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RESEARCH ARTICLE

Nomophobia and Online Gambling Behavior in College Students

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Abstract: Much research has shown that online gambling behavior has detrimental effects on various aspects, including on undergraduate students. However, studies on smartphone behavior and online gambling among students are still under research. This study aims to determine the relationship between nomophobia and online gambling behavior among university students. A total sample of 118 undergraduate students who were using smartphones and actively playing online gambling participated in this study. We used the Nomophobia Questionnaire scale and the Online Gambling Symptom Assessment Scale to obtain nomophobia and online gambling behavior data. Correlation analysis showed a significant and positive correlation between nomophobia and online gambling behavior, with a coefficient r being 0.439 and a p-value being 0.000 ($p<0.05$). The results show that there is a positive relationship between nomophobia and online gambling behavior in college students. Gender analysis showed that there were no significant differences between male and female students in online gambling behavior, whereas in nomophobia, female students had higher levels than male students. These findings highlight the urgency of strengthening digital literacy to prevent online gambling behavior among undergraduate students.

Keywords: Digital Literacy, Nomophobia, Online Gambling Behavior, Smartphone Addiction, University Students

Abstrak: Perilaku judi online telah banyak dikaji memiliki dampak negatif dalam beragam aspek, termasuk di kalangan mahasiswa. Meskipun demikian, masih sangat terbatas penelitian yang mengkaji keterkaitan antara penggunaan smartphone dengan perilaku judi online pada mahasiswa. Penelitian ini bertujuan untuk mengetahui hubungan antara nomophobia dengan perilaku judi online pada mahasiswa. Sebanyak 118 mahasiswa yang menggunakan smartphone dan aktif bermain judi online terlibat dalam penelitian ini. Pengumpulan data dilakukan dengan menggunakan skala Nomophobia Questionnaire untuk nomophobia dan skala Online Gambling Symptom Assessment Scale untuk data perilaku judi online. Analisis korelasi menunjukkan nilai koefisien korelasi (r) sebesar 0,44 dengan arah kekuatan sedang dan nilai signifikansi (p) sebesar 0,000 ($p<0,05$). Hasil menunjukkan bahwa terdapat hubungan positif antara nomophobia dan perilaku judi online pada mahasiswa. Hasil analisis perbedaan berbasis gender menunjukkan tidak terdapat perbedaan yang signifikan antara laki-laki dan perempuan dalam perilaku judi online, sedangkan pada nomophobia yaitu perempuan memiliki tingkat yang lebih tinggi dibandingkan laki-laki. Penelitian ini memiliki implikasi perlunya program penguatan literasi digital untuk mencegah terjadinya judi online di kalangan mahasiswa.

Kata kunci: Literasi Digital, Nomophobia, Perilaku Judi Online, Kecanduan Smartphone, Mahasiswa

INTRODUCTION

Gambling is a social phenomenon that has long been recognized in human history, even its existence was found since ancient times accompanied by archaeological evidence (Ma'u, 2016). Gambling Industry News (2024) estimates that around 26% of the total global population has engaged in gambling activities at least once in their lives. In the digital era, gambling has undergone a significant transformation from conventional forms to online gambling, which utilizes internet access and smartphones. This shift allows users to place bets anytime and anywhere (Griffiths, 2003). Based on data from H2 Gambling Capital published by Visual Capitalist, global online gambling gross revenue reached USD 102 billion in 2021. The largest online gambling markets were the United Kingdom (USD 12.48 billion), the United States (USD 10.96 billion), and Australia (USD 6.55 billion) (Wicaksono, 2023). In Indonesia, Databoks reported that as of June 2024, approximately four million individuals were identified as online gambling users. Of these, two percent (around 80,000) were children under the age of ten, while the highest percentage (forty percent or 1.64 million) were aged between thirty-one and fifty. Furthermore, the majority of online gamblers (eighty percent) came from lower socioeconomic backgrounds (Muhamad, 2024). The Indonesian Ministry of Communication and Information Technology also reported that 1.9 million online gambling contents were blocked between July 17, 2023 and May 22, 2024 (Andayani, 2024).

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These figures indicate the rapid global and national growth of online gambling despite existing legal restrictions in Indonesia.

University students are considered a vulnerable group when it comes to various forms of digital behavioral issues, including online gambling. According to the Minister of Higher Education, Science, and Technology, Satryo Soemantri, approximately 960,000 students in Indonesia have been involved in online gambling activities (Romadhan, 2024). Online gambling among students has had significantly detrimental effects on various aspects of their lives. Socially, such involvement can lead to isolation, strained family and peer relationships (Nayottama, 2024), and increased risk of criminal behavior (Mahilda and Setiawan, 2025). One case in Bandung involved two students, one of whom accrued gambling debts up to 25 million rupiahs, often chose gambling over attending classes, and even sold a friend's belongings to fund gambling activities (Rizki, 2024). Another case involved a 23-year-old man who murdered and dismembered his partner to seize her assets and repay gambling debts (Suryani, 2023). Financially, many students spend tuition funds, take out loans, or sell valuable possessions to support their gambling habits, which can jeopardize their educational future (Nayottama, 2024). These cases reflect the severe consequences of online gambling for individuals, families, and communities.

Academically, students engaged in online gambling tend to experience a decline in performance. Common issues include difficulty focusing, decreased motivation, increased absenteeism, and a drop in academic and extracurricular achievements (Mahilda and Setiawan, 2025; Nayottama, 2024). Moreover, online gambling negatively affects students' mental health, contributing to stress, anxiety, depression, sleep disorders, and psychological distress (Wirareja and Sa'adah, 2024). It also leads to addiction and severe financial problems (Casu et al., 2023). A study by Pramita et al. (2024) found that online gambling affects mental health, increases dependency, alters perceptions of winning chances, and ultimately impacts students' academic performance. Similarly, Kuncoro and Kalifia (2024) demonstrated a significant negative relationship between online gambling and mental health. These findings suggest that online gambling presents a serious issue for university students amid rapid technological advancements.

Multiple studies have shown that online gambling behavior is influenced by psychological, social, economic, situational, and personal factors. Psychological factors include impulsivity (Sidiq et al., 2024; Marliana, 2025), sensation seeking (Riley et al., 2021; Fiyanda and Setyawati, 2024), excessive smartphone use (James et al., 2019), and escapism (Griffiths, 2003; Athallah and Isnani, 2024). Social factors involve peer influence (Achmadhani et al., 2024; Laras et al., 2024) and social pressure (Subagyo and Astuti, 2022; Galap et al., 2025). Economic factors include financial stress (Subagyo and Astuti, 2022; Friska et al., 2024; Juliani et al., 2024) and the expectation of instant financial gain (Kuncoro and Kalifia, 2024). Situational factors include accessibility (Blaszczynski and Nower, 2002; Griffiths, 2003; Gainsbury, 2015; Juliani et al., 2024; Galap et al., 2025), anonymity (Griffiths, 2003; Friska et al., 2024), and advertising or promotional content (Akbar et al., 2024; Fathor et al., 2024; Sipayung and Handoyo, 2024). Personal traits such as low self-control (Fahrezi and Simbolon, 2024; Billah et al., 2025; Sofiyulloh and Suhana, 2025) and risk-taking tendencies (Amahorseya, 2023) also contribute. Among these, excessive smartphone use is increasingly recognized as a significant factor among students.

According to the 2024 State of Mobile report by Data.ai, Indonesia ranked first in mobile device usage (including Android phones and tablets) in 2023, with an average daily usage of 6.05 hours (Iradat, 2024). The majority of internet users in Indonesia are from Generation Z (born 1997 to 2012) at 34.40 percent, followed by millennials (born 1981 to 1996) at 30.62 percent (APJII, 2024). This data suggests that students, predominantly from Generation Z, are highly active internet and mobile device users. Consequently, they face a higher risk of exposure to online activities, including online gambling. A study by Kalkan and Bhat (2020) found a significant relationship between excessive online activity, such as internet use, online gaming, and online gambling, with increased symptoms of depression and reduced quality of life among students. This suggests that digital addiction may serve as a gateway to more serious gambling behavior.

Intensive smartphone use is closely related to nomophobia. Nomophobia, or no-mobile-phone phobia, refers to the fear or anxiety experienced when individuals are unable to use or access their mobile phones (Yildirim, 2014). This high dependency encourages users to stay constantly connected, often seeking quick stimulation and emotional relief through online activities to manage their anxiety (Fajri and Karyani, 2021; Lesmana and Loe, 2022). Such use increases exposure to advertisements and access to gambling platforms (Akbar et al., 2024; Fathor et al., 2024; Paminto et al., 2024), while the accompanying anxiety, coupled with low self-control and high impulsivity (Aldianita and Maryatmi, 2019), can make individuals more likely to gamble as a means of coping with psychological discomfort (Athallah and Isnani, 2024). Therefore, nomophobia may trigger online gambling behavior through excessive smartphone use, increased exposure to gambling content, and impaired self-regulation.

To the best of the researchers' knowledge, there remains a gap in the literature regarding the direct relationship between nomophobia and online gambling behavior. Several studies have linked excessive smartphone use to various forms of digital addiction. For example, Putri et al. (2024) found that nomophobia and academic stress significantly predicted excessive online gaming among university students. A meta-analysis by Daraj et al. (2023) indicated positive correlations between nomophobia and anxiety, smartphone addiction, and insomnia. Other research has linked nomophobia to social media use and self-control (Fajri and Karyani, 2021), online gaming (Pamungkas and Prahara, 2020; Sari, 2023; Karlin and Afdal, 2024), problematic internet use and online game addiction (Ayar and Bektas, 2021), and general internet addiction (Gezgin et al., 2018). Internet Addiction Disorder (IAD) includes a wide range of activities such as social media, email, pornography, gaming, chatting, and online gambling (Ningtyas, 2012).

On the other hand, online gambling behavior has gained increasing attention due to the ease of access through digital devices. Riley et al. (2021) found in a systematic literature review of 85 studies that risk factors for gambling behavior among adolescents and young adults (ages 10 to 25) include sensation seeking and technology involvement such as online gambling and gaming apps. These technologies facilitate access and elevate the risk of problematic gambling, often perceived by users as a means of entertainment or escape from stress. James et al. (2019) further showed that smartphone gambling engagement encourages persistent behavior due to its rapid feedback, addictive design, and impulsive nature.

González-Cabrera et al. (2020), through the development of the Online Gambling Disorder Questionnaire (OGD-Q) for adolescents, reported that while

the statistical correlation between OGD-Q scores and nomophobia was not significant, nomophobia was still considered theoretically relevant due to its psychological similarity and shared digital context with online gambling. The study also found positive correlations between OGD-Q and DASS-21 scores, as well as between nomophobia and DASS-21, suggesting that nomophobia may still be relevant in the context of digital addictive behavior and associated psychological disorders.

Supporting this, Lesmana and Loe (2022) found a significant positive relationship between nomophobia and problematic internet use among university students. Davis (2001) classified online gambling as a form of Specific Problematic Internet Use (SPIU), where individuals pathologically use the internet for specific purposes. This implies that anxiety caused by being unable to access smartphones (nomophobia) may drive individuals to maladaptive internet use, including online gambling.

Although there is still a lack of research directly examining the relationship between nomophobia and online gambling, three studies provide strong indications of a connection between these variables (Fransson et al., 2018; Gezgin et al., 2025; Sahu et al., 2019). Fransson et al. (2018) identified a significant association between smartphone dependency and gambling behavior. Since smartphone dependency is linked to nomophobia (Apriyeni et al., 2023; Karaoglan Yilmaz et al., 2024; Raharja & Sumarno, 2023), nomophobia is likely related to online gambling among university students. A qualitative study by Gezgin et al. (2025) supported this link, suggesting that online gambling often arises alongside smartphone usage through gambling applications. Additionally, Sahu et al. (2019) found that one of the outcomes of excessive smartphone use is pathological gambling. Thus, this study seeks to fill the identified research gap by exploring the relationship between nomophobia and online gambling behavior among university students who are highly exposed to digital technology and vulnerable to various forms of online addiction.

The implications of this study can contribute to the development of more comprehensive digital education and literacy programs, as well as policies for wiser smartphone use in the campus environment. In addition, the results of this study can also serve as a foundation for the development of applications and technologies that support healthy smartphone use and reduce the risk of engagement in online gambling behavior. For example, the development of applications that can help students manage smartphone usage time or features that can limit access to online gambling sites. Furthermore, a deeper understanding of the relationship between nomophobia and online gambling behavior can aid in the formulation of more effective public policies. This could include stricter regulation of online gambling advertisements on digital platforms, as well as public awareness programs targeted specifically at university students.

Based on this understanding, this study not only contributes to the development of knowledge in the fields of psychology and information technology but also has significant practical implications in efforts to address the problem of online gambling behavior among Indonesian university students. Therefore, the hypothesis proposed in this study is that there is a positive relationship between nomophobia and online gambling behavior in college students. Researchers can assume that the higher the nomophobia, the higher the online gambling behavior, conversely the lower the nomophobia, the lower the online gambling behavior in college students.

METHODS

Research Design and Participant Characteristics

This study employed a quantitative method with a correlational design aimed at examining the relationship between nomophobia and online gambling behavior among university students. Accordingly, the dependent variable in this research is online gambling behavior, while the independent variable is nomophobia. The participants consisted of 118 individuals selected using purposive sampling. The inclusion criteria were: (1) active university students in Indonesia, (2) users of smartphones, and (3) individuals who had engaged in online gambling activities within the past month.

Measurement Instruments

Online Gambling Behavior: The online gambling variable in this study was measured using the Online Gambling Symptom Assessment Scale (OGSAS), developed by Kalkan and Griffiths (2021). The original scale demonstrated high reliability, with a Cronbach's alpha of 0.83. The version used in this study is a translated and adapted version developed by Ananda (2024), which showed an even higher reliability score with a Cronbach's alpha of 0.925. For the purpose of this study, only one modification was made to item number one to enhance the clarity and relevance of the item in the Indonesian context.

The OGSAS assesses several dimensions of online gambling behavior, including urge, excitement, and self-control. It consists of 12 items that measure various aspects of online gambling. Items 1 to 4 assess average usage, items 5 to 7 assess frequency, item 8 measures the duration or time spent on online gambling or related behaviors, item 9 assesses excitement and tension associated with gambling, item 10 evaluates the pleasure or thrill of winning, item 11 captures emotional pressure, and item 12 assesses personal problems resulting from gambling habits. A modified 5-point Likert scale was used for this instrument to better capture the specifics of online gambling behavior. Each item is scored from 0 to 4, with a total possible score ranging from 0 to 48. The total scores are categorized as follows: 8–20 (mild), 21–30 (moderate), 31–40 (severe), and 41–48 (extreme).

Nomophobia: Nomophobia was measured using the Nomophobia Questionnaire (NMP-Q), developed by Yildirim (2014). The NMP-Q consists of 20 items with a high reliability score (Cronbach's alpha = 0.945). The scale employs a 7-point Likert format: (1) strongly disagree, (2) disagree, (3) somewhat disagree, (4) neutral, (5) somewhat agree, (6) agree, and (7) strongly agree. The instrument evaluates nomophobia across four dimensions: not being able to communicate, losing connectedness, not being able to access information, and giving up convenience. The total score ranges from 20 to 140, with higher scores indicating a greater level of nomophobia.

The researcher conducted a translation and cultural adaptation process for the NMP-Q from its original language into Indonesian. This process involved two experts in relevant fields to ensure linguistic and contextual appropriateness. The first translation was completed by a team from the Center for International Language and Cultural Studies (CILACS), and the second by an academic expert independently. Both translations were reviewed and compared for accuracy of meaning, linguistic clarity, and cultural relevance. A readability test was conducted with 10 university students to assess the clarity of the Indonesian

version. Based on their feedback, minor revisions were made to improve wording and phrasing. For example, the term "constant" was changed to "continuously" in item 1, and the phrase "smartphone capabilities" in item 4 was clarified as "features and functions of the smartphone". Following these procedures and the readability testing, the Indonesian version of the NMP-Q was finalized and is now ready for use as the primary measurement instrument in this study.

Data Collection Procedure

In the data collection stage, a purposive sampling technique was employed with the inclusion criteria being: (1) active university students in Indonesia, (2) smartphone users, and (3) individuals who had engaged in online gambling within the past month. The researcher created an online version of the questionnaire using the Google Forms platform. This online questionnaire included the research information sheet, informed consent form, demographic data section, the OGSAS scale, and the NMP-Q scale. The questionnaire link was distributed through various social media platforms and communication channels, such as Instagram, WhatsApp, TikTok, Telegram, X (formerly Twitter), Quision, and also through in-person outreach. On the first page of the questionnaire, potential participants were provided with information regarding the research objectives, participant eligibility criteria, and confidentiality assurances. Those who met the criteria and were willing to participate were asked to provide their consent online before proceeding to the full questionnaire.

Throughout the data collection process, the researcher regularly monitored the number of responses and the quality of the data received. A screening item was included under the subject identity section, asking: "Have you ever engaged in online gambling?" with response options "Yes" and "No." Participants who answered "Yes" were allowed to proceed to complete the full questionnaire, while those who answered "No" were automatically redirected by the Google Forms system to the final submission page. This system was designed to ensure the effectiveness and relevance of the data in accordance with the study's participant criteria. Once the targeted sample size was reached or the data collection period ended (from October 30 to November 29, 2024), access to the online questionnaire was closed.

A total of 333 individuals initially completed the questionnaire. Following this, a data cleaning procedure was conducted in which participants who indicated that they had never engaged in online gambling were excluded from further analysis. After removing 215 cases that did not meet the criteria, the final sample consisted of 118 university students.

Data Analysis

The collected data were downloaded and analyzed using IBM SPSS Statistics Version 25. The data analysis process was conducted systematically and comprised three main stages. The first stage involved assumption testing, which aimed to ensure that the data met the requirements for statistical analysis and to determine the appropriate analytical method for hypothesis testing. The assumption tests included a normality test, conducted using the Kolmogorov-Smirnov Test to assess whether the data followed a normal distribution, and a linearity test to determine whether a linear relationship existed between the independent and dependent variables using the Deviation from Linearity analysis. Following the assumption tests, hypothesis testing was conducted to examine the relationship between nomophobia and online gambling behavior. Based on the normality test results, not all variables were normally distributed; therefore, the non-parametric Spearman Rank correlation analysis was used. This analysis aimed to determine the strength and direction of the relationship between the two research variables.

To gain a deeper understanding, this study also conducted additional analyses, including multiple linear regression and group difference tests. Multiple linear regression was employed to assess the extent to which each dimension of nomophobia simultaneously influenced online gambling behavior. In addition, the coefficient of determination (r^2) was calculated to determine how much of the variance in online gambling behavior could be explained by nomophobia. A t-test was also performed to examine the partial effect of each dimension of nomophobia on online gambling behavior. In addition to regression analysis, this study examined gender-based group differences using two methods. First, the Mann-Whitney U-Test was used to assess gender differences in online gambling behavior, as this variable did not meet the assumption of normality. Second, the Independent Samples T-Test was employed to assess gender differences in the level of nomophobia, as the data for this variable were normally distributed.

RESULTS OF STUDY

The characteristics of research participants are presented in a descriptive table to provide a clear understanding of the respondents involved in this study. The data include demographic variables such as age, gender, region of residence, duration of smartphone use, and duration of involvement in online gambling, all of which are relevant to the focus of this research. As shown in Table 1 below, the majority of participants were aged between 18 and 24 years (73.73%), with a gender distribution dominated by males (53.39%). The respondents' regions of residence were concentrated primarily in Java (71.2%), while other regions such as Sumatra, Sulawesi, Kalimantan, Nusa Tenggara, and Maluku were less represented. Additionally, a "not specified" category (5.9%) was included for participants who did not provide this information or submitted invalid responses. Most participants reported using smartphones for 4 to 6 hours per day (32.20%), followed by 7 to 9 hours per day (30.51%). Regarding the duration of involvement in online gambling, the majority reported engagement for less than one month (46.61%). Only a small number had longer involvement, such as 2 to 3 years (2.54%), and none reported engaging in online gambling for more than three years.

The descriptive analysis aims to determine the levels of online gambling behavior and nomophobia among participants. As shown in Table 2, the mean score for online gambling behavior was 17.3 (SD = 9.32), with a minimum score of 0 and a maximum score of 36. This indicates a high degree of variability and a wide dispersion of data among participants. Meanwhile, the mean score for nomophobia was 105 (SD = 24.5), with a minimum score of 20 and a maximum score of 140, suggesting a moderate level of variability but still showing notable differences among individuals.

Table 1
Participant Characteristics (N= 118)

Variable	Frequency (N)	Percentage (%)
Age		
18-24 years	87	73.7
25-31 years	21	17.8
32-46 years	10	8.5
Gender		
Male	63	53.4
Female	55	46.6
Region of Residence		
Java	84	71.2
Sumatera	18	15.3
Sulawesi	3	2.5
Kalimantan	1	0.8
Nusa Tenggara	3	2.5
Maluku	2	1.7
Not specified	7	5.9
Smartphone Usage Duration		
Less than 1 hour	1	0.8
1-3 hours	16	13.6
4-6 hours	38	32.2
7-9 hours	36	30.5
More than 9 hours	27	22.9
Online Gambling Involvement Duration		
Less than 1 month	55	46.6
1-6 months	38	32.2
7-12 months	9	7.6
1-2 years	13	11.0
2-3 years	3	2.5
More than 3 years	0	0

Table 2
Description of Research Data

Variable	Mean	Score		Standard Deviation
		Min	Max	
Online Gambling Behavior	17.3	0	36	9.32
Nomophobia	105	20	140	24.5

The normality of the data distribution was assessed using the Kolmogorov-Smirnov Test. Data are considered normally distributed if the significance value (p) is greater than 0.05 ($p > 0.05$). Conversely, if the significance value is less than 0.05 ($p < 0.05$), the data are considered not normally distributed. As shown in Table 3 below, the normality test results indicate that the online gambling behavior variable had a significance value of 0.025 ($p < 0.05$), meaning the data were not normally distributed. Meanwhile, the nomophobia variable had a significance value of 0.087 ($p > 0.05$), indicating that the data were normally distributed. Therefore, since not all variables met the assumption of normality, the hypothesis testing was conducted using the non-parametric Spearman Rank correlation analysis.

The linearity test was conducted to determine whether a linear relationship exists between the variables. A relationship is considered linear if the significance value (p) of the Deviation from Linearity is greater than 0.05 ($p > 0.05$), and considered non-linear if the value is less than 0.05 ($p < 0.05$). As shown in Table 3, the linearity test between nomophobia and online gambling behavior yielded a significance value of 0.531 ($p > 0.05$), indicating a significant linear relationship between the two variables. Furthermore, the calculated F value was 0.981, which is lower than the F table value (1.57), suggesting no significant deviation from linearity.

The hypothesis test in this study aimed to examine the positive relationship between nomophobia and online gambling behavior among university students. Based on the results of the assumption tests showing non-normal distribution but a linear relationship, the hypothesis was tested using Spearman's Rank non-parametric correlation analysis. As presented in Table 4, the correlation coefficient (r) was 0.439, indicating a moderate positive correlation between nomophobia and online gambling behavior. The positive value signifies a unidirectional relationship, meaning that higher levels of nomophobia are associated with higher levels of online gambling behavior. The coefficient of determination (r^2) was 19.3%, indicating that nomophobia contributed to 19.3% of the variance in online gambling behavior. Additionally, the significance value (1-tailed) was 0.000 ($p < 0.05$), suggesting that the relationship between the two variables is statistically significant.

Further analysis was conducted using multiple linear regression to examine the influence of each dimension of nomophobia on online gambling behavior. As shown in Table 5, the dimensions of Not Being Able to Communicate (NBC), Losing Connectedness (LC), and Not Being Able to Access Information (NAI) did not significantly affect online gambling behavior, as indicated by significance values (p) greater than 0.05 ($p > 0.05$). Conversely, the dimension of Giving Up Convenience (GUC) had a significance value of 0.049, which is below the 0.05 threshold ($p < 0.05$), indicating a significant effect on online gambling behavior. This dimension reflects an individual's dependency on the practical conveniences of smartphone use, such as battery availability, internet connectivity, and instant access. These findings suggest that individuals who heavily rely on the functional conveniences of smartphones are more likely to engage in activities like online gambling, which share similar characteristics of comfort and instant accessibility.

Table 3
Assumption Testing: Normality and Linearity Tests

Test	Variable	F	Sig (p)	Description
Normality Test (*Kolmogorov-Smirnov*)	Online Gambling Behavior		0.025	Not Normal
	Nomophobia		0.087	Normal
Linearity Test	Nomophobia*Online Gambling Behavior	0.981	0.531	Linear

Table 4
Hypothesis Test Results

Variable	r	r^2	Sig (p)	Description
Online Gambling Behavior and Nomophobia	0.439	0.193	0.000	Significant

Table 5
Multiple Linear Regression Test Results

Nomophobia Dimensions	Sig (p)	Description
Not Being Able to Communicate (NBC)	0.288	Not Significant
Losing Connectedness (LC)	0.294	Not Significant
Not Being Able to Access Information (NAI)	0.099	Not Significant
Giving Up Convenience (GUC)	0.049	Significant

This study also found a significant difference in nomophobia between male and female participants. As shown in Table 6, the results of the Independent Samples T-Test indicated a significance value (p) of 0.001. The mean score for males was 98.35, while for females it was 112.71, suggesting that female students exhibited a higher level of nomophobia compared to their male counterparts.

Table 6
Results of Differential Test of Nomophobia and Online Gambling Behavior Based on Gender

Gender	N	Nomophobia		Online Gambling Behavior	
		Mean	Sig (p)	Mean	Sig (p)
Male	63	98.35	0.001	54.60	0.096
Female	55	112.71		65.11	

Furthermore, the results of the Mann-Whitney U-Test on online gambling behavior indicated no significant difference between male and female participants. However, the mean rank for males was 54.60 and for females was 65.11, suggesting that female participants exhibited higher online gambling behavior compared to their male counterparts.

DISCUSSION

This study aims to determine the relationship between nomophobia and online gambling behavior among students in Indonesia. The hypothesis proposed in this study is that there is a positive relationship between nomophobia and online gambling behavior among students. The researcher assumes that the higher the level of nomophobia, the higher the level of online gambling behavior, and conversely, the lower the level of nomophobia, the lower the level of online gambling behavior among students. The analysis conducted in this study indicates that the hypothesis results are acceptable. This can be seen in the results of the Spearman Rank correlation hypothesis test, which shows a correlation coefficient (r) value of 0.439 with a moderate strength category and a significance value (p) of 0.000 ($p<0.05$). Nomophobia and online gambling behavior have an r^2 value of 19.3%, indicating that nomophobia contributes 19.3% to online gambling behavior.

The results of this study reinforce the understanding that nomophobia, as anxiety arising from the inability to access a smartphone, acts as a risk factor in online gambling behavior. When someone experiences nomophobia, the anxiety that arises drives excessive smartphone use as a way to reduce that discomfort (Fajri & Karyani, 2021; Lesmana & Loe, 2022). This increases the time and opportunities to access various online activities, including online gambling platforms that are easily accessible anytime and anywhere. Additionally, the anxiety and dependence associated with nomophobia can reduce self-control (Fajri & Karyani, 2021; Fathoni & Asiyah, 2021; Noorisa & Hariyono, 2022) and increase impulsivity (Aldianita & Maryatmi, 2019), making individuals more prone to engaging in addictive behaviors such as online gambling as a form of coping or escape from psychological discomfort (Athallah & Isnani, 2024). Practically, this process occurs when individuals experiencing nomophobia frequently check their smartphones to reduce anxiety, then unconsciously encounter attractive advertisements or offers for online gambling (Akbar et al., 2024; Fathor et al., 2024; Paminto et al., 2024), and repeated exposure can trigger interest and involvement in online gambling (James et al., 2019).

Based on this mechanism, as individuals continuously seek to stay connected, the likelihood of being exposed to online gambling content or advertisements increases. According to a survey by Populix (2024), 82% of internet users in Indonesia reported having seen online gambling advertisements in the past six months, and 63% of that group admitted to frequently seeing similar advertisements every time they accessed the internet. Thus, nomophobia not only increases the frequency of smartphone use but also amplifies the risk of involvement in online gambling behavior through mechanisms of anxiety, self-control, impulsivity, and emotional escape.

Although no studies have yet been conducted on the direct relationship between nomophobia and online gambling, several studies suggest the potential for such a relationship. For example, Lesmana and Loe (2022) found that nomophobia was positively correlated with problematic internet use among university students, while Davis (2001) categorized online gambling as part of Specific Problematic Internet Use (SPIU). This strengthens the assumption that nomophobia may act as a risk factor in the development of online gambling behavior. Furthermore, according to Daraj et al. (2023), nomophobia has a significant association with smartphone addiction, with meta-analysis results showing a correlation coefficient (r) of 0.39 (95% CI: 0.04 to 0.75). This means that the higher an individual's level of nomophobia, the higher the likelihood of that individual developing dependence on smartphone use. This dependence can ultimately lead individuals to engage more frequently and more easily in addictive digital activities, including online gambling.

According to James et al. (2017), gambling essentially works because of a reinforcement system (whether through monetary rewards, sensations, or other forms) that occurs after a certain period of time following several gambling attempts. The reinforcement that occurs after an individual gambles makes the player want to repeat the activity. According to James et al. (2017), the presence of smartphones offering personalized gambling experiences such as the ability to play anywhere and choose privacy settings further exacerbates the risk of gambling behavior. Based on the concept of online gambling, individuals experiencing nomophobia are at risk of succumbing to the temptation of online gambling, especially those with low self-control or self-regulation abilities. Since nomophobia drives individuals to remain constantly attached to their smartphones, this increases the risk of exposure to gambling content within them. Ultimately, when they attempt to play, they are drawn into the temptation to continue repeating the behavior due to the principle of reinforcement.

James et al.'s (2019) research further shows that smartphone use plays a significant role in reinforcing

gambling habits. In that study, participants continued gambling even when the chances of winning were eliminated. This indicates that smartphone use itself can reinforce involvement in gambling behavior due to its rapid response patterns, addictive nature, and impulsive urges. Based on the previous studies outlined, although the specific variables used differ, the studies above share a commonality in the addictive patterns between smartphone addiction, problematic internet use, and online gambling. Such behavior may indicate dependence on technological devices and the internet. Therefore, this study can be seen as an effort to expand understanding of the impact of nomophobia on online gambling behavior, with a focus on online gambling behavior.

Furthermore, based on the four dimensions of nomophobia, the regression test results show that only the dimension of loss of convenience (giving up convenience/GUC) has a significant influence on online gambling behavior, while the other dimensions do not show a significant influence. This finding indicates that aspects of dependence on the convenience of smartphone use, such as the need for internet connectivity, battery life, credit, and instant access (Yildirim & Correia, 2015), play a crucial role in driving individual engagement in online gambling. The desire to remain in a comfortable and digitally connected state creates a tendency to seek instant and easily accessible activities, which are characteristic of online gambling platforms.

The findings from this analysis suggest that the dimension of dependence on smartphone convenience can be a factor in understanding the relationship between nomophobia and online gambling behavior. The results of McCormack et al.'s (2014) study show that convenience is the highest reason for online gambling, at 80.4%. Research by Cheever et al. (2014) shows that psychological dependence on digital devices can increase anxiety when those devices are unavailable, particularly among heavy users. Additionally, Griffiths (2015) emphasizes that social media platforms are not only used for communication but also serve as a means for addictive behavior, including gambling and gambling-based games.

The three other dimensions that did not show a significant relationship were not being able to communicate (NBC), losing connectedness (LC), and not being able to access information (NAI). This can be explained through the characteristics of the nomophobia dimension from Yildirim and Correia (2015). The NBC dimension relates to social anxiety when unable to connect with others, such as family or friends. Although this dimension is emotionally significant, the need to communicate does not necessarily drive someone to seek entertainment through online gambling. Furthermore, the LC dimension describes anxiety about losing social connection and digital identity, particularly on social media. This dimension reflects the need for social recognition and social information updates, although individuals may feel uncomfortable when disconnected from social media, this does not directly trigger involvement in online gambling. Meanwhile, the NAI dimension relates to anxiety about losing access to information. Individuals in this category tend to use smartphones to search for news, current information, or factual data. Although losing access to information can cause discomfort, it is not directly related to the motivation for online gambling.

These findings suggest that dependence on technology is not limited to digital devices but also extends to online activities such as gambling. The dimension of giving up convenience in nomophobia can strengthen individuals' involvement in technology-based activities, such as online gambling, which is increasingly accessible through digital devices and social media. This indicates that the relationship between nomophobia and online gambling behavior can be explained through its connection to technology accessibility and the patterns of addiction that form. This is further emphasized by the primary factors influencing online gambling according to Griffiths (2003), namely accessibility, which can increase gambling frequency due to unrestricted access to time and location.

Additional analysis of the difference test shows no significant difference in online gambling behavior between male and female students, but the mean values indicate that females have higher values than males. This suggests that gender is not the primary factor in differences in online gambling behavior among students. The results of this study differ from previous research, which found that the majority of online gamblers are male (McCormack et al., 2014; Venne et al., 2019). The study examined patterns of online gambling behavior based on gender to identify differences. The results showed that women gambled for shorter periods with shorter sessions, had different motivations (such as practicing for free, saving money, and boredom), and felt more guilt and shame compared to men.

Furthermore, a qualitative study in Kediri Regency found that women from various backgrounds, such as housewives and informal workers, participate in online gambling due to economic reasons, social pressure, and easy access to technology (Bagaskara, 2025). They gamble as a way to avoid life problems, seek quick profits, or because they are influenced by their surroundings. While some may gain short-term financial benefits, the negative impacts are greater, such as losing money, social stigma, and psychological issues. Regarding social stigma, which previously associated gambling with men, technological advancements and easy internet access have increased women's involvement in online gambling. Initially hindered by social stigma, the emergence of more inclusive online gambling platforms has made them more comfortable trying it without fear of social judgment. These findings also show that although there are no significant differences between men and women in online gambling habits, social and economic factors still play a role in encouraging women to participate.

Further analysis shows a significant difference in the level of nomophobia between male and female students. These findings indicate that female students have higher levels of nomophobia than male students. This reinforces previous research findings that tend to show higher levels of nomophobia among women than men (Avci, 2022; Gezgin et al., 2018; Kumar & Banerjee, 2024; Pasongli et al., 2020). These differences may be attributed to women's perceived tendency to express their emotions more easily, feel loneliness more readily, and thus be more vulnerable when disconnected from their social networks, leading to higher levels of nomophobia compared to men (Arpaci, 2020). Another finding also examines these differences through the dimension of neuroticism, with women with high levels of neuroticism being more prone to anxiety, worry, and emotional discomfort, and thus more likely to experience stress when separated from digital devices (Dixit, 2023).

These gender-based analysis results differ from Hidayatullah (2020), who stated that nomophobia is higher among men than women. The analysis results also differ from previous studies showing no gender differences in nomophobia (Syahputra & Erwinda, 2020; Fajri & Karyani, 2021). Overall, these differing results indicate that variations in nomophobia levels between men and women should be viewed more broadly than simply as a result of

gender itself. Different social norms and expectations place men and women in different positions regarding the use of communication media and emotional expression. This can influence differences in smartphone usage.

Although this study found a significant association between nomophobia and online gambling, there are several other factors considered influential in previous research but not controlled for in this study. Individual characteristics such as impulsivity (Tobias-Webb & Clark, 2015; Wirkus et al., 2024) and anxiety (Burtonton et al., 2000) are among the factors influencing online gambling behavior. Additionally, ease of access and user anonymity also impact the risks associated with online gambling (Dewi et al., 2024; Ghelfi et al., 2023). Other studies have revealed that factors such as the marketing penetration of online gambling apps and the reward systems they offer contribute to the occurrence of online gambling behavior (Weber & Silva, 2025). Future research could consider these influencing factors for a more comprehensive analysis.

Research examining the relationship between excessive smartphone use or smartphone addiction and online gambling is still very limited (Fransson et al., 2018; Kalkan & Bhat, 2020; Marimón Muñoz et al., 2022). More specifically, to the best of the researchers' knowledge, no studies have linked nomophobia and online gambling among college students. Therefore, the results of this study deepen previous research findings linking excessive smartphone use with online gambling.

The findings of this study have theoretical implications by reinforcing the understanding that nomophobia plays a role as a form of digital anxiety that can drive individuals toward problematic online behavior, in this case, online gambling. Practically, the results of this study can be used as a basis for developing preventive interventions, such as educational programs on healthy smartphone use and digital literacy among students.

This study has limitations that need to be considered. The relatively small sample size may limit the generalizability of the results to the entire student population. Furthermore, the focus on students as participants also limits the generalizability of the results to a broader population. This study also did not classify the types of online gambling platforms used by the subjects, leaving room for further exploration of more specific digital contexts.

Recommendations for future research include expanding the scope of participants beyond students and increasing the sample size to make the results more representative. Furthermore, researchers could map the types of online gambling platforms used or examine additional variables such as exposure to gambling advertisements as mediators or moderators of the relationship between variables. Additionally, a mixed-methods approach (qualitative and quantitative) could be used to explore the psychological motives behind the relationship between nomophobia and online gambling behavior.

Overall, this study underscores the importance of nomophobia, particularly the GUC dimension or comfort, as a risk factor for online gambling behavior among students. These findings expand theoretical insights into digital addiction and provide a practical foundation for developing more effective interventions to prevent online gambling behavior among college students. By acknowledging existing limitations and proposing directions for further research, it is hoped that the results of this study can serve as a strong foundation for the development of studies and practices in the fields of psychology and mental health among college students.

CONCLUSION AND RECOMMENDATION

The results of the study indicate a positive and significant relationship between nomophobia and online gambling behavior among college students. This suggests that students' dependence on the convenience offered by smartphones may increase the risk of engaging in online gambling behavior. Both male and female students did not indicate any differences in online gambling behavior. Given the high risk of online gambling behavior associated with the fear of being separated from smartphones, higher education institutions should consider implementing prevention programs that strengthen students' digital literacy and promote healthy and responsible smartphone use.

Specifically, such prevention programs could include social media campaigns highlighting the dangers of technology addiction and online gambling. Additionally, digital detox programs on campus could be implemented to periodically limit smartphone use with reflective guidance to reduce dependence on digital comfort, along with screen time management apps to monitor usage duration and restrict access to gambling apps or websites. Furthermore, mindfulness training, self-regulation, and self-control enhancement programs should be provided regularly to help students manage anxiety when not using smartphones and resist impulsive gambling urges.

Gender differences in nomophobia should be considered when designing intervention programs to ensure they are sensitive to the needs of both male and female students. Institutions can implement programs that are not only technical but also address students' emotional aspects. Activities such as counseling services, emotional management training, and providing anonymous digital platforms for venting can help students build healthier relationships with technology and themselves. Such interventions should consider gender-based differences in experiences to ensure that the responses provided are more targeted. The approaches from these programs are expected to reduce online gambling behavior triggered by nomophobia and support student well-being.

This study has several limitations that should be considered for future research. The researchers suggest expanding the scope of the study subjects beyond students to a broader population. Additionally, increasing the sample size is recommended to better represent the student population in Indonesia. Furthermore, a deeper analysis of the types of online gambling platforms used by the subjects is needed, as this could provide further insights into the relationship between nomophobia and online gambling behavior.

DECLARATIONS

Ethics approval and consent to participate

This study was conducted in accordance with ethical research standards. Prior to participation, all respondents were presented with an informed consent form on the first page of the online questionnaire (Google Form), and only those who agreed were allowed to proceed.

Consent for publication (Not applicable)

Availability of data and materials

The datasets generated and/or analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

Disa Aulia Debora was responsible for designing the study, collected and analyzed the data, and wrote the initial draft of the manuscript. Hariz Enggar Wijaya provided supervision, feedback on the methodology, and revised the manuscript critically for intellectual content. All authors have read and approved the final version of the manuscript.

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ADDITIONAL INFORMATION

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