

The Psychological Bridge to Exhaustion: Nomophobia Mediates the Link Between FoMO and Digital Fatigue in Digital Natives

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Abstract. The “always-on” culture of digital natives has accelerated the rise of digital fatigue. However, the underlying mechanisms transforming social anxiety into physical and mental exhaustion remain underexplored. Therefore, this study aimed to investigate the mediating role of nomophobia, namely the fear of being without a mobile phone, in the relationship between Fear of Missing Out (FoMO) and digital fatigue. A large-scale survey (N = 1,324) was carried out on Indonesian digital natives using mediation analysis. The results showed that nomophobia serves as a critical psychological bridge, accounting for a significant indirect effect in the FoMO-fatigue pipeline. The integration of Social Cognitive Theory and Cognitive Load Theory demonstrated that the compulsive drive for social connectedness systematically depletes cognitive and emotional resources. Therefore, digital well-being interventions must move beyond simple “screen time” limits to address the underlying nomophobic anxiety that drives exhaustion. This study provides a theoretical framework for developing targeted mindfulness-based interventions to mitigate the psychological consequences of hyper-connectivity.

Keywords: Digital fatigue, Digital natives, Fear of Missing Out (FoMO), Nomophobia

Jembatan Psikologis Kelelahan Digital: Nomophobia Memediasi Hubungan antara FoMO dan *Digital Fatigue* pada Generasi *Digital Native*

Abstrak. Meskipun konektivitas digital konstan adalah norma bagi generasi *digital native*, dampaknya terhadap kelelahan mental atau *digital fatigue* semakin mengkhawatirkan. Namun, mekanisme psikologis yang mengubah kecemasan sosial menjadi kelelahan fisik dan mental masih belum banyak dipahami. Studi ini menguji peran mediasi nomophobia dalam hubungan antara *Fear of Missing Out* (FoMO) dan *digital fatigue*. Melalui survei luas terhadap 1.324 partisipan di Indonesia (usia 13–30 tahun), analisis jalur (*path analysis*) mengungkapkan bahwa nomophobia berfungsi sebagai mediator parsial yang signifikan (*indirect effect* = .086). Temuan ini mengonfirmasi bahwa FoMO tidak hanya menyebabkan kelelahan secara langsung, tetapi juga secara tidak langsung melalui kecemasan patologis akan keterpisahan dari gawai. Dengan mengintegrasikan Teori Kognitif Sosial dan Teori Beban Kognitif, penelitian ini membuktikan bahwa kebutuhan akan keterhubungan sosial yang berlebihan secara sistematis menguras sumber daya emosional individu. Hasil ini menekankan bahwa intervensi “detoks digital” tradisional tidak akan efektif tanpa menangani akar kecemasan nomofobik. Kami menyarankan pergeseran ke arah program kesejahteraan digital berbasis *mindfulness* yang menargetkan ketergantungan psikologis pada aksesibilitas gawai.

Kata Kunci: *digital fatigue*, *digital native*, *Fear of Missing Out* (FoMO), nomophobia

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In the digital era, technology has fundamentally transformed human interaction, with significant effect on communication (Aisyah & Habibie, 2025), work (Kurniawan & Aruan, 2021), and learning processes (Putri, 2023; Rahmayanti et al., 2025). This technological dependence is especially evident among digital natives, defined as individuals born and raised during the rapid expansion of the internet and digital technologies (Alfia et al., 2020). Digital natives use smartphones and internet connectivity to facilitate activities such as learning, work, and social interaction (Azzahroh & Susilo, 2024; Hasmawati et al., 2020; Subroto, 2024; Supratman, 2018; Syaputra et al., 2023). Global statistics indicate that approximately 5.76 billion people, representing approximately 70% of the global population, use mobile phones (Kumar, 2025; Thompson, 2025). These individuals engage across an average of 6.8 platforms per month (Rao, 2024), particularly in developing digital societies such as Indonesia, where mobile technologies have rapidly become embedded in everyday life. The Internet Service Providers Association (APJII) in Indonesia reports that smartphones are the primary device for internet access (83.39%), with Generation Z (ages 13 - 28) comprising 25.54% of users (APJII, 2025). The average daily device usage ranges from 4-6 hours for 35.75% of users (APJII, 2025; Kumar, 2025). These patterns reflect the highly mobile-centric nature of digital engagement in Indonesia, where smartphones

serve as the primary gateway to social, academic, and occupational activities.

From a psychological perspective, the patterns of intensive digital engagement raise important questions about how continuous connectivity affects individuals cognitive and emotional resources. Based on Cognitive Load Theory (CLT), sustained exposure to information-rich digital environments can overload limited cognitive capacity, leading to mental exhaustion and reduced self-regulation (Sweller, 2024). In parallel, Social Cognitive Theory (SCT) emphasizes that individuals technology-related behaviors are shaped by reciprocal interactions between personal factors, environmental cues, and behavioral reinforcement (Bandura, 2018). Within digitally saturated environments, constant social comparison and perceived expectations to remain connected may intensify psychological strain. Collectively, these theoretical perspectives suggest that excessive digital engagement among digital natives may culminate in digital fatigue, a multidimensional condition characterized by cognitive, emotional, and physical exhaustion arising from prolonged screen exposure (Febreza & Junaidi, 2022; Munawaroh, 2021; Murugan & M, 2024; Tutar & Mutlu, 2024). Multiple studies have demonstrated that excessive screen exposure and internet use, exceeding four hours per day, can precipitate digital fatigue and related health issues (Fajri & Karyani, 2021; Kaewpradit et al., 2025; Priya & Subramaniyam,

2022). Individuals with digital fatigue often struggle to disconnect from digital devices, even when tired or bored. Empirical evidence consistently indicates that digital natives are particularly vulnerable due to the reliance on smartphones and continuous connectivity (Asiyah et al, 2024; Febreza & Junaidi, 2022; Romero-Rodríguez et al, 2023). A preliminary online survey of 32 participants aged 13-24 years showed that 81.3% reported moderate to high levels of digital fatigue. These results provide initial empirical evidence that digital fatigue is prevalent and may represent a significant welfare concern among digital natives. However, proper understanding requires examining the underlying psychological drivers that compel individuals to remain continuously connected despite experiencing exhaustion.

Within this theoretical frame, Fear of Missing Out (FoMO) represents a salient social-cognitive operator. FoMO refers to a pervasive concern that others are experiencing rewarding events in one's absence, accompanied by a persistent desire to remain connected to the activities of other people (Mazlum & Atalay, 2022). This study emphasizes the role of FoMO in the context of online activities, particularly the desire for connection, acceptance, and validation in digital environments (Sette et al, 2020). In line with SCT, FoMO can be understood as a socially driven cognitive-emotional state shaped by perceived social norms and environmental cues in digital

platforms. Elevated FoMO levels are prevalent among social media users (Maknun et al, 2023) and are positively associated with social media fatigue (Logan et al., 2018; Nurissam & Wulandari, 2023). Despite the relevance, most existing studies have focused on bivariate relationships or narrowly defined fatigue constructs, such as social media fatigue, offering limited insight into how FoMO translates into broader forms of exhaustion, including digital fatigue (Kaur et al, 2021; Qin et al, 2024). Moreover, no previous study has directly examined a mediation model in which FoMO predicts digital fatigue through nomophobia. This proposed pathway is theoretically grounded in a device-dependent psychological mechanism, drawing on the integration of SCT, which emphasizes socially driven motivations for continuous connectedness, and CLT, explaining how sustained vigilance and recurrent digital interruptions contribute to cognitive overload. Existing studies have primarily focused on bivariate associations or descriptive patterns. For example, Zulmi et al (2025) reported moderate levels of nomophobia among students experiencing digital fatigue. However, the study did not test the mediating function within a structural model.

To address the gap, this study proposes nomophobia as a critical psychological mechanism linking FoMO and digital fatigue. Nomophobia refers to the fear, discomfort, or anxiety experienced when individuals are separated from smartphones, unable to access

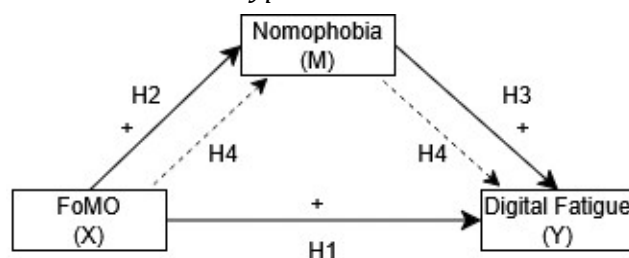
the internet, or face battery depletion (Rahmah et al., 2024; Yildirim & Correia, 2015b). Compared to general indicators of technology use intensity or broad emotional distress, nomophobia captures device-specific anxiety that is directly rooted in persistent connectivity demands, rendering it theoretically well suited to function as a mediating bridge between FoMO and digital fatigue. Empirical studies have shown that higher levels of FoMO are associated with increased smartphone dependence and nomophobia (El-Ashry et al., 2024). Furthermore, Bragazzi & Del Puente (2014) conceptualized nomophobia as a

serious disorder and advocated for the inclusion in the DSM-5.

Based on the discussion above, this study aimed to extend the existing literature by integrating FoMO, nomophobia, and digital fatigue within a single mediation framework grounded in SCT and CLT. By focusing on Indonesian digital natives, a population that has received limited empirical attention in studies examining the interplay among these constructs, the results offer a novel contribution beyond previous bivariate and fatigue-specific investigations. Based on this conceptual framework, this study proposes the hypotheses:

Figure 1

Mediation Model Hypothesis



H1: FoMO (X) has a positive and significant influence on digital fatigue (Y).

H2: FoMO (X) has a positive and significant effect on nomophobia (M).

H3: Nomophobia (M) has a positive and significant effect on digital fatigue (Y).

H4: Nomophobia (M) significantly mediates the effect of FoMO (X) on digital fatigue (Y).

Method

Study design

This study used a cross-sectional survey design to examine the relationship between

FoMO (independent variable) and digital fatigue (dependent variable), with nomophobia serving as a mediating variable. The analysis focuses on the direct effect of FoMO on digital fatigue, the influence of FoMO on nomophobia, the impact of nomophobia on digital fatigue, and the extent to which nomophobia mediates the relationship between FoMO and digital fatigue. A quantitative approach with a survey design was employed, aligning with the use of inferential statistical analysis to generalize

results from the sample to the broader population (Sugiyono, 2020).

Participants

The population of this study consisted of digital natives in Indonesia. The sample was obtained using a purposive sampling technique, with the inclusion criteria (a) Indonesian citizens residing in Indonesia, (b) aged 13–30 years, and (c) actively using smartphones to access the internet for a minimum of four hours per day. This duration was selected because nomophobia is characterized by high-frequency smartphone use, typically involving four hours or more of daily usage (Jacquez et al., 2021). Participants were recruited online and represented various regions across

Indonesia, allowing the sample to reflect the geographic diversity of the Indonesian digital-native population. The largest proportion of participants originated from West Kalimantan (16.2%), with the remaining participants distributed across other regions of Indonesia. A total of 1,473 questionnaires were distributed online. After data screening, 149 responses were excluded due to response quality issues, specifically straight-lining behavior, which indicates insufficient response effort, and no incomplete questionnaires were retained for analysis. Consequently, data from 1,324 participants with complete and valid responses were included in the final analysis. Table 1 shows the demographic data of the participants.

Table 1

Participants Characteristics

Category	<i>n</i>	%
Gender		
Male	293	22.1%
Female	1031	77.9%
Age		
13 – 15 years old	32	2.5%
16 – 18 years old	358	27%
19 – 21 years old	566	42.8%
22 – 24 years old	218	16.5%
25 – 27 years old	104	7.9%
28 – 30 years old	46	3.4%
Internet usage duration		
4 – 5 hours	515	38.9%
6 – 8 hours	493	37.2%
≥ 9 hours	316	23.9%
Status		
Student	129	9.7%
University student	1006	76%
Employees	102	7.7%
Entrepreneurs	30	2.3%
Educator	48	3.6%
Others	9	0.7%

Note. *N* = 1,324

Table 1 shows that female participants comprised 55.8% of the sample. The majority were aged 19-21 years (42.8%; $n = 566$), and students represented 76% ($n = 1006$) of the participants. Over half (61.1%) reported daily internet use of six hours or more. These characteristics suggest the sample is representative of digital natives with intensive daily digital engagement.

Procedure

Data were collected using an online self-administered questionnaire distributed through digital platforms and social media channels. This study was conducted in accordance with the ethical standards of the Faculty of Psychology and Health, Universitas Negeri Padang, Indonesia, and complied with the principles of the Declaration of Helsinki as well as relevant national ethical guidelines for investigations involving human participants. It was also classified as minimal risk, as no sensitive personally identifiable information was collected and all data were recorded anonymously. Participation was entirely voluntary, and informed consent was obtained from all participants before completing the questionnaire. The informed consent form, presented at the beginning of the survey, explained the study purpose, ensured confidentiality, and emphasized participants' right to withdraw at any time without consequence. Responses to all scales were recorded using a 5-point Likert scale (1 =

strongly disagree to 5 = strongly agree), with higher scores indicating higher levels of each construct.

Measures

FoMO was measured using the Online Fear of Missing Out (ON-FoMO) developed by Sette et al. (2020), which was then adapted into Indonesian for use in this study. ON-FoMO conceptualizes FoMO as a multidimensional construct comprising four dimensions, including need to belong, need for popularity, anxiety, and addictive tendencies toward social media use. An example item is "*Ketika saya melihat di media sosial bahwa seorang teman berada di tempat yang juga ingin saya kunjungi, saya merasa sedih.*" Although ON-FoMO is theoretically multidimensional, total scale scores were used in the mediation analysis. This decision was theoretically justified by the conceptualization of FoMO as a unified motivational and affective tendency driving persistent online connectivity. From an analytical perspective, the use of total scores also facilitated clearer interpretation, greater parsimony, and consistency in mediation modeling, which is consistent with previous empirical studies employing ON-FoMO as a global construct.

ON-FoMO was adapted using a standardized psychological instrument adaptation procedure comprising five stages, including forward translation, synthesis, back translation, expert committee review, and pre-

testing (Beaton et al., 2000). Forward and back translations were conducted by a certified professional translation agency to ensure linguistic accuracy. During the synthesis stage, the translated Indonesian version was systematically compared to the original English instrument by the academic supervisor to ensure semantic consistency and conceptual equivalence. An expert committee review was subsequently conducted to evaluate content relevance, clarity, and cultural appropriateness. The panel consisted of three psychology lecturers, with expertise in social psychology, cyberpsychology, as well as psychological measurement and methodology. This multidisciplinary composition ensured that both theoretical alignment and psychometric rigor were adequately addressed. Pre-testing was conducted through an online survey administered to individuals aged 13–30 years, representing the target population of Indonesian digital natives. Feedback from this stage was used to refine item wording and improve readability. Construct validity was evaluated using confirmatory factor analysis (CFA), which resulted in 15 valid items, with a Kaiser-Meyer-Olkin (KMO) value of .90 and factor loadings ranging from .61 to .86. The Indonesian version demonstrated high internal consistency, with Cronbach's $\alpha = .89$.

Nomophobia was measured using the Indonesian version of the 10-item Nomophobia Questionnaire (NMPQ-10) (Warsah et al., 2023), adapted from the original NMP-Q

developed by Yildirim & Correia (2015a). The NMPQ-10 covers the dimensions of not being able to communicate, losing connectedness, not being able to access information, and giving up convenience. An example item is "*Jika saya tidak membawa ponsel pintar saya, saya merasa cemas karena saya tidak dapat berkomunikasi dengan segera dengan keluarga dan/atau teman-teman saya.*" In the validation study by Warsah et al. (2023), the NMPQ-10 demonstrated excellent internal consistency (CR = .932; Cronbach's $\alpha = .97$), with CFA factor loadings ranging from .76 to .94.

The digital fatigue scale adapts the DFS developed by Tutar & Mutlu (2024) because no study has adapted the scale into Indonesian. The original version consists of 26 items comprising four dimensions, including digital addiction, psychological fatigue, physical and mental fatigue, as well as psychosomatic problems. An example item is "*Informasi yang berlebihan di Internet membuat saya lelah secara mental.*" The adaptation process followed the same standardized procedures applied to the ON-FoMO scale, including expert review and pre-testing to ensure semantic equivalence, cultural relevance, and readability for Indonesian digital natives. The expert committee consisted of the same three psychology lecturers with relevant expertise, ensuring consistency in content evaluation standards across instruments. CFA results supported the construct validity of the Indonesian DFS, yielding 15 valid items with a

KMO value of .90 and factor loadings ranging from .54 to .84. The scale demonstrated strong internal reliability (Cronbach's $\alpha = .89$). Although DFS is conceptually multidimensional, total scores were used in the present analysis to represent overall digital fatigue severity. This approach is consistent with the theoretical framing of digital fatigue as a cumulative psychophysiological condition and supports interpretative clarity and analytical efficiency in mediation testing.

Data analysis

All data analysis was performed using IBM SPSS Statistics Version 25. Mediation hypothesis testing used the PROCESS macro version 4.2 developed by Andrew F. Hayes (Hayes, 2015, 2018). The collected data were subjected to data screening, which comprised identifying outliers, followed by preliminary analysis and assumption testing, including descriptive statistics for all variables. The next stage was the main inferential analysis, which tested the mediation hypothesis. The significance of the mediation effect (indirect effect) was tested using a bootstrapping procedure with 5,000 samples, where the effect

was considered significant when the bias-corrected 95% confidence interval did not include zero. This approach was selected because it is more robust than traditional tests and does not require the assumption of a normal distribution for indirect effects.

Results

This study empirically examined the effect of FoMO on digital fatigue, with nomophobia as a mediating variable, among digital natives in Indonesia. The results indicate that nomophobia partially mediates the relationship between FoMO and digital fatigue in the population.

Descriptive Statistics of Study Variables

Descriptive statistical analysis shows that FoMO, Nomophobia, and digital fatigue scores had an average score of 37.51 ($SD = 10.9$), 35.85 ($SD = 7.97$), and 42.19 ($SD = 10.86$), respectively. These average scores indicate that the participants levels of FoMO, nomophobia, and digital fatigue tend to be high. Many participants experience fatigue due to various activities on digital screens and excessive dependence on smartphones.

Table 2*Descriptive Analysis of Variables and Bivariate Correlation*

	Variables	Total items	Min.	Max.	M	SD	1	2	3
1	FoMO	15	15	75	37.51	10.903	1		
2	Nomophobia	10	12	50	35.85	7.974	.277	1	
3	Digital Fatigue	15	15	75	42.19	10.864	.409	.402	1

Distribution of variable scores

Table 3 shows that most participants had moderate levels of FoMO, digital fatigue, and nomophobia, followed by high levels. Based on the applied statistical categorization, these results indicate that digital fatigue and mobile phone-related anxiety are relatively prevalent among Indonesian digital natives, although extreme levels remain limited. To facilitate

interpretation of the descriptive distribution, participants scores on FoMO, nomophobia, and digital fatigue were categorized into low, moderate, and high levels using a statistical cut-off approach based on the mean and standard deviation. Scores below, within, and above one standard deviation from the mean were classified as low (score $< M - 1 SD$), moderate ($M - 1 SD \leq \text{score} \leq M + 1 SD$), and high (score $> M + 1 SD$), respectively.

Table 3*Distribution of Variable Scores*

Category	FoMO		Digital Fatigue		Nomophobia	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
High	225	17%	214	16.2%	259	19.6%
Moderate	891	67.3%	935	70.6%	874	66%
Low	208	15.7%	175	13.2%	191	14.4%

Assumption testing

The assumption test results showed that the data meet the requirements for regression analysis. The normality test using Kolmogorov-Smirnov indicates that the residuals of all variables are normally distributed, as demonstrated by a *p*-value of .20, greater than the significance level ($p > .05$). The homoscedasticity test also produced satisfactory results, with the scatterplot showing no systematic pattern in the residual

distribution, indicating constant variance across the predicted values. In addition, the multicollinearity test showed a Variance Inflation Factor (VIF) value of 1.083 ($VIF < 10$), indicating no significant multicollinearity among the independent variables.

Bivariate correlation analysis

As presented in Table 2, Pearson correlation analysis showed a significant positive relationship between FoMO and nomophobia ($r = .27, p < .01$), indicating that

higher levels of FoMO are associated with greater nomophobia. Furthermore, nomophobia showed a significant positive relationship with digital fatigue ($r = .40, p < .01$), suggesting that individuals who experience higher nomophobia tend to report higher levels of digital fatigue. FoMO was significantly and positively correlated with digital fatigue ($r = .40, p < .01$), implying that increased concerns about missing out are associated with greater experiences of digital fatigue. Overall, these

correlations indicate that FoMO, nomophobia, and digital fatigue are moderately interrelated constructs, providing preliminary support for the proposed mediation model tested.

Mediation analysis

To test the mediation hypothesis, mediation analysis was conducted using the PROCESS macro Model 4. The results of the mediation analysis are presented in Table 4 and illustrated in Figure 2.

Table 4

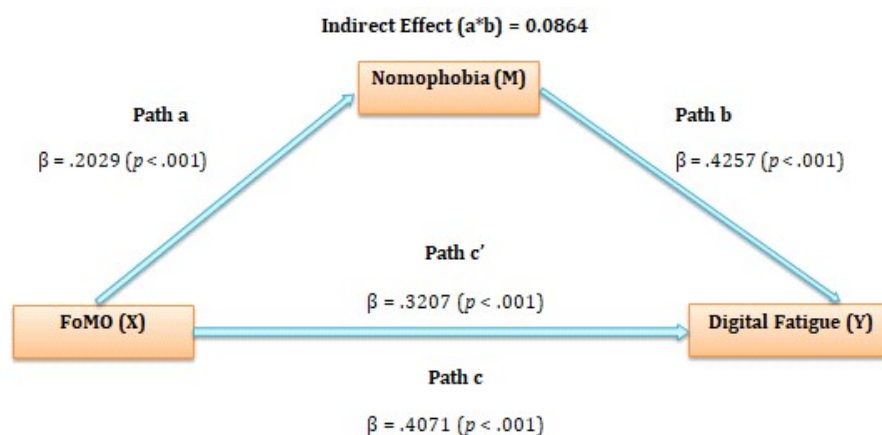
Path Analysis Results for the Mediation Model

Model	β	SE	<i>t</i>	<i>p</i> -value	LLCI	ULCI
Path a: FM → NMP	.2029	.0193	10.5010	< .001	.1650	.2409
Path b: NMP → DF	.4257	.0336	12.6595	< .001	.3598	.4917
Path c: FM → DF (Total effect)	.4071	.0250	16.2758	< .001	.3581	.4562
Path c': FM → DF (Direct effect)	.3207	.0246	13.0391	< .001	.2725	.3690
Indirect Effect (a*b)	Effect	BootSE		BootLLCI	BootULCI	
FM → NMP → DF	.0864	.0107		.0662	.1081	

Note. β = standardized coefficient; LLCI = lower limit confidence interval; ULCI = upper limit confidence interval. Bootstrapped confidence intervals are based on 5,000 resamples. FM = FoMO; NMP = nomophobia; DF = digital fatigue.

Figure 2

Mediation Model



Path a shows that FoMO significantly and positively predicts nomophobia (path a), with a regression coefficient of $\hat{a} = .2029$ ($p < .001$) and $R^2 = .077$. This indicates that the higher the level of FoMO experienced by participants, the higher the level of nomophobia, but the effect is relatively weak. Therefore, FoMO is a significant predictor, but not a very strong or sole factor in explaining the emergence of nomophobia. Path b showed that Nomophobia significantly and positively predicted digital fatigue, with $\hat{a} = .4257$ ($p < .001$). This value indicates that nomophobia has a strong tendency to predict digital fatigue.

The direct effect of FoMO on digital fatigue (path c') was also significantly positive, with a value of $\hat{a} = .3207$ ($p < .001$). This result shows that FoMO can directly cause digital fatigue. The total effect had a regression coefficient of $\hat{a} = .4071$ ($p < .001$), suggesting FoMO has a fairly solid influence on digital fatigue.

The mediating effect tested using bootstrapping yielded an indirect effect ($a*b$) value of .0864, with a 95% bias-corrected confidence interval (CI) that did not include zero (BootSE = .0107, 95% CI [.0662, .1081]). Since both the direct effect (path c') and indirect effect are significant, it can be concluded that nomophobia acts as a partial mediator in the influence of FoMO on digital fatigue. In other words, FoMO affects digital fatigue both directly and indirectly through an increase in nomophobia levels. Therefore, H1, H2, H3, and

H4 in this study can be accepted. The results prove that Nomophobia significantly but partially mediates the effect of FoMO on digital fatigue.

Discussion

This study aims to examine the mediating role of nomophobia in the influence of FoMO on digital fatigue among digital natives. The statistical analysis results support the proposed hypothesis, stating that nomophobia acts as a partial mediator in the role of FoMO in predicting digital fatigue. Both FoMO and nomophobia can predict digital fatigue, with a significant positive influence. This implies that the higher the level of FoMO and nomophobia, the greater the level of digital fatigue experienced by individuals. The results show that FoMO has two pathways in predicting digital fatigue. First, there is a direct pathway where FoMO predicts digital fatigue. Second, and more importantly, FoMO indirectly contributes to digital fatigue by increasing anxiety related to separation from mobile devices (nomophobia), which subsequently intensifies digital fatigue.

The first hypothesis (H1), which proposed a positive and significant influence between FoMO and digital fatigue, was accepted. This proves that FoMO can directly affect digital fatigue without an intermediary. A significant and moderate correlation between FoMO and social media fatigue has been found among young adults in previous studies, with men

showing a higher tendency toward fear than women (Ardelia et al., 2024). Furthermore, FoMO has been shown to have a negative impact on social media fatigue and psychological well-being (Logan et al., 2018; Savitri, 2019). This mechanism involves FoMO stimulating narcissistic behavior and social comparison processes, with social comparison being the main pathway leading to fatigue (Jabeen et al., 2023). FoMO drives individuals to compulsively engage with social media as a strategy to alleviate social anxiety and fulfill the need for relatedness.

The second hypothesis (H2), which proposed a positive and significant effect of FoMO on nomophobia, was also accepted. However, the relatively weak influence indicates that FoMO is not the main trigger. Previous studies have shown that nomophobia is also influenced by factors such as emotional dysregulation and habitual smartphone use. Safaria et al. (2024) stated that nomophobia is a multifaceted condition shaped by both affective and behavioral factors. However, the association between FoMO and nomophobia is consistent with previous empirical studies, which identified FoMO as a significant psychological predictor of nomophobia (Hamutoglu et al., 2018; Ho^og^or & Ho^og^or, 2019; Ramadhan & Yusra, 2023; Rizal & Widianoro, 2022). From an SCT perspective, FoMO reflects anxiety related to perceived threats to social connectedness, which motivates individuals to rely excessively on smartphones as a means of maintaining social resources (Bandura, 2018;

Schunk & DiBenedetto, 2020). Over time, this reliance may manifest as nomophobia, characterized by anxious dependence on mobile devices (Bragazzi & Del Puente, 2014). The compulsive behaviors associated with nomophobia, such as constant checking, represent energy-intensive coping strategies that may subsequently contribute to heightened digital fatigue through sustained cognitive and emotional strain.

The acceptance of the third hypothesis (H3) confirms that nomophobia can significantly and positively predict digital fatigue. These results emphasize the pathological impact of nomophobia, which has been proposed as a modern phobia with clear clinical symptoms (Bragazzi & Del Puente, 2014). Although Khairani et al. (2022) showed the high prevalence of nomophobia among Generation Z in Indonesia, this study explains one of the pathological consequences, namely digital fatigue. The significant positive influence of nomophobia on digital fatigue can be convincingly explained through CLT (Lang, 2024; Sweller, 2024). This theory states that human working memory has a very limited capacity (Sweller et al., 2019). Nomophobia behaviors among digital natives, such as constant vigilance for notifications, multitasking between platforms, and fragmented information consumption, inherently create very high extraneous cognitive load (Elhai et al., 2021; Tian et al., 2025). This load does not contribute to

meaningful information processing, but rather only depletes limited working memory resources (Romero-Rodríguez et al., 2023). Chronic exposure to cognitive overload, triggered by nomophobia behavior, ultimately leads to depletion of cognitive and emotional resources, manifesting as digital fatigue (Liu & He, 2021; Supriyadi et al., 2025).

The fourth hypothesis (H4), stating that nomophobia significantly mediates the effect of FoMO on digital fatigue, was also accepted. The significance of the indirect effect is central to the contribution of this study, which fills a previously identified gap. Previous studies have shown a direct relationship between FoMO and social media fatigue without articulating the underlying behavioral processes (Yao et al., 2025). The mediation model in this study is consistent with Xie et al. (2024), who found that FoMO is positively related to social media fatigue, while social overload mediates the relationship between FoMO and social media fatigue. These suggest FoMO is associated with higher levels of smartphone dependence, which in turn are related to greater digital fatigue. Therefore, longitudinal designs are needed to establish causal relationships.

In daily life, the mediation mechanism can be observed in common behaviors among digital natives, such as repeatedly checking smartphones upon waking, feeling anxious when notifications are delayed, or experiencing discomfort during periods of disconnection. This pattern is particularly relevant in the

context of the sample, which consisted predominantly of students who rely heavily on smartphones and continuous internet access to meet academic and daily communication demands. A comparative study of students in Pakistan and Turkey also reported that 77% of users in the 18-24 age group showed symptoms of nomophobia, with lower prevalence in older age groups (Ozdemir et al., 2018). Participants in this study also reported various occupations, including journalists who are highly dependent on digital devices, such as smartphones and internet access, in the work. Furthermore, Ahmed & Yousaf (2023) reported a high prevalence of nomophobia among journalists in Pakistan. The results showed a significant relationship between smartphone use and nomophobia, with no difference between genders. Theoretically, this study makes a significant contribution by integrating two strong theoretical frameworks, namely SCT and CLT, to provide a comprehensive multi-level explanation of psychological phenomena in the digital age. This integration demonstrates how social interaction and personal cognition processes (SCT) can trigger behavioral patterns, which in turn directly impact human cognitive architecture and information processing capacity (CLT).

The results contribute novel insights to the literature by empirically demonstrating the mediating role of nomophobia in the relationship between FoMO and digital fatigue among Indonesian digital natives. The

population has received limited empirical attention in previous studies on the interplay between FoMO, nomophobia, and digital fatigue, which have predominantly relied on university student populations. In contrast to previous investigations that primarily examined the direct effects of FoMO on problematic smartphone use or mental fatigue, this study integrates FoMO, nomophobia, and digital fatigue within a single mediation model, offering a more comprehensive explanation of how social anxiety related to online connectedness translates into cognitive and emotional exhaustion. Furthermore, this study is among the first to apply the Indonesian version of the DFS in an empirical mediation analysis, thereby extending the cross-cultural validity of the construct.

The strength of this study is grounded in the large sample size ($N = 1,324$) and the representativeness of digital natives in Indonesia, as well as the use of valid and reliable instruments, including the Indonesian version of the NMP-Q. This increases the reliability and generalizability of the results. On the other hand, the limitations include reliance on self-reported data, which may introduce subjective bias. In addition, the majority of participants were female and students, suggesting the sample distribution may be unbalanced.

Conclusions

In conclusion, this study demonstrates that FoMO, nomophobia, and digital fatigue form an

interconnected psychological process among digital natives in Indonesia. FoMO contributes to digital fatigue not only directly but also by fostering nomophobia, which reflects anxiety related to separation from smartphones and intensifies maladaptive patterns of technology engagement. Through this process, persistent concerns about social connectedness gradually translate into sustained cognitive and emotional strain that ultimately manifests as digital fatigue. By clarifying the mediating role of nomophobia, this study advances understanding of how social connectivity pressures in digitally saturated environments evolve into broader psychological exhaustion. Overall, the results position nomophobia as a critical psychological bridge linking excessive online engagement with the experience of digital fatigue among digital natives.

Suggestion

The results underscore the crucial mediating role of nomophobia in explaining how FoMO contributes to digital fatigue among digital natives, with several theoretical and practical implications. From a theoretical perspective, this study extends the understanding of digital-age psychological mechanisms by integrating SCT and CLT. This integration provides a comprehensive explanation of how social connectivity anxiety (FoMO) can evolve into cognitive and emotional exhaustion (digital fatigue) through nomophobia-driven behavioral dependence.

Future studies could explore additional mediating variables such as digital self-regulation, mindfulness, or technology-related coping strategies to enrich the model and examine cross-cultural validity.

From a practical perspective, these results underscore the importance of developing structured digital well-being interventions for youth and students, who are particularly vulnerable to FoMO and nomophobia. At the individual level, interventions may include brief mindfulness practices aimed at increasing awareness of compulsive smartphone use, scheduled digital breaks, and intentional reduction of non-essential notifications to minimize constant connectivity demands. Consistent with experimental evidence by Aini et al. (2021), psychoeducational and counseling programs for adolescents and young adults can integrate mindfulness training and digital detox strategies as practical tools for managing anxiety related to smartphone separation and reducing the risk of digital fatigue. At the institutional level, universities and educational institutions can implement digital literacy workshops, awareness campaigns on healthy technology use, and structured screen time management programs. These initiatives may involve guided reflection on usage patterns, goal setting for balanced digital engagement, and the promotion of offline activities to support psychological well-being in digitally saturated environments.

Given that most participants in this study were female students, future investigations should target a more balanced and diverse sample and explore cross-cultural differences to improve generalization. Other methods, such as longitudinal and experimental studies, should also be used to explore the psychological impact of excessive digital media use as well as the effectiveness of intervention. In addition, other mediating mechanisms that may be involved in digital fatigue could also be used.

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