Fear of Missing Out as a Predictor of Digital Fatigue: A Correlational Study Among Indonesian Youth

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ABSTRACT
The digitalization era has reshaped how individuals communicate and interact, yet it has also intensified psychological strains such as digital fatigue. *Fear of Missing Out* (FoMO); the anxiety of being excluded from rewarding social experiences has been identified as a potential psychosocial mechanism underlying this phenomenon. This study examined the predictive role of FoMO on digital fatigue among Indonesian digital natives using a correlational quantitative design. A total of 1,330 participants aged 13–30 years were recruited through stratified convenience sampling across western, central, and eastern Indonesia. Data were collected using the modified and culturally adapted Online Fear of Missing Out Inventory (15 items) and Digital Fatigue Scale (14 items), both validated through confirmatory factor analysis and showing high reliability ($\alpha = 0.91–0.92$). Regression analysis indicated that FoMO significantly predicted digital fatigue ($\beta = 0.582$, SE = 0.021, $p < 0.001$), explaining 33.8% of the variance. These findings suggest that FoMO functions as a central psychological mechanism linking unmet social relatedness needs with cognitive overload and emotional exhaustion. The study extends digital psychology by integrating motivational and cognitive frameworks within a collectivistic cultural context and provides empirical support for digital wellness interventions emphasizing self-regulation, emotional awareness, and culturally adaptive literacy programs among Indonesian youth.

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1. INTRODUCTION

In the digital era, the widespread integration of internet

technologies and smart devices has profoundly reshaped human communication, learning, social interaction, and work patterns worldwide. As of early 2025, global internet users reached 5.56 billion (67.9% of the world population), while social media penetration stood at 63.9% with 5.24 billion active users [1], [2]. These global trends reflect not only the accelerating pace of digitalization but also the deepening integration of social media into everyday life across societies. Within this global landscape, Southeast Asia stands out as one of the most rapidly expanding digital regions, characterized by high mobile connectivity and intense social media engagement [1], [3]. Among these nations, Indonesia represents a particularly significant case: with over 229 million internet users (80.66% of the national population), the country ranks among the world's largest online populations [4] The highest digital participation is concentrated among individuals aged 18–34 years, reflecting a generation of "hyperconnected" digital natives whose daily lives are deeply intertwined with technology. This socio-demographic profile positions Indonesia as a critical context for examining the psychological implications of continuous digital engagement [1].

The digitalization phenomenon not only improves communication efficiency, digital literacy, and information access but also creates novel psychological challenges, including sleep disruption, chronic stress, emotion-regulation difficulties, reduced productivity, technostress, and digital fatigue [5], [6], [7], [8], [9]. Although the term digital fatigue has gained increasing currency, it is important to distinguish it from related constructs such as technostress and social media fatigue. Technostress denotes psychological stress arising from demands associated with technology use, including complexity burdens, constant interruptions, and adaptation pressures [10]. Social media fatigue or social media burnout more specifically refers to emotional exhaustion resulting from social media use [9], [11]. In contrast, digital fatigue in this study encompasses a broader spectrum of cognitive, emotional, and physical exhaustion arising from sustained exposure to a variety of digital devices and cross-platform content [12].

The digital fatigue phenomenon became markedly salient during the COVID-19 pandemic and has since become endemic, particularly among Indonesian Generation Z and millennial cohorts

who spend more than six hours online daily [1], [13], [14], [15], [16], [17]. Digital fatigue has been linked to impaired concentration, emotional exhaustion, sleep disturbances, decreased productivity, and symptoms of depression and anxiety [14], [17], [18], [19]. Contributory factors include digital multitasking, information overload, pressure to respond rapidly, constant notifications, rapidly changing online content trends, and social pressure to remain connected and monitor others' activities in real time [11], [20]. Such social pressures not only extend the duration of digital exposure but also reinforce compulsive internal drives for digital engagement [6].

One of the key drivers of compulsive digital engagement is the phenomenon of Fear of Missing Out (FoMO). FoMO is defined as the affective and cognitive anxiety arising from the apprehension of being excluded from valuable social experiences enjoyed by others [21], [22], [23], [24]. Individuals experiencing FoMO tend to engage in repetitive checking behaviors, such as monitoring notifications, refreshing social media feeds, or updating online statuses to reduce uncertainty and maintain a sense of social inclusion [7], [23], [25]. Over time, these compensatory behaviors can shift from adaptive social participation to habitual, anxiety-driven digital routines that reinforce dependency on constant connectivity [6], [24], [26], [27]. Empirical studies have shown that FoMO is associated with problematic smartphone use, social media addiction, and emotional exhaustion, underscoring its role as a psychological mechanism that prolongs online time, increases information exposure, and inhibits individuals' capacity to disengage from digital devices, thereby exacerbating the risk of digital exhaustion [6], [24], [26], [27].

The relationship between FoMO and digital fatigue can be explained through three principal theoretical frameworks. First, Self-Determination Theory (SDT) emphasizes that the needs for autonomy, competence, and relatedness constitute the basis of psychological well-being [28]. When the need for relatedness is unmet, individuals may compensate by increasing digital engagement, which can precipitate emotional exhaustion [26], [29], [30]. Second, Cognitive Load Theory (CLT) posits that continuous exposure to digital information can produce cognitive overload that impairs information processing and triggers mental fatigue [31]. Third, the Transactional Model of Stress and Coping (TMSC) provides a stress–appraisal perspective, conceptualizing

FoMO as a recurrent psychosocial stressor that triggers maladaptive coping strategies such as compulsive checking and avoidance [32], [33]. Under this model, digital fatigue emerges when the perceived social threat of "missing out" repeatedly exceeds individuals' emotional and cognitive coping capacities. The integration of SDT, CLT, and TMSC offers a comprehensive theoretical account of how motivational deficits, cognitive overload, and stress–coping processes interact to produce digital fatigue among hyperconnected youth in the digital age [9], [26], [32], [34].

Cross-cultural studies consistently report positive correlations between FoMO and social media fatigue, technostress, and digital burnout [9], [26], [27]. A meta-analysis found that FoMO mediates the relationship between information overload and digital fatigue, with trait anxiety functioning as a significant moderator [35]. Consistent evidence has been observed across different cultural contexts, with studies in Western populations reporting similar findings [7], [25] and research in Indonesian and Malaysian samples demonstrating comparable trends [11], [36]. However, the majority of existing studies concentrate on social media platforms with student samples, limiting the generalizability to the broader young population in Indonesia. This gap leaves a need for research on digital fatigue that is more generalizable and not confined to particular platforms.

Indonesia provides a distinctive context for examining the FoMO–digital fatigue relationship because of its unique social, cultural, and technological confluence [37]. The country's collectivistic culture emphasizes social ties and expectations of participation in social networks, which may amplify the intensity of FoMO in the digital social discourse [38], [39] . In addition, smartphone penetration and social media application use are highly prevalent among young people, with average screen time exceeding six hours per day [4]. This configuration has created a hyperconnected youth culture in which digital social pressures are highly salient [5], [6].

Despite the growing body of FoMO and digital fatigue research, the literature exhibits three primary limitations: (1) Existing studies have predominantly employed correlational or cross-sectional designs, which, while useful for identifying associations, provide limited insight into the underlying

psychological mechanisms that link FoMO to digital fatigue; (2) Much of the current evidence is derived from narrowly defined samples (typically university students) whose digital behaviors may not fully represent the broader digital-native population; and (3) Insufficient integration of Self-Determination Theory (SDT), Cognitive Load Theory (CLT), and the Transactional Model of Stress and Coping (TMSC) to explain the underlying psychological mechanisms. Therefore, this study aims to address these gaps by testing the role of FoMO as a predictor of digital fatigue among Indonesian youth using a more comprehensive conceptual and theoretical approach.

Based on the theoretical framework described above, this study seeks to answer the central question: To what extent does FoMO positively predict digital fatigue among Indonesian youth? The proposed hypothesis is H1: Higher levels of FoMO are associated with greater levels of digital fatigue among Indonesian youth. Additionally, this study is expected to produce several contributions. Theoretically, this study extends cyberpsychology models by integrating SDT, CLT, and TMSC to provide a multidimensional explanation of the FoMO – digital fatigue mechanism within a non-Western, collectivistic cultural context. Empirically, it contributes cross-cultural evidence from a demographically diverse youth population, enhancing understanding of how motivational, cognitive, and stress-coping factors interact in shaping digital well-being. Empirically, the study provides cross-cultural evidence from a demographically diverse youth sample, thereby enriching understanding of how social and cultural factors influence digital well-being. Practically, the findings are intended to inform digital mental health strategies and evidence-based interventions aimed at promoting healthier technology use and resilience against digital fatigue among Indonesia's hyperconnected generations.

2. METHOD

2.1 Participant characteristic and research design

This study employed a quantitative approach with a correlational survey design to examine the predictive contribution of FoMO to digital fatigue among Indonesia's digital youth population. Inclusion criteria were operationalized as follows: (a) Indonesian citizenship; (b) age 13–30 years; (c) classified as digital

natives on behavioral criteria, defined by meeting at least one of two conditions: born in or after 1995, or reporting average internet/screen use ≥ 2 hours per day for at least the past year; (d) active use of social media or digital platforms for a minimum of 2 hours per day at the time of questionnaire completion; and (e) voluntary agreement to participate through provision of informed consent. These criteria follow conceptualizations of digital natives [40], [41], which emphasize high patterns of digital exposure and participation from an early age. Demographic data collected included age, gender, highest education level, province of residence, purposes of internet use, and average daily screen time to assess sample representativeness.

2.2 Sampling procedures

A stratified convenience sampling technique was applied across Indonesia's three principal regions (Western, Central, and Eastern) to enhance demographic diversity and socio-cultural representation across provinces. This approach aimed to balance respondent proportions across regions without implementing full randomization. Recruitment was conducted online via academic networks, digital communities, and social media between 22 August -17 September 2025. Trained enumerators administered the questionnaire using *Google Forms*.

To prevent duplicate responses, the survey system was restricted to "one response per account" and IP-address monitoring was applied. A total of 1,617 responses were collected during the data-collection period; after screening (removal of duplicate responses, missing data, and extreme response patterns), 1,330 valid responses remained (response rate = 82.2%).

2.3 Sample size, power, and precision

Sample size was determined using *G*Power 3.1* [42] assuming a medium effect size ($f^2 = 0.15$), significance level ($\alpha = 0.05$), and statistical power ($1-\beta = 0.95$, which required a minimum of 129 participants for simple regression analysis. The actual sample (N = 1,330) substantially exceeded this minimum, thereby increasing parameter-estimate precision and reinforcing the generalizability of the findings.

2.4 Measures

Fear of Missing Out (FoMO)

FoMO was measured with the Online Fear of Missing Out Scale (ON-FoMO) developed by [23], subsequently modified and

revalidated by the researchers to align with Indonesia's digital cultural context. Modifications addressed linguistic and social differences between Western contexts and Indonesia to enhance comprehensibility, reduce cultural bias, and ensure content validity. Idiomatic expressions and technology-related terms in the original version were adapted to more familiar Indonesian equivalents without altering conceptual meaning. A pilot test with 100 participants indicated item comprehension rates above 90% and absence of ambiguity.

The scale comprises four primary dimensions: need to belong, need for popularity, anxiety, and addiction. An example item is: "*When I see on social media that a friend went to a place I also want to visit, I feel upset*." Responses were recorded on a five-point Likert scale: (1) Never, (2) Rarely, (3) Sometimes, (4) Often, and (5) Always. Prior to the main survey, a pilot test was conducted with 100 participants to evaluate the structural validity of the modified FoMO scale within the Indonesian cultural context. Confirmatory Factor Analysis (CFA) was performed to assess whether the hypothesized factor structure adequately represented the empirical data. The analysis yielded a statistically significant result, $\chi^2(84) = 123.137$, $p = 0.003$. However, as emphasized by [43], [44], the Chi-square test is highly sensitive to sample size; therefore, significance alone does not necessarily indicate poor model fit.

To obtain a more comprehensive assessment, additional fit indices were examined. The model demonstrated satisfactory fit to the data, as indicated by CFI = 0.94, TLI = 0.92, RMSEA = 0.07, and SRMR = 0.06, which meet the conventional cut-off criteria recommended by [45]. Factor loadings ranged from 0.52 to 0.85, with Average Variance Extracted (AVE) above 0.50 and Composite Reliability (CR) = 0.91, supporting convergent and discriminant validity. Internal consistency reliability was very high ($\alpha = 0.91$; $\omega = 0.93$) indicating the scale is reliable and appropriate for measuring the FoMO construct in Indonesia's digital-native population.

Table 1. Factor Loadings, Parameter Estimates, and R-squares Values FoMO Scale

Dimensions of FoMO	Indicator	Std. estimate	Std. Error	z-value	R2
Need to belong	Item 1	0.458	0.093	4.905	0.210

Dimensions of FoMO	Indicator	Std. estimate	Std. Error	z-value	R2
	Item 2	0.733	0.060	12.270	0.537
	Item 3	0.864	0.042	20.352	0.746
	Item 4	0.740	0.059	12.597	0.547
Need for popularity	Item 5	0.901	0.034	26.869	0.811
	Item 6	0.850	0.040	21.411	0.723
	Item 7	0.783	0.049	15.852	0.613
Anxiety	Item 8	0.586	0.077	7.612	0.343
	Item 9	0.813	0.044	18.429	0.661
	Item 10	0.878	0.035	25.324	0.772
	Item 11	0.876	0.035	25.058	0.768
Addiction	Item 12	0.679	0.072	9.485	0.461
	Item 13	0.715	0.067	10.678	0.511
	Item 14	0.735	0.064	11.416	0.541
	Item 15	0.705	0.068	10.340	0.497

Digital Fatigue

Digital fatigue was measured using the Digital Fatigue Scale developed by [12] and subsequently modified by the researchers to ensure relevance to digital use among adolescents and young adults in Indonesia. Adaptations involved replacing work-related terminology (workplace fatigue) with references to common activities such as online academic or social engagements to enhance cultural equivalence without altering the conceptual meaning. A pilot test with 100 participants indicated comprehension rates above 90%. The scale comprises four primary dimensions: digital addiction, psychological fatigue, physical–mental fatigue, and psychosomatic problems. An example item is: "*I feel mentally exhausted after using digital devices for extended periods*." Responses were recorded on a five-point Likert scale: (1) Never, (2) Rarely, (3) Sometimes, (4) Often, and (5) Always.

To evaluate the structural validity of the modified *Digital Fatigue* scale, a *Confirmatory Factor Analysis (CFA)* was conducted using the pilot test data (N = 100). The analysis aimed to confirm whether the hypothesized factor structure appropriately represented the latent construct within the Indonesian population. The model yielded a statistically significant Chi-square value, $\chi^2(71) = 107.665$, $p = 0.003$. As noted by [43], [44], the Chi-square statistic

is highly sensitive to sample size; therefore, significance alone does not necessarily imply poor model fit.

A comprehensive evaluation based on additional goodness-of-fit indices indicated that the model demonstrated excellent fit to the data CFI = 0.95, TLI = 0.94, RMSEA = 0.07, SRMR = 0.06), consistent with the recommended thresholds by [45]. Factor loadings ranged from 0.60 to 0.85, reflecting substantial item contributions to the latent factor. The Average Variance Extracted (AVE) exceeded 0.50, and the Composite Reliability (CR) was 0.92, indicating satisfactory convergent and discriminant validity. Reliability indices were high (Cronbach's α = 0.92; McDonald's ω = 0.92), confirming that the scale is valid and reliable for use within the Indonesian population.

Table 2. Factor Loadings, Parameter Estimates, and R-squares Values Digital Fatigue Scale

Dimensions of Digital Fatigue	Indicator	Std. estimate	Std. Error	z-value	R2
Digital addiction	Item 1	0.791	0.043	18.348	0.626
	Item 2	0.865	0.033	26.118	0.749
	Item 3	0.860	0.034	25.439	0.740
	Item 4	0.606	0.067	9.021	0.368
Psychological fatigue	Item 5	0.704	0.060	11.742	0.496
	Item 6	0.721	0.058	12.418	0.519
	Item 7	0.867	0.062	11.069	0.472
	Item 8	0.707	0.060	11.868	0.500
Physical and mental fatigue	Item 9	0.837	0.038	22.145	0.700
	Item 10	0.636	0.064	9.978	0.405
	Item 11	0.906	0.030	29.813	0.822
Psychosomatic problems	Item 12	0.865	0.033	26.237	0.748
	Item 13	0.742	0.050	14.979	0.550
	Item 14	0.776	0.045	17.306	0.602

2.5 Data analysis

All statistical analyses were performed using IBM SPSS Statistics version 26. Preliminary analyses included descriptive

statistics to examine the distributional properties of the data and summarize participants' demographic characteristics, including age, gender, educational level, province of residence, patterns of social media use, and preferred digital platforms. Before conducting the regression analysis, a series of classical assumption tests were performed to ensure the appropriateness of applying Ordinary Least Squares (OLS) estimation. These included the normality test (P–P plot and skewness–kurtosis values), linearity test (Curve Estimation and residual scatterplot), homoscedasticity test (Glejser test), and autocorrelation test (Durbin–Watson). All assumptions were met, confirming that the model satisfied the statistical prerequisites for regression analysis. The main analysis employed a simple linear regression, with FoMO as the predictor variable and Digital Fatigue as the dependent variable. The regression coefficient (β), adjusted R^2, p-value, and effect size (*Cohen's* f^2) were reported to evaluate the direction, magnitude, and statistical significance of the predictive relationship.

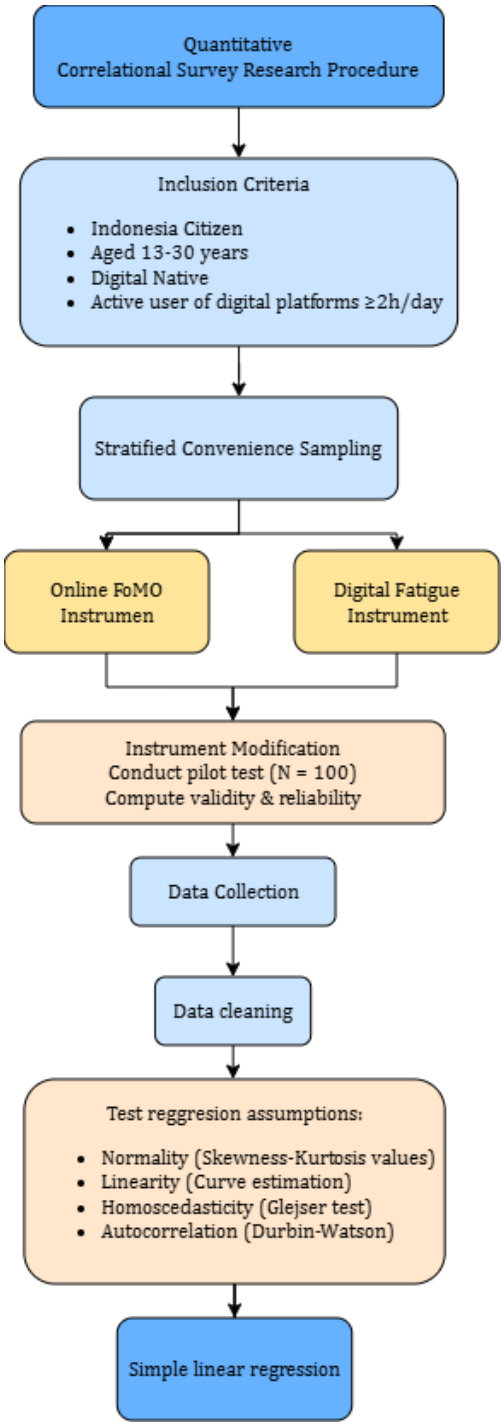


Figure 1. Research Flowchart

3. RESULTS AND DISCUSSION

3.1 Sample Characteristics and Internet Use

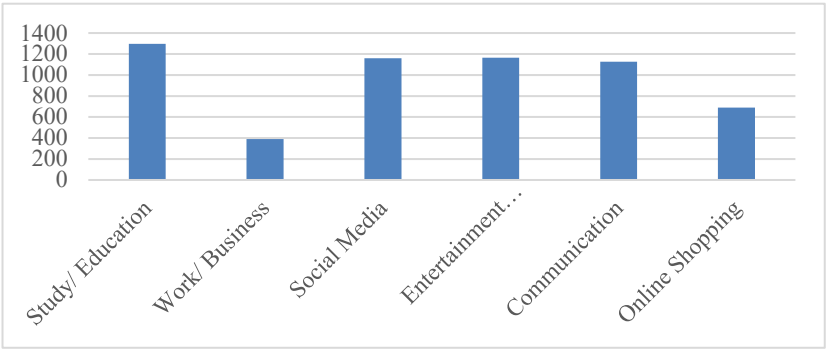
Table 3 Distribution of Demographic Statistical Data of Respondents (N=1.330)

Demographics	N	%
Sex		
Male	369	27.7
Female	961	72.3
Age		
13	3	0.2
14	33	2.5
15	19	1.4
16	39	2.9
17	77	5.8
18	137	10.3
19	187	14.1
20	218	16.4
21	194	14.6
22	117	8.8
23	85	6.4
24	51	3.8
25	54	4 .1
26	35	2.6
27	22	1.7
28	17	1.3
29	17	1.3
30	25	1.9
Last Level of Education		
Elementary School	15	1.1
Junior High School	60	4.5
Senior High School	778	58.5
Diploma	39	2.9
Bachelor's Degree	400	30.1
Postgraduate/ Graduate	38	2.9
Region of Residence		
Sumatera	94	7.1
Java	338	25.4

Demographics	N	%
Kalimantan	265	19.9
Sulawesi	444	33.4
Nusa Tenggara	164	12.3
Bali	16	1.2
Papua	9	0.7
Daily Internet Usage Duration		
1-2 Hour	135	10.2
3-5 Hour	479	36.0
6-8 Hour	410	30.8
9 Hour or more	306	23.0

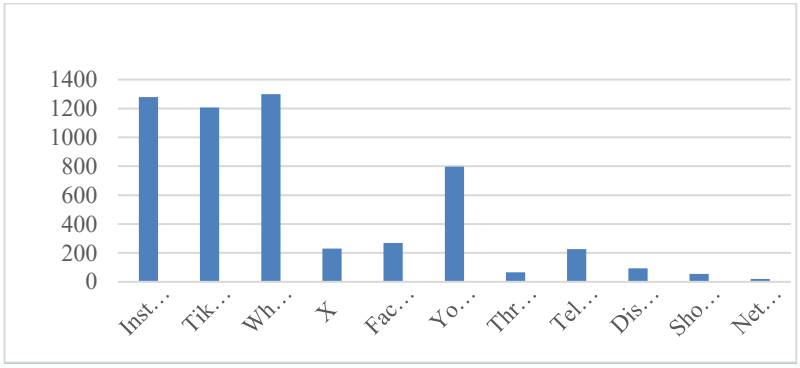
Out of a total of 1,330 respondents, the majority were female (72.3%), while males accounted for (27.7%). The age distribution was concentrated in the 18–21-year-old group, with the largest proportion at age 20 (16.4%), followed by ages 18 and 19 (each 14.1%) and age 21 (13.8%). This distribution indicates that the sample predominantly represents digital natives in the late-adolescent to early-adulthood phase. In terms of educational attainment, most respondents were enrolled at the senior high school level (58.5%), followed by undergraduate students (30.1%). This composition underscores that the study primarily focused on the productive-age group currently pursuing secondary and higher education, consistent with the characteristics of digital natives.

With respect to geographical distribution, respondents were predominantly domiciled in Sulawesi (33.4%), followed by Java (25.4%) and Kalimantan (19.9%). Regarding internet usage duration, the majority reported relatively high levels of online engagement: 36.0% used the internet for 3–5 hours per day, while nearly half reported usage exceeding six hours daily (30.8% for 6–8 hours and 23.0% for ≥9 hours). Only 10.2% reported using the internet for 1–2 hours per day. These findings corroborate previous studies indicating that Indonesian youth exhibit one of the world's highest daily screen-time averages, often surpassing six hours [4]. Prolonged exposure to digital devices has been associated with attentional fatigue, cognitive overload, and emotional exhaustion which key indicators of digital fatigue [6], [12], [46]. Hence, the demographic characteristics and digital usage intensity of this sample align with theoretical expectations of populations most vulnerable to FoMO-driven digital exhaustion.



Grafik 1. Primary Purposes of Internet Use
***Note**: Participants could select more than one purpose of use.*

As shown in Grafik 1, the category "Study/Education" (N = 1,296) represented the most dominant purpose of internet use, followed by "Entertainment (games, videos, etc.)" (N = 1,169) and "Social Media" (N = 1,159). "Work/Business" (N = 389) was the least frequently reported category, while "Communication" (N = 1,127) and "Online Shopping" (N = 690) occupied intermediate positions. This distribution illustrates a dual orientation between productivity and recreation consistent with recent findings that digital natives use the internet both for academic enrichment and hedonic engagement, often alternating between task-focused and leisure-oriented activities within the same digital session [14], [47], [48]. Such multitasking behaviors have been identified as precursors to attentional fragmentation and fatigue, particularly when driven by FoMO-induced switching between academic and social platforms [49], [50]



Grafik 2. Most Frequently Used Platform Type
***Note**: Participants could select more than one purpose of use.*

Grafik 2 illustrates that WhatsApp (N = 1,300), Instagram (N = 1,278), and TikTok (N = 1,207) were the most frequently used platforms. YouTube (N = 797) occupied a mid-level position, followed by Facebook (N = 269) and X (N = 231), which were less frequently used. Telegram (N = 226), Discord (N = 93), Threads (N = 65), and Shopee (N = 55) recorded substantially lower frequencies, with Netflix (N = 20) being the least used platform. This pattern underscores the dominance of visually oriented applications, instant messaging services, and social networking platforms within the daily digital ecosystem of digital natives.

This pattern underscores the dominance of visually oriented applications and instant communication platforms among Indonesian youth. Prior research suggests that image and video based applications (e.g., Instagram, TikTok) are most strongly associated with FoMO, social comparison, and emotional exhaustion, as they amplify social visibility and real-time interaction pressure [51], [52]. These findings thus situate the current sample within a digital ecosystem that inherently fosters continuous connectivity and potential fatigue accumulation.

3.2 Descriptive Statistics of Key Measures

Table 4. Descriptive Statistics of Main Variables

Variable	N	Min	Max	Mean	SD
***Fear of Missing Out* (X)**	1330	15	74	37.90	10.20
***Digital Fatigue* (Y)**	1330	15	69	39.98	9.56

Table 4 presents the descriptive statistics of the primary research variables. The FoMO scores, consisting of 15 items, ranged from 15 to 74, with a mean of 37.90 (SD = 10.20). Meanwhile, the Digital Fatigue scores (14 items) ranged from 15 to 69, with a mean of 39.98 (SD = 9.56). The relatively wide score ranges and moderate mean values indicate sufficient variability among respondents and the absence of floor or ceiling effects, thereby confirming the suitability of the data for further analysis using regression techniques.

The categorization of FoMO and Digital Fatigue was determined using a percentile-based cutoff approach, which is considered most appropriate for non-normative psychological constructs in large-sample studies [53], [54]. This method provides

a more accurate representation of empirical variation compared to the mean ± SD approach [54], which requires the assumption of full normality. Specifically, categorization followed the 33rd and 67th percentile thresholds, representing low (≤33rd), moderate (34th–66th), and high (≥67th) categories. This approach avoids the use of arbitrary cutoff values and more accurately reflects the natural distribution of respondents' data [53].

Table 5 Categorization of FoMO and Digital Fatigue Based on Percentile Distribution

Variable	Category	Range Percentile	F	%
***Fear of Missing Out* (X)**	Low	≤ 33	1140	85.7
	Moderate	34–66	161	12.1
	High	≥ 67	29	2.2
***Digital Fatigue* (Y)**	Low	≤ 33	1115	83.8
	Moderate	34–66	197	14.8
	High	≥ 67	18	1.4

Table 5 indicates that the majority of participants exhibited low levels of FoMO (85.7%), followed by the moderate category (12.1%), with only a small proportion (2.2%) classified as high. This finding suggests that most Indonesian youth in this study tend to experience relatively low levels of anxiety or social drive associated with FoMO. A similar pattern was observed for digital fatigue, with the majority categorized as low (83.8%), 14.8% as moderate, and only 1.4% as high. These results indicate that experiences of digital fatigue were also relatively low within this population.

3.3 Classical Assumption Tests for Regression

Tabel 6 Results of Classical Assumption Tests (FoMO–Digital Fatigue Model)

Assumption	Test	Statistic	p	Decision
Residual normality	P-P Plot and Skewness-Kurtosis	Skewness= 0.580 Kurtosis = 0.182	-	Normal

Assumption	Test	Statistic	p	Decision
Linearity of relationship	Curve Estimation and Scatterplot Residual	0.338	-	Linear
Homoscedasticity	Glejser	-0.169	0.866	No heteroscedasticity
Autocorrelation	Durbin-Watson	2.006	-	No autocorrelation present

Prior to testing the hypothesized relationship, all standard assumptions of the Ordinary Least Squares (OLS) regression model were examined to ensure the validity, efficiency, and unbiasedness of the parameter estimates. The residual normality test indicated that the error distribution met the normality assumption. The calculated values of *Skewness* = 0.580 and *Kurtosis* = 0.182, both within the ±1 threshold recommended by [55], suggested that deviations from the normal curve were negligible. In addition, the P–P Plot visualization demonstrated that the residual points closely followed the diagonal line, confirming approximate normal distribution. This pattern implies that model errors were random and symmetrically distributed around zero, ensuring that OLS estimates were unbiased and efficient [43], [53]. Accordingly, the assumption of residual normality was deemed satisfied.

Subsequently, the linearity test of the relationship between FoMO and Digital Fatigue revealed that the association between the variables was linear. Curve Estimation analysis yielded an R^2 value of 0.338, while the addition of non-linear models (quadratic or cubic) did not result in meaningful improvements ($\Delta R^2 \leq 0.003$). This finding was further supported by the residual scatterplot, which displayed a random distribution around the regression line without discernible curvilinear patterns. In line with the principle of parsimony, the linear model was selected, as it adequately explained the data variation without unnecessary complexity [56]. Thus, the relationship between FoMO and Digital Fatigue satisfied

the linearity assumption, supporting the use of linear regression as a theoretically and empirically valid approach.

The assumption of homoscedasticity was tested using the Glejser Test, which yielded t = −0.169, p = 0.866, indicating that the absolute residual values were not significantly correlated with the independent variable. This result suggests the absence of heteroscedasticity [53]. According to [57], when p > 0.05 in the Glejser Test, it can be concluded that residual variance remains constant across the predictor range. Therefore, this finding supports the fulfillment of the homoscedasticity assumption, implying that the regression model possessed stable error variance. Consequently, the regression parameter estimates can be considered efficient and unbiased, as required in the classical OLS framework.

Finally, the autocorrelation test using the Durbin–Watson statistic (DW = 2.006) indicated that the value fell within the ideal range (1.5–2.5), suggesting no evidence of autocorrelation among residuals [43]. This result implies that errors were independent across observations, consistent with one of the fundamental assumptions of regression analysis [58]. Having met all classical OLS assumptions; normality, linearity, homoscedasticity, and independence of residuals, the regression model can be considered statistically robust, providing valid, efficient, and unbiased parameter estimates. Therefore, subsequent inferential analyses can be interpreted with confidence regarding the relationship between FoMO and Digital Fatigue.

3.4 Regression Analysis Results

Table 7 Simple Linear Regression Analysis

Predictor	**B**	**SE B**	**95% CI (LL, UL)**	**β**	**t**	**Adjusted R^2**	**f^2**
Constant	18.692	0.822	[17.080, 20.304]	-	22.746	-	-
FoMO (Total)	0.546	0.021	[0.505, 0.587]	0.582	26.065	0.338	0.51

A simple linear regression analysis was conducted to examine the effect of FoMO on Digital Fatigue. The results indicated that the regression model was significant and demonstrated good fit, Adjusted R^2 = 0.338. This means that FoMO accounted for approximately 33.8% of the variance in Digital Fatigue. The model significance test yielded a highly robust result, F (1, 1328) = 679.383, $p < 0.001$, confirming that FoMO is a meaningful predictor of Digital Fatigue.

The regression coefficient indicated a value of $\beta = 0.546$, SE = 0.021, 95% CI [0.505, 0.587], t(1328) = 26.065, $p < 0.001$. This result suggests that each one-unit increase in FoMO was associated with a 0.546-unit increase in Digital Fatigue scores, after controlling for residual error. The 95% confidence interval, which did not cross zero, further confirmed that this effect was statistically significant and stable [53]. In addition, the standardized coefficient ($\beta = 0.582$) reinforced this finding, indicating a strong positive association between FoMO and Digital Fatigue. The model intercept (B = 18.692, SE = 0.822, t = 22.746, 95% CI [17.080, 20.304]) was also statistically significant, representing the baseline level of Digital Fatigue when FoMO scores were equal to zero.

3.5 Theoretical and Practical Implications

The present study provides empirical evidence that Fear of Missing Out (FoMO) significantly predicts digital fatigue among digital-native youth in Indonesia, with an effect size ranging from moderate to large. This finding indicates that FoMO is not merely a transient emotional experience, but rather a central psychosocial mechanism that bridges the social need for connection with the psychological consequences of excessive digital engagement. Accordingly, the findings provide empirical support for the proposed research hypothesis (H1: Higher levels of FoMO are associated with greater levels of digital fatigue among Indonesian youth) while simultaneously expanding the theoretical understanding of digital well-being in the era of hyperconnectivity.

These findings are consistent with prior research conducted in Western contexts, which demonstrated that FoMO contributes to emotional exhaustion, social media burnout, and decreased well-being [8], [27], [59], [60]. Prior work in Western contexts has shown a reliable association between FoMO (or related compulsive social media behaviors) and social media fatigue, anxiety, and emotional exhaustion, but with effect sizes that are generally small-to-moderate [8], [59].

Comparable patterns have also been reported among Southeast Asian youth populations, such as in Malaysia and the Philippines, where FoMO strongly correlates with digital overuse and psychological strain [61], [62]. Several regional studies from Asia report comparable relationships but often document stronger effects and additional mediating pathways (e.g., compulsive use, information overload, and social comparison) that link FoMO to fatigue and burnout symptoms among young people [52], [63], [64].

Several contextual and methodological explanations may account for this discrepancy. Culturally, Indonesia's collectivistic orientation characterized by interdependence, concern for social harmony, and heightened attention to group norms, may magnify the emotional salience of missing social interactions, turning FoMO into a perceived threat to social identity and belonging rather than a purely individual anxiety [37]. Empirical work on culture and FOMO-related behaviors suggests that collectivist norms are associated with stronger conformity to group expectations and greater sensitivity to social exclusion, which can intensify online monitoring and the emotional consequences of exclusion [65]. Moreover, Indonesia's high social media penetration and intensive platform use (e.g., large WhatsApp, Instagram, and TikTok user bases and above-average daily social media hours) create a technological ecology that sustains frequent social cues and algorithmic feedback loops conditions that amplify FoMO and accelerate cognitive/emotional depletion. Recent digital-use reports corroborate Indonesia's substantial social media engagement.

Methodologically, this study employed modified and revalidated versions of both the Online Fear of Missing Out Scale (ON-FoMO) and the Digital Fatigue Scale (DFS), each adjusted for Indonesia's unique digital cultural context. The localized adaptation process ensured that culturally embedded online practices such as group-chat reciprocity, digital presence cues, and collective online rituals were represented more accurately than in their original Western instruments. Incorporating these contextual dimensions was essential for capturing the psychosocial nuances of FoMO and digital fatigue among Indonesian digital natives, whose online interactions are often shaped by collectivistic norms and relational interdependence. Previous cross-cultural adaptation studies have consistently shown that linguistic and cultural calibration not only enhances construct validity but also improves the predictive sensitivity of psychological scales in non-Western digital environments [21], [66].

Demographically, the present study focused on Indonesia's digital-native population aged 13–30 years, a cohort representing university students and young adults who are deeply embedded in digital ecosystems. Compared with mixed-age or adolescent samples commonly examined in Western studies, this group simultaneously navigates academic demands, social expectations, and future-oriented pressures while remaining among the heaviest and most active social media users [4]. With a relatively large sample of 1,330 participants, this study provides a robust representation of the behavioral tendencies of Indonesian digital natives, allowing for a meaningful generalization of digital behavior patterns within this cohort. Evidence indicates that young adults are particularly susceptible to FoMO-driven compulsive monitoring and multitasking, which increases cognitive load and psychological strain; studies that sample older or more heterogeneous age groups often report attenuated effects [49], [50]. Thus, age/cohort composition and intensity of daily platform exposure likely contributed to the relatively larger FoMO-fatigue effect observed in this Indonesian sample.

Theoretically, the finding that FoMO predicts digital fatigue contributes significantly to the cyberpsychology literature by integrating three complementary conceptual frameworks: motivational (Self-Determination Theory, SDT), cognitive (Cognitive Load Theory, CLT), and stress-based (Transactional Model of Stress). This integration transcends approaches that merely consider screen time or device use duration, emphasizing instead that digital fatigue emerges as a product of interaction among social needs, cognitive load, and chronic stress appraisal processes.

First, SDT posits that human behavior is driven by the fulfillment of three basic psychological needs: autonomy, competence, and relatedness [28], [30]. From the SDT perspective, FoMO can be understood as a manifestation of an unmet need for relatedness. Individuals who experience deficits in social connectedness tend to increase social monitoring behaviors and media engagement in an effort to restore their sense of connection [26], [28], [67]. These compensatory behaviors often become intensive and repetitive for instance, the frequent checking of notifications gradually shifting media use from an adaptive social function to an anxiety-reducing routine [26], [68]. This process explains why FoMO operates as a primary motivational driver that triggers excessive digital exposure, consequently paving the way for digital fatigue. In the context of

Indonesian youth, a socio-cultural environment that continues to emphasize collectivism further amplifies the relevance of SDT. The pressure to stay updated with community news, friends' activities, or viral trends shapes digital behavior, where the need to be "seen" and "recognized" within digital communities plays a dominant role [27], [36], [38], [69], [70].

Second, Cognitive Load Theory (CLT) provides an explanation of the cognitive mechanisms underlying digital fatigue. CLT distinguishes among intrinsic, extraneous, and germane cognitive loads [31]. Continuous exposure to information, frequent interruptions, and digital multitasking increase both extraneous and germane cognitive loads, causing cognitive processing capacity to exceed adaptive thresholds [6], [12], [31], [59]. When cognitive resources are depleted, individuals experience diminished attention, impaired decision-making, and mental exhaustion phenomena consistent with research findings on digital fatigue among younger populations [12], [34], [46], [59], [71]. Thus, CLT situates FoMO as a trigger for the cumulative increase in cognitive load.

Third, the Transactional Model of Stress and Coping conceptualizes FoMO as a psychosocial stressor that demands repeated cognitive appraisal and coping responses [32], [72]. Within this framework, individuals first assess whether missing social information poses a threat to their social belonging or self-worth (primary appraisal), and then evaluate their ability to manage this threat (secondary appraisal) [32]. When this appraisal process results in a perceived threat and inadequate coping resources, individuals tend to engage in maladaptive coping patterns such as compulsive checking or offline avoidance, which deplete emotional and cognitive resources and accelerate the onset of fatigue [32], [72], [73], [74]. This perspective helps explain individual variability: two people with similar levels of FoMO may experience different degrees of fatigue depending on their coping capacities and social support systems [59].

Moreover, the integration of these three theories suggests a sequential process model: (a) motivational activation (FoMO triggers increased engagement), (b) cognitive accumulation (increased information exposure elevates cognitive load), and (c) chronic stress depletion (repetitive or maladaptive coping induces emotional and psychosomatic exhaustion). This model supports the notion that FoMO functions as a catalyst that accelerates digital fatigue through the interplay of motivational and cognitive mechanisms [59].

Culturally, this theoretical integration holds strong relevance for the collectivistic norms prevalent in Indonesia and Southeast Asia. In societies with high social orientation, digital connectedness represents a new form of social participation, a concept often described as digital collectivism [75], [76]. Cross-national studies in the region [36], [77] indicate that social expectations to remain "always online" intensify the relationship between FoMO and digital fatigue, particularly among university students who face both academic and social pressures. Within the algorithmic architecture of social media, unfulfilled social needs are often manipulated through features such as notifications, infinite scrolling, and personalized feeds, heightening tendencies toward over-engagement and, consequently, increasing the risk of digital fatigue [66], [78].

Beyond its theoretical implications, this result highlights a crucial insight into how FoMO operates as both a psychological and cultural mechanism shaping digital well-being in Indonesia. The finding underscores that digital fatigue should not be viewed merely as a symptom of screen overuse, but as a psychosocial response to the pressure of digital belonging. In practical terms, this suggests that interventions to reduce digital fatigue must go beyond individual-level solutions and address the social–cultural contexts that sustain FoMO-driven behaviors. Such programs can help Indonesian youth recognize the emotional cycle of online comparison and anxiety, and develop healthier social media habits. Moreover, community-based initiatives such as collective digital detox programs or offline social reconnection events could align with Indonesia's collectivistic ethos, fostering a shared sense of balance rather than individual abstinence.

3.6 Limitations and Directions for Future Research

This study acknowledges several limitations that should be critically considered. First, the correlational research design limits causal inference. Although FoMO was found to significantly predict digital fatigue, the directionality of this relationship cannot be conclusively determined. Longitudinal and experimental studies are needed to examine whether FoMO leads to digital fatigue or, conversely, whether digital fatigue intensifies FoMO (reverse causality). Second, there was a gender imbalance within the sample (72% female), which may affect the generalizability of the findings. Previous studies have shown that females are more likely to experience FoMO and emotional fatigue due to social pressures in digital environments [26], [59]. Therefore, future research is encouraged to

employ a more representative stratified sampling design or to conduct multi-group analyses based on gender. Third, the use of online data collection through *Google Forms* may introduce selection bias toward respondents who are more technologically adept. This limitation could exclude individuals with lower levels of digital access, who might experience FoMO and digital fatigue in qualitatively different ways. Fourth, a substantial proportion of unexplained variance (66.2%) remains within the model, suggesting that additional variables such as coping style, digital self-control, academic stress, or social comparison orientation may play moderating or mediating roles in the relationship between FoMO and digital fatigue.

4. CONCLUSION

The present study concludes that the FoMO has a significant and positive relationship with digital fatigue among adolescents and young adults in Indonesia. The findings indicate that higher levels of FoMO correspond to a greater tendency for individuals to experience digital fatigue, as reflected in increased cognitive, emotional, and social burdens resulting from excessive digital engagement. Thus, FoMO should not be regarded merely as a transient behavioral phenomenon but rather as a psychosocial mechanism that drives individuals to remain constantly connected online ultimately amplifying cognitive load and emotional strain.

Theoretically, this study enriches the conceptual framework of digital well-being and technostress by positioning FoMO as a motivational driver that links unmet social needs with excessive cognitive demands and psychological stress responses. FoMO can also be conceptually distinguished from related constructs such as social anxiety which focuses on fear of negative evaluation and nomophobia, which refers to anxiety over losing access to technology. Unlike these constructs, FoMO centers on the psychological drive to remain socially relevant and continuously informed, making it a unique mechanism within the landscape of contemporary digital psychology. From a practical standpoint, these findings underscore the importance of developing culturally sensitive interventions to address FoMO-driven behaviors. Programs emphasizing digital literacy, digital self-regulation, and mindful technology use may help mitigate compulsive connectivity behaviors and reduce digital fatigue among younger generations.

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