship between extroversion and nomophobia. The analytical procedure ensured that the findings would be both statistically valid and interpretable in the context of personality and behavioral psychology.

RESULT AND DISCUSSION

Research Implementation

The research was implemented at the Yogyakarta University of Technology by involving active students in all majors. Data was collected from July 23, 2021, to July 27, 2021, through the help of a Google form, and 92 try-out subjects were obtained. After the scale trial was carried out, the scale that had experienced the abortion of items was again distributed through the help of a Google form from June 29, 2021, to August 5, 2021. The researcher carried out the scale dissemination through the researcher's social media, such as WhatsApp, IG, Line, then through class groups and organizations, followed by the researcher, and asked for the help of all research friends outside the Yogyakarta area to help spread the online questionnaire. Then the total number of subjects obtained was 148 through Google Forms, where the number of subjects met the number of samples needed for this study. Then the data was further processed and analyzed using the help of SPSS 20.0 for Windows software.

Descriptive Research Subject

The subject of the study was a student of Yogyakarta University of Technology, aged 18 to 25 years old, who was a smartphone user. The number of subjects involved in this study was 148 students. The subject description is further described in the following table:

Table 1. Descriptive Subjects by Gender

Gender	Sum	Percentage
Man	37	25%
Woman	111	75%
Sum	148	100%

Source: Processed Data (2025)

Table 1 shows the descriptive data of subjects based on gender, where women are at the highest score with a percentage of 75% or 111 respondents, while men are at a percentage of 25% or 37 respondents.

Table 2. Descriptive Subjects by Age

Age	Sum	Percentage
18-20	56	37,83%
21-25	92	62.16%
Sum	148	100%

Source: Processed Data (2025)

Table 2 shows the descriptive values of the subject data by age. The age group of 21-25 years is represented by 62.16%, or 92 respondents. Meanwhile, the age group of 18-20 years is represented by 37.83%, or 56 respondents.

Table 3. Subject Description Based on Length of Smartphone Use

Length of use *of the Smartphone*	Sum	Percentage
<1 year	4	2,70%
1-3 Years	11	7,43%
3-4 Years	7	4,72%
4-5 Years	10	6,75%
> 5 years	116	78,37%
Sum	148	100%

Source: Processed Data (2025)

Table 3 shows the value of the subject data based on the Length of Smartphone Use. The use of >5 years was at the highest value, with a percentage of 78.37%.

Table 4. Descriptive Subjects Based on Smartphones Used

Smartphones used	Sum	Percentage
Android	118	79,72%
IOS	29	19,59%
Other	1	0,67%
Sum	148	100%

Source: Processed Data (2025)

Table 4 shows the descriptive values of the Subject Based on the Smartphone used. Android is at a percentage of 79.72%, or 118 respondents. Meanwhile, IOS is at a percentage of 19.59%, or 29 respondents, and others are at a percentage of 0.67%, or 1.

Table 5. Descriptive Subjects Based on Average Smartphone Usage in a Day

Average Smartphone Usage in a Day	Sum	Percentage
1-3 jam	14	9,45%
3-4 jam	27	18,24%
More than 4 hours	107	72,29%

Sum	148	100%

Source: Processed Data (2025)

Table 5 shows the descriptive value of the subject based on the average smartphone use in a day. More than 4 hours had a percentage value of 72.29%, or 107 respondents. 3-4 hours had 27 respondents, or 18.24%, and 1-3 had a percentage value of 9.45%, or 14 respondents.

Description of Research Data

Descriptive data on Extroverted Personality and Nomophobia Tendency in students are shown in the following table:

Table 6. Description of Research Data

Variable	Theoretical Data				Empirical Data			
	Min	**Max**	**Mean**	**SD**	**Min**	**Max**	**Mean**	**SD**
Extroverted *Personality*	20	80	50	10	38	76	55,76	7,042
Nomophobia *Tendency*	15	60	37,5	7,5	23	50	35,81	5,461

Source: Processed Data (2025)

Table 7. Category Calculation

Low	X < Mean - 1SD
Keep	Mean - 1SD $\leq$ x < Mean + 1SD
Tall	Mean + 1SD $\leq$ X

Source: Processed Data (2025)

Then, from the categorized formula, the categories of extroverted personality and nomophobia tendencies are obtained in the table as follows:

Table 8. Extroverted Personality Categories

Category	Interval	Sum	Percentage
Low	X < 49	21	14,2%
Keep	49 $\leq$ X < 63	102	68.9%
Tall	63 $\leq$ X	25	16,9%
Sum		148	100%

Source: Processed Data (2025)

Based on the table above, it is known that 14.2% or 21 respondents are in the low category. Then, 68.9% or 102 respondents were in the medium category, while 25 or 16.9% were in the high category.

Table 9. Categories of Nomophobia Tendency

Category	Interval	Sum	Percentage
Low	X < 31	21	14,2%
Keep	31 $\leq$ x < 41	127	85,8%
Tall	41 $\leq$ X	0	0%
Sum		148	100%

Source: Processed Data (2025)

Based on Table 9, 14.2%, or 21 respondents, are in the low category. Then, 85.8%, or 127 respondents, were in the medium category, while 0 respondents, or

0%, were in the high category, which means that none of the respondents were in the high category in the nomophobia tendency variable.

Research Data Analysis

Based on the results of the tests carried out, it can be known that the sample taken by the researcher was 148 respondents, of which 127 respondents were in the moderate category of nomophobia tendencies (F. K. Muhammad, 2016). And in students with extroverted personalities, it is seen in the medium category as many as 102 respondents and the high category as many as 25 respondents, with a total number of 127 respondents. So from the sample taken, 148 student respondents who have nomophobia tendencies and who have extroverted personalities, namely 127 respondents (Lane & Manner, 2011; Lee et al., 2014).

The tendency of nomophobia in college students who have the highest extroverted personality based on gender is female. This has been proven by the results of 111 respondents, or a percentage of 75%, while men are at a percentage of 25%, or 37 respondents. Previous research has also found that women have the highest tendency to suffer from nomophobia in several countries. However, it does not mean that men do not use smartphones excessively (N. G. Muhammad & Rini, 2020)According to Bianchi & Phillips (2005), men use their smartphones more often for business purposes, playing games, and contacting their friends. It is also said that men have more than one smartphone.

The highest tendency for nomophobia is that students aged 21-25 years are at 62.16%, or 92 respondents. Meanwhile, the age of 18-20 years is at the percentage of 37.83% or 56 respondents. Based on Securenvoy research, it was stated that the tendency of nomophobia increased significantly in 2008, out of 1000 respondents two of them felt afraid if they lost or did not play with their smartphones, and it was also found that the tendency of nomophobia was vulnerable to the age of 18-24 years with a percentage of 77% and followed by respondents aged 24-34 years with a percentage of 68% Pinchot (in Telecommunication Industry, 2013).

The highest intensity of use was its use for more than 5 years, with a percentage of 78.37% or 116 respondents. Indonesia's total smartphone sales reached 55 million units in 2015 and have increased since 2013 (Nistanto, 2014).

In the results of respondents using their smartphones daily, the average respondent for more than 4 hours had a percentage value of 72.29%, or 107 respondents. For 3-4 hours, there were 27 respondents, or 18.24%; for 1-3 hours, there were 9.45%, or 14 respondents.

The use of smartphones has a negative impact, feelings of anxiety, depression, constantly checking the smartphone all the time, dependence on smartphones, interaction with fellow individuals becomes reduced, a lack of empathy for the surroundings, and others (Jordaan & Surujlal, 2013). Other research suggests that using smartphones in public places can distract individuals from their surroundings, which can lead to neglect and forgetting about their sense of social responsibility (Banjo, Hu & Sundar, 2008).

According to research from Lane and Manner (2011), of the five prominent personality theories, only extraversion personalities can predict the individual's relationship with the smartphone used. This is related to the factors proposed by Bianchi and Phillips (2005); other factors can affect nomophobia, namely gender, age,

self-esteem, extraversion personality, neuroticism personality, and others (Husni, 2019).

Research from Butt and Philips (2008) states that individuals with extraverted personality types spend a lot of time calling and texting others. This will trigger individuals to spend their time playing on their smartphones, which will trigger dependence ("Measurement of the 21 Components of the P-E-N System," n.d.). Over time, it will develop into anxiety when the person is far away from their smartphone (Pavithra et al., 2015). Research conducted by Takao (2014) said that students in Japan have a high level of extraversion personality, so that students will tend to experience problematic mobile phone use (Bragazzi & Del Puente, 2014). One of the problematic mobile phone uses that occurs in students is Nomophobia. The use of smartphones among students is not influenced by personality type, but rather because of a person's need to get information and the use of smartphones themselves (Feist & Feist, 2010).

In addition, self-esteem is one of the factors influencing the tendency to nomophobia. According to Bianchi & Philips (2005), self-esteem concerns the view of oneself and identity. A person who is bad and negative about his views will tend to evaluate himself to get appreciation from himself, and the use of smartphones can allow him to be able to contact others at any time (Chasannah, 2017). So that people who have low self-esteem will send more messages or contact others (Ehrenberg et al., 2008). Research conducted by Novitasari (2018) stated that people who experience low self-esteem tend to have less confidence in themselves and use smartphones to find comfort and increase confidence in themselves (Carole, 2016).

The results of the study by Yildirim et al. (2015) said that gender can affect nomophobia, with research conducted in Turkey, which found that Nomophobia is often found in the age range of 18-25 years, who are at the higher education level, who are students. According to data from The Royal Society For Public Health, 18-25 year olds tend to experience Nomophobia because at this vulnerable age they tend not to have a job, hobbies, or other routines, so they spend more time with their smartphones. Nomophobia is a new phobia in the modern era where the interaction made by a person with his smartphone, fear, anxiety, and worry are felt by a person when far from his smartphone, and unable to contact others through his smartphone. Along with technological advancements, Nomophobia is increasingly found in our daily lives, especially among college students. Currently, all individual activities using smartphones and the internet cause all students to indirectly use smartphones in doing any activities (Yildirim, 2015).

CONCLUSION

Based on the findings of this study, it can be concluded that a significant number of students with extroverted personalities—127 out of 148 respondents—demonstrated tendencies toward nomophobia. This indicates a noteworthy association between extroverted traits, such as sociability, expressiveness, and high activity levels, with a heightened dependency on mobile phone connectivity and communication. The results highlight that extroverted individuals may rely more heavily on mobile devices as tools for maintaining social interaction and emotional satisfaction, potentially increasing their risk for nomophobia. These findings contribute to the growing body of literature on digital behavior and personality, particularly in the context of university students. For future research, it is recommended to

expand the sample population across diverse cultural and institutional backgrounds to examine whether similar patterns emerge, and to explore the potential moderating role of factors such as gender, academic stress, and digital literacy in the relationship between personality traits and nomophobia. Additionally, longitudinal studies may offer deeper insights into how nomophobia develops over time among extroverted individuals.

REFERENCES

Andrea, M. A., & Hamidah. (2019). Perilaku Nomophobic Pada Mahasiswa di Fakultas Psikologi Universitas Airlangga Surabaya. *Jurnal Psikologi Klinis Dan Kesehatan Mental*.

APJII. (2018). *Potret Zaman Now Pengguna dan Perilaku Internet Indonesia*. APJII.

Azwar, S. (2012). *Penyusunan Skala Psikologi: Edisi II*. Pustaka Belajar.

Azwar, S. (2015). *Dasar-Dasar Psikometri: Edisi II*. Pustaka Belajar.

Azwar, S. (2019). *Metode Penelitian Psikologi edisi II*. Pustaka Belajar.

Bragazzi, N. L., & Del Puente, G. (2014). A Proposal for Including Nomophobia in the New DSM-5. *Psychology Research and Behavior Management*, *7*, 155.

Carole, W. (2016). *Psikologi Wade Tavris Garry: Edisi kesebelas. Jilid 2*. Erlangga.

Chasannah, U. (2017). *Perbedaan Culture Shock Ditinjau Dari Tipe Kepribadian Introvert dan Ekstrovert Pada Mahasiswa Asing di UIN Sunan Ampel Surabaya*.

Feist, G. J., & Feist, J. (2010). *Teori Kepribadian*. Penerbit Salemba Humanika.

Husni, A. (2019). *Pengaruh Trait Kepribadian Big Five, Self Esteem dan Loneliness Terhadap Nomophobia Pada Mahasiswa UIN Syarif Hidayatullah Jakarta*.

Jordaan, D. B., & Surujlal, J. (2013). Social Effects of Mobile Technology on Generation Y Students. *Mediterranean Journal of Sciences*, *4*(11).

Kang, S., & Jung, J. (2014). Mobile Communication for Human Need: A Comparison of Smartphone Use Between the US and Korea. *Computers in Human Behavior*, *35*, 376–387.

King, A. L. S., Valenca, A. M., & Nardin, A. E. (2010). Nomophobia: The Mobile Phone in Panic Disorder with Agoraphobia Reducing Phobias or Worsening of dependence? *Cognitive and Behavioral Neurology*, *23*(1), 52–54.

Lane, W., & Manner, C. (2011). The Impact of Traits on Smartphone Ownership and Use. *International Journal of Business and Social Science*, *2*(17), 22–28.

Lee, Y. K., Chang, C. T., Lin, Y., & Cheng, Z. H. (2014). The Dark Side of Smartphone Usage: Psychological traits, Compulsive Behavior and Technostress. *Computers in Human Behavior*, *31*, 373–383.

Measurement of the 21 Components of the P-E-N system. (n.d.). *European Journal of Psychological Assessment*, *8*(2), 109–117.

Muhammad, F. K. (2016). *Perilaku Pro-sosial Ditinjau Dari Tipe Kepribadian Introvert dan Ekstrovert (studi pada mahasiswa psikologi UNNES)*.

Muhammad, N. G., & Rini, R. S. (2020). *Teori-Teori Psikologi*. Ar-ruzz Media.

Park, N., Kim, Y. C., Shon, H. Y., & Shim, H. (2013). Factors Influencing Smartphone Use and Dependency in South Korea. *Computers in Human Behavior*, *29*(4), 1763–1770.

Pavithra, M. B., Madhukumar, S., & Murthy, M. (2015). A Study on Nomophobia Mobile Phone Dependence, Among Students of a Medical College in Bangalore. *National Journal of Community Medicine*, *6*, 340–344.

Rafy, S. (2019). *Psikologi Islam*. PT. Rajagrafindo Persada.

Saidah, R. (2017). *Studi Deskriptif Nomophobia Pada Mahasiswa Di Universitas Muhammadiyah Malang*.

Seno, A. U., & Juneman, A. (2016). *Psikologi Dan Teknologi Informasi Seri Sumbangan Pemikiran Psikologi Untuk Bangsa 2*.

Ananda Pratiwi, Igaa Noviekayati, Niken Titi Pratitis

Sharma, N., Sharma, P., Sharma, N., & Wavare, R. (2015). Rising Concern of Nomophobia Amongst Indian Medical Students. *International Journal of Research in Medical Sciences*, *3*(3), 705–707.

Sugiyono. (2018). *Metode Penelitian Kuantitatif*. Alfabeta.

Sugiyono. (2019). *Metode Penelitian Kuantitatif, Kualitatif dan R&D*. Alfabeta.

Sumo, P. D. (2019). Impacts of Ebola on Supply Chains in MRB Countries: Using Liberia as a Case Study. *International Journal of Research in Business and Social Science*, *8*(3), 122–139.