

# The Influence of Digital Empathy, Online Identity Formation, Fear of Missing Out (FoMO), and Social Media Fatigue on the Mental Health of Adolescents in West Java

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## ABSTRACT

This study investigates the influence of digital empathy, online identity formation, fear of missing out (FoMO), and social media fatigue on the mental health of adolescents in West Java, Indonesia. Using a quantitative research design, data were collected from 175 adolescent respondents through a Likert-scale questionnaire and analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS 3.0). The results reveal that digital empathy and online identity formation have a positive and significant effect on adolescents' mental health, indicating that empathetic online behavior and authentic self-expression contribute to psychological well-being. Conversely, FoMO and social media fatigue demonstrate negative and significant effects, suggesting that excessive social comparison and emotional exhaustion reduce mental wellness. Moreover, social media fatigue mediates the relationship between FoMO and mental health, showing that digital overload acts as a psychological strain linking fear of exclusion to reduced well-being. The model explains 57% of the variance in mental health, indicating strong predictive power. These findings highlight the importance of cultivating digital empathy, promoting balanced online identity management, and implementing interventions to minimize FoMO and fatigue among youth. The study contributes to both theoretical understanding and practical strategies for enhancing adolescent digital well-being in the context of rapid social media engagement.

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## 1. INTRODUCTION

The increasing integration of digital technology into daily life has profoundly reshaped the social and psychological experiences of adolescents. In Indonesia—particularly in West Java, a province with one of the highest rates of social media usage

among youth—digital interactions have become an integral part of identity formation, emotional expression, and social connectedness [1]. While social media offers opportunities for communication, self-expression, and learning, its pervasive influence also introduces new psychological challenges, such as social comparison, digital

fatigue, and emotional dependency [2], [3]. Understanding the mechanisms through which digital engagement affects mental health is essential for designing preventive and educational strategies that foster healthier online behaviors among adolescents.

In the context of these evolving interactions, digital empathy emerges as a vital social competence enabling individuals to recognize and respond to emotions in online settings. Unlike traditional empathy that relies on direct interpersonal cues, digital empathy involves interpreting emotions from textual and visual content on platforms such as Instagram, TikTok, and X (formerly Twitter). Prior research [4], [5] has shown that higher levels of digital empathy enhance prosocial behavior and emotional resilience. Conversely, a lack of empathy or misinterpretation of emotional cues can trigger cyberbullying, alienation, and psychological stress. Thus, digital empathy serves as a psychological safeguard that preserves adolescents' mental well-being within digital communities.

Another key factor shaping adolescent mental health is online identity formation, a process through which young people construct and express their sense of self in virtual spaces. Social media allows adolescents to explore various facets of their identity—through self-presentation, peer validation, and experimentation with belongingness [6], [7]. While this process can support self-discovery and confidence, it may also generate dependence on external approval and heightened sensitivity to social evaluation. Adolescents often equate online popularity with self-worth, which distorts their perception of self and triggers emotional strain [8], [9]. This duality—empowering yet potentially detrimental—necessitates a deeper empirical exploration within Indonesia's cultural and social context.

The Fear of Missing Out (FoMO) further complicates the relationship between online engagement and mental health. FoMO represents the persistent anxiety that others are enjoying rewarding experiences without one's participation [10], [11]. The constant flow of social updates drives adolescents to

stay perpetually connected, leading to compulsive checking behavior, heightened anxiety, and lower life satisfaction. In collectivist societies such as Indonesia, where belongingness and group approval are central to social identity, FoMO exerts even greater psychological pressure. This condition can foster emotional exhaustion and amplify feelings of inadequacy, thereby undermining adolescents' overall well-being.

Lastly, social media fatigue—a state of emotional and cognitive exhaustion from excessive online interaction—has become a widespread phenomenon among digital natives. Continuous exposure to vast information, social comparison, and performance pressure erodes adolescents' emotional energy and contributes to stress, sleep disturbances, and depressive tendencies [9], [12]. When FoMO combines with low digital empathy, it creates a reinforcing cycle of anxiety and fatigue that diminishes psychological resilience. Against this backdrop, the present study investigates the influence of digital empathy, online identity formation, FoMO, and social media fatigue on adolescents' mental health in West Java. Employing a quantitative approach using Structural Equation Modeling–Partial Least Squares (SEM-PLS 3), this research aims to identify the direct and indirect effects among these interrelated digital-era psychological constructs. The study contributes theoretically by integrating empathy theory, identity construction, and cognitive-behavioral perspectives, while practically providing insights for educators, parents, and policymakers to design interventions that nurture empathy, reduce FoMO, and prevent social media fatigue among Indonesian adolescents.

## 2. LITERATURE REVIEW

### 2.1 *Digital Empathy and Adolescent Mental Health*

Digital empathy is the ability to understand and respond to others' emotions in digital environments [1], [13]. It involves recognizing emotional

cues expressed through text, emojis, or images and responding with sensitivity and compassion. Unlike traditional empathy, which depends on face-to-face cues, digital empathy requires cognitive and emotional adaptation to mediated communication [2]. Research shows that higher digital empathy enhances prosocial behavior and emotional resilience [14], while lower empathy levels are linked to anxiety and social detachment. Acting as an emotional safeguard, digital empathy helps reduce online misunderstandings and strengthens a sense of belonging and social support [4], [5]. Thus, it is hypothesized to have a positive and significant influence on adolescents' mental health by reinforcing prosocial behavior and psychological resilience.

## 2.2 Online Identity Formation

Online identity formation refers to the process through which individuals create and maintain self-representations in digital spaces. Adolescents often use social media to construct a digital version of themselves, selectively presenting aspects of identity for validation or self-expression [15], [16]. As Erikson's psychosocial theory suggests, adolescence is a critical stage for identity exploration, and in digital contexts this extends beyond physical boundaries, allowing greater experimentation and self-discovery [17], [18]v. However, while digital platforms foster creativity, they also expose adolescents to continuous peer evaluation and social comparison, leading to discrepancies between online

and offline selves and lowering self-esteem [15]. The pursuit of validation through "likes," "followers," and "comments" may create dependence on external approval, undermining emotional well-being. Empirical studies reveal mixed outcomes: positive online self-presentation can enhance confidence and emotional regulation [17], yet excessive identity performance may increase stress and depressive symptoms [17]. Therefore, online identity formation can both support and harm adolescents' mental health, depending on how authenticity and social validation are balanced in digital spaces.

## 2.3 Fear of Missing Out (FoMO) and Its Psychological Implications

Fear of Missing Out (FoMO), as conceptualized by [19], refers to the pervasive anxiety that others are engaging in rewarding experiences without one's participation. Closely linked to compulsive social media use, FoMO drives individuals to constantly monitor updates to avoid feeling excluded, a tendency intensified among adolescents by their developmental need for belongingness and peer approval [20]. High levels of FoMO have been associated with depression, social anxiety, and decreased life satisfaction (Baker et al., 2016), as the urge to stay connected fosters dependence on social platforms, disrupts sleep, and reduces direct social interaction [20]v. In collectivist societies such as Indonesia, where social harmony and group affiliation are highly valued, FoMO exerts stronger pressure to conform to digital norms, amplifying emotional distress.

Empirical evidence shows that FoMO mediates the relationship between social media engagement and mental health [21], [22]v; adolescents with higher FoMO tend to experience emotional exhaustion, irritability, and anxiety. Consequently, FoMO is hypothesized to negatively and significantly affect adolescents' mental health by heightening psychological tension and social dependence.

#### 2.4 Social Media Fatigue

Social media fatigue (SMF) refers to a state of mental and emotional exhaustion caused by excessive engagement with social media platforms [23]. It stems from information overload, constant notifications, social pressure, and repetitive digital interactions, making adolescents—who are among the most active users of platforms such as Instagram, TikTok, and WhatsApp—particularly vulnerable. According to [1], [7], SMF is marked by irritability, decreased motivation, and withdrawal from online activities, which, if prolonged, can lead to emotional numbness or depressive symptoms. Factors such as information redundancy, self-presentation demands, and social comparison [24]v further intensify fatigue, as adolescents who frequently compare themselves with idealized online portrayals often experience frustration and cognitive strain. Research by [25], [26] also found that SMF mediates the link between FoMO and mental distress, showing how overexposure to digital stimuli weakens emotional well-being. Therefore, social media fatigue is expected to negatively and

significantly affect adolescents' mental health by increasing stress and reducing psychological resilience.

#### 2.5 Mental Health in the Digital Age

Mental health encompasses emotional, psychological, and social well-being, shaping how individuals think, feel, and behave (WHO, 2022). Among adolescents, it is particularly vulnerable due to ongoing biological, social, and environmental changes. The digital environment—while facilitating communication, learning, and self-expression—also introduces new stressors such as cyberbullying, social comparison, and information overload. Studies have shown that excessive social media use is linked to heightened anxiety and depressive symptoms [1], [2], [27]. Nonetheless, positive digital experiences, such as empathetic interactions and supportive online communities, can strengthen resilience and foster a sense of belonging. In contrast, negative experiences like FoMO and social media fatigue contribute to emotional exhaustion and detachment. Understanding this duality is essential for developing digital well-being frameworks that help adolescents balance technology use with psychological health.

#### 2.6 Theoretical Framework

This study integrates three theoretical perspectives to explain the relationships among the variables. The Social Cognitive Theory (Bandura, 1986) emphasizes that behavior is shaped by cognitive processes, social interactions, and environmental contexts, suggesting that adolescents' online behaviors—such as

empathy and self-presentation—are learned through observation and digital reinforcement. The Self-Determination Theory (Deci & Ryan, 2000) highlights that mental well-being depends on the fulfillment of autonomy, competence, and relatedness, where excessive FoMO and social media fatigue reflect unmet psychological needs that lead to emotional distress. Meanwhile, the Uses and Gratifications Theory (Katz et al., 1974) proposes that media use is driven by the desire to fulfill specific personal and social needs; however, overuse for belonging and self-expression can result in fatigue or anxiety. Together, these frameworks explain how digital empathy, online identity formation, FoMO, and social media fatigue interact to shape adolescents' mental health.

H1: Digital empathy positively affects adolescents' mental health.

H2: Online identity formation significantly influences adolescents' mental health.

H3: Fear of Missing Out (FoMO) negatively affects adolescents' mental health.

H4: Social media fatigue negatively affects adolescents' mental health.

H5: FoMO positively influences social media fatigue among adolescents.

### 3. METHODS

This study employs a quantitative research approach with an explanatory design to examine the causal relationships among digital empathy, online identity formation, fear of missing out (FoMO), social media fatigue, and mental health among adolescents

in West Java. The quantitative method enables statistical measurement of variable relationships and hypothesis testing through Structural Equation Modeling–Partial Least Squares (SEM-PLS 3). The design not only evaluates the strength and direction of these relationships but also explores the mediating role of social media fatigue in linking FoMO with mental health, providing an explanatory perspective on both direct and indirect effects among variables.

The study's population consists of adolescents aged 15–21 years residing in West Java who actively use social media platforms such as Instagram, TikTok, WhatsApp, and X (formerly Twitter). Adolescents were chosen because they are the most digitally active group and are more psychologically vulnerable to the emotional consequences of online interaction. Using purposive sampling, the study established specific inclusion criteria: respondents had to reside in West Java, use social media for at least three hours daily, and participate voluntarily. A total of 175 valid responses were collected, meeting Hair et al.'s (2021) minimum requirement for SEM-PLS analysis. Data were gathered through an online questionnaire distributed via Google Forms between May and July 2025, accompanied by informed consent ensuring confidentiality. The questionnaire comprised two sections: demographic data and variable measurement using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree).

Five latent variables were examined: digital empathy (DE), online identity formation (OIF), fear of missing out (FoMO), social media fatigue (SMF), and mental health (MH). Each construct was measured using established indicators adapted from prior studies, such as Belman and Flanagan (2010) for digital empathy and Przybylski et al. (2013) for FoMO. A pilot test with 30 respondents ensured reliability and linguistic clarity, while validity was assessed through expert review and Confirmatory Factor Analysis (CFA) using the PLS algorithm. Reliability was tested via Cronbach's Alpha and Composite Reliability (CR) with a threshold above 0.70 (Hair et al., 2021). Data analysis was conducted using SmartPLS 3.0 in

two stages: (1) evaluation of the outer model for convergent and discriminant validity and reliability, and (2) evaluation of the inner model to assess path coefficients,  $R^2$ , predictive relevance ( $Q^2$ ), and hypothesis testing through bootstrapping with 5,000 resamples.

## 4. RESULTS AND DISCUSSION

### 4.1 Descriptive Statistics of Respondents

This section presents the descriptive profile of 175 adolescent respondents in West Java who participated in the study, covering variables such as gender, age group, education level, duration of daily social media use, and preferred platforms. The demographic overview offers insight into the respondents' digital behavior and serves as a contextual foundation for interpreting subsequent analytical results. Of the 175 participants, 102 (58.3%) were female and 73 (41.7%) were male, indicating a slight predominance of female adolescents who are generally more active in emotional and social online interactions (Kuss & Griffiths, 2017). The respondents ranged from 15 to 21 years old, with nearly half (47.4%) in the 17–18 age group—an age characterized by identity exploration and intense social media activity (Best, Manktelow, & Taylor, 2014). In terms of education, most were senior high school students (58.9%), followed by undergraduates (34.2%) and junior high school students (6.9%), showing that participants were predominantly digitally literate and exposed to online environments for both academic and recreational purposes.

The data further reveal that a majority of adolescents (69.1%) spend between four to more than six hours per day on social media, far exceeding the recommended threshold for healthy screen use. This heavy engagement reflects strong digital immersion among Generation Z users in West Java and supports the inclusion of constructs such as social media fatigue and FoMO in the analytical model. Instagram (43.4%) and TikTok (29.7%) emerged as the most frequently used

platforms, emphasizing adolescents' preference for visually driven, interactive environments that amplify social comparison and self-presentation pressures. The descriptive mean analysis shows that participants demonstrate high digital empathy ( $M = 3.92$ ) and good mental health ( $M = 3.88$ ), but moderate levels of FoMO ( $M = 3.41$ ) and social media fatigue ( $M = 3.55$ ), suggesting a digital paradox where connectivity promotes belonging yet contributes to psychological strain. Overall, the profile portrays adolescents as socially expressive and digitally engaged, but simultaneously vulnerable to emotional exhaustion, stress, and fatigue within performative online cultures dominated by visual validation and peer feedback.

### 4.2 Measurement Model Evaluation (Outer Model)

The evaluation of the measurement model (outer model) aims to test the validity and reliability of the research instruments used to measure the latent variables: Digital Empathy (DE), Online Identity Formation (OIF), Fear of Missing Out (FoMO), Social Media Fatigue (SMF), and Mental Health (MH). This stage ensures that each construct is measured accurately through its indicators before assessing the structural (inner) model. The analysis was conducted using SmartPLS 3.0, applying Confirmatory Factor Analysis (CFA) to assess convergent validity, discriminant validity, and construct reliability.

#### 1. Convergent Validity

Convergent validity refers to the degree to which indicators of a construct are positively correlated with each other. According to Hair et al. (2021), convergent validity is confirmed when each indicator has a factor loading  $\geq 0.70$ , and the Average Variance Extracted (AVE) value exceeds 0.50. Indicators below 0.70 were removed during preliminary testing to improve model accuracy.

Table 1. Outer Loadings and AVE Values for Each Construct

Construct / Indicator	Loading	AVE	Result
Digital Empathy (DE)		0.672	Valid
DE1: Recognize emotions from online content	0.813		
DE2: Respond sensitively to others online	0.842		
DE3: Prevent misunderstanding in digital conversations	0.793		
DE4: Show compassion in online discussions	0.827		
Online Identity Formation (OIF)		0.653	Valid
OIF1: Express self through social media profiles	0.789		
OIF2: Seek feedback to strengthen self-confidence	0.812		
OIF3: Maintain authenticity between online and real self	0.844		
OIF4: Reevaluate personal image through social interaction	0.777		
Fear of Missing Out (FoMO)		0.691	Valid
FOMO1: Feel anxious when not connected to social media	0.835		
FOMO2: Frequently check updates to avoid exclusion	0.873		
FOMO3: Feel discomfort when others share activities online	0.828		
FOMO4: Feel the need to stay updated constantly	0.793		
Social Media Fatigue (SMF)		0.701	Valid
SMF1: Feel tired due to prolonged online activity	0.885		
SMF2: Difficulty focusing due to social media overload	0.832		
SMF3: Desire to reduce time spent online	0.846		
SMF4: Feel emotionally drained after using social media	0.851		
Mental Health (MH)		0.722	Valid
MH1: Feel emotionally balanced	0.862		
MH2: Feel satisfied with daily life	0.873		
MH3: Able to manage stress effectively	0.837		
MH4: Feel positive and optimistic	0.853		

Table 1 presents the results of the outer loadings and Average Variance Extracted (AVE) for each construct, confirming the convergent validity of the measurement model. All item loadings exceed the 0.70 threshold recommended by Hair et al. (2021), indicating that each indicator effectively represents its corresponding latent variable. The AVE values for all constructs—Digital Empathy (0.672), Online Identity Formation (0.653), Fear of Missing Out (0.691), Social Media Fatigue (0.701), and Mental Health (0.722)—are above 0.50, showing that more than half of the variance in each construct is explained by its indicators. Digital Empathy (DE) demonstrates strong reliability with loadings from 0.793 to 0.842, reflecting adolescents' consistent empathetic responses in digital contexts. Online Identity Formation (OIF) also shows robust validity, with loadings between 0.777 and 0.844, highlighting self-expression, authenticity, and feedback as key components of online identity. FoMO indicators record

high loadings (0.793–0.873), emphasizing compulsive checking and anxiety as core traits of the construct. Similarly, Social Media Fatigue (SMF) displays high loadings (0.832–0.885), confirming that emotional exhaustion and difficulty focusing effectively measure fatigue. Lastly, Mental Health (MH) indicators (0.837–0.873) validate emotional balance, satisfaction, and optimism as reliable reflections of adolescent psychological well-being.

## 2. Construct Reliability

Construct reliability assesses the internal consistency of items measuring each construct, using Cronbach's Alpha (CA) and Composite Reliability (CR) as key indicators. As recommended by Hair et al. (2021), values exceeding 0.70 indicate satisfactory reliability and measurement stability. Table results show that all constructs meet this criterion, with Digital Empathy (CA = 0.852; CR = 0.896), Online Identity Formation (CA = 0.837; CR = 0.883), Fear of Missing Out (CA = 0.882; CR =

0.916), Social Media Fatigue (CA = 0.874; CR = 0.902), and Mental Health (CA = 0.897; CR = 0.921) all demonstrating strong reliability. These values confirm that each construct exhibits high internal consistency, meaning the items consistently capture the same underlying dimensions of their respective variables. Consequently, the measurement model is considered robust and dependable for further structural analysis.

### 3. Discriminant Validity

Discriminant validity ensures that each construct in the model is distinct and measures a unique concept. Two approaches were used to test this: the Fornell–Larcker Criterion and the Heterotrait-Monotrait Ratio (HTMT). Based on the Fornell–Larcker criterion, the square root of each construct's AVE must exceed its correlations with other constructs, indicating that the construct shares more variance with its indicators than with other latent variables. The results show that all diagonal AVE square roots are higher than the inter-construct correlations—for example, Digital Empathy (0.82) and Mental Health (0.85)—confirming strong discriminant validity. This finding suggests that each construct captures distinct dimensions of adolescents' digital experiences, with no significant conceptual overlap among Digital Empathy, Online Identity Formation, FoMO, Social Media Fatigue, and Mental Health.

The HTMT ratio further validates discriminant distinctiveness, where all values fall below the 0.90 threshold, as recommended by Hair et al. (2021). The HTMT results range between 0.38 and 0.73, supporting the conclusion that multicollinearity or construct redundancy is absent. The highest HTMT value (0.73) occurs between FoMO and Social Media Fatigue, aligning with theoretical expectations that both constructs are interrelated yet conceptually different—FoMO reflects psychological anxiety, whereas fatigue represents emotional exhaustion. These consistent results from both criteria demonstrate that each latent variable is empirically independent, allowing the

structural model to yield valid interpretations of how digital behaviors and emotional factors interact to influence adolescents' mental health.

### 4.3 Structural Model Evaluation (Inner Model)

The structural model, or inner model, evaluation aims to analyze the hypothesized relationships among latent variables after confirming the validity and reliability of the measurement model. This stage assesses causal pathways, path coefficients, coefficients of determination ( $R^2$ ), predictive relevance ( $Q^2$ ), and effect sizes ( $f^2$ ) to determine the strength and significance of inter-variable relationships. The analysis was conducted using SmartPLS 3.0 with a bootstrapping procedure of 5,000 resamples at a 95% confidence level ( $\alpha = 0.05$ ), ensuring statistical robustness and accuracy of hypothesis testing. By employing this approach, the study examines not only direct effects between variables such as digital empathy, online identity formation, fear of missing out (FoMO), social media fatigue, and mental health but also the indirect mediating role of social media fatigue in linking FoMO with psychological outcomes.

Following Hair et al. (2021), several criteria were used to evaluate the structural model: collinearity assessment (VIF), path coefficients ( $\beta$ ), coefficient of determination ( $R^2$ ), effect size ( $f^2$ ), and predictive relevance ( $Q^2$ ). Collinearity testing ensures that the independent variables are not highly correlated, maintaining the model's statistical validity. The results show all VIF values below 5.0, confirming the absence of multicollinearity among exogenous constructs. Specifically, Digital Empathy  $\rightarrow$  Mental Health (2.112), Online Identity Formation  $\rightarrow$  Mental Health (2.035), FoMO  $\rightarrow$  Mental Health (1.951), Social Media Fatigue  $\rightarrow$  Mental Health (2.242), and FoMO  $\rightarrow$  Social Media Fatigue (1.814) all indicate acceptable independence among predictors. These findings confirm that the data are suitable for structural analysis, and the relationships among variables can be interpreted reliably within the proposed model framework.



Table 2. Path Coefficient Results and Hypothesis Testing

Hypothesis	Path	$\beta$ (Coefficient)	t- Statistic	p- Value	Result
H1	Digital Empathy $\rightarrow$ Mental Health	0.324	4.876	0.000	Supported
H2	Online Identity Formation $\rightarrow$ Mental Health	0.201	2.952	0.004	Supported
H3	FoMO $\rightarrow$ Mental Health	-0.289	4.125	0.000	Supported
H4	Social Media Fatigue $\rightarrow$ Mental Health	-0.357	5.003	0.000	Supported
H5	FoMO $\rightarrow$ Social Media Fatigue	0.436	6.121	0.000	Supported

Table 2 presents the path coefficient results and hypothesis testing outcomes, summarizing the structural relationships among the study's latent variables. All five hypothesized paths are statistically significant at  $p < 0.05$ , confirming empirical support for each proposed relationship. Digital Empathy ( $\beta = 0.324$ ,  $t = 4.876$ ,  $p = 0.000$ ) and Online Identity Formation ( $\beta = 0.201$ ,  $t = 2.952$ ,  $p = 0.004$ ) show positive and significant effects on adolescents' mental health, indicating that empathetic online behavior and authentic digital self-presentation enhance emotional stability and psychological well-being. These results align with Social Cognitive Theory and Self-Determination Theory, suggesting that empathy and authenticity fulfill adolescents' needs for relatedness and self-expression. Conversely, Fear of Missing Out (FoMO) and Social Media Fatigue (SMF) exhibit significant negative impacts on mental health, with  $\beta = -0.289$  ( $t = 4.125$ ,  $p = 0.000$ ) and  $\beta = -0.357$  ( $t = 5.003$ ,  $p = 0.000$ ), respectively, showing that higher levels of anxiety and exhaustion from excessive digital engagement lead to psychological distress and lower life satisfaction. FoMO also has a strong positive effect on SMF ( $\beta = 0.436$ ,  $t = 6.121$ ,  $p = 0.000$ ), demonstrating that fear of exclusion triggers emotional fatigue, which in turn mediates the adverse impact of FoMO on mental health.

The  $R^2$  values presented in the model indicate the explanatory power of exogenous variables on the endogenous constructs. Specifically, the  $R^2$  value for Mental Health (0.57) demonstrates a moderate to strong explanatory capability, suggesting that 57% of the variance in adolescents' mental health can be explained by Digital Empathy, Online Identity Formation, Fear of Missing Out (FoMO), and Social Media Fatigue. Similarly,

FoMO accounts for 41% of the variance in Social Media Fatigue ( $R^2 = 0.41$ ), reflecting a moderate predictive strength. According to Chin (1998),  $R^2$  values of 0.19, 0.33, and 0.67 correspond to weak, moderate, and substantial explanatory power, respectively. Therefore, the model's obtained  $R^2$  values confirm that it is sufficiently robust in explaining mental health outcomes among adolescents in the digital context.

The effect size ( $f^2$ ) analysis further elaborates the relative influence of each exogenous variable on its respective endogenous construct. Based on Cohen's (1988) interpretation,  $f^2$  values of 0.02, 0.15, and 0.35 indicate small, medium, and large effects, respectively. The results reveal that FoMO has the largest impact on Social Media Fatigue ( $f^2 = 0.28$ ), marking it as the strongest predictor of digital exhaustion. Social Media Fatigue also exerts a substantial effect on Mental Health ( $f^2 = 0.22$ ), indicating that emotional exhaustion significantly deteriorates adolescents' psychological well-being. Meanwhile, Digital Empathy ( $f^2 = 0.14$ ) and FoMO ( $f^2 = 0.17$ ) display medium effects on Mental Health, while Online Identity Formation ( $f^2 = 0.08$ ) shows a small-to-medium influence. These findings underscore that while empathy and identity management contribute positively to mental health, FoMO and fatigue remain the most dominant negative predictors in the model.

Predictive relevance ( $Q^2$ ) and model fit indices confirm the model's overall adequacy and predictive accuracy. The Stone-Geisser  $Q^2$  values of 0.39 for Mental Health and 0.26 for Social Media Fatigue exceed zero, indicating strong and moderate predictive relevance, respectively, and validating the model's capability to predict psychological

outcomes based on adolescents' digital behaviors. Furthermore, the Standardized Root Mean Square Residual (SRMR) value of 0.063 is below the acceptable threshold of 0.08 (Henseler et al., 2015), signifying a good model fit. Collectively, these results affirm that the structural model effectively captures the complex interplay among digital empathy, online identity formation, FoMO, and social media fatigue in explaining adolescent mental health within the context of West Java's digital ecosystem.

### Discussion

The results show that digital empathy has a positive and significant effect on adolescent mental health, indicating that those who can understand and respond to others' emotions in online settings experience higher psychological well-being, stronger social belonging, and fewer symptoms of anxiety or alienation. This aligns with Social Cognitive Theory [28], which posits that prosocial behaviors are learned through observation and reinforcement. Empathetic adolescents tend to mirror positive emotional expressions found online, promoting harmony and stability. Prior studies by [1], [2] also suggest that digital empathy enhances emotional literacy and shields users from negative online interactions such as cyberbullying or exclusion. In West Java, where collectivist values emphasize respect (*hormat*) and mutual support (*gotong royong*), empathy-based digital interactions are culturally consistent, providing adolescents with a sense of connection that bridges both physical and online communities. Thus, digital empathy functions as both a protective factor and a crucial component of digital literacy education.

Online identity formation also exhibits a positive and significant relationship with mental health. Adolescents who manage their self-presentation authentically on social media tend to feel more confident, accepted, and emotionally balanced. This supports the findings of [3], [5], who view online identity construction as part of adolescent psychosocial growth that enables self-expression and experimentation. However,

when identity becomes dependent on external validation through likes and followers, it can lead to psychological strain—echoing Erikson's (1968) theory of identity versus role confusion. In the sociocultural context of West Java, where traditional norms often coexist with digital self-expression, adolescents face the challenge of maintaining authenticity while seeking social approval. Structured guidance on responsible self-disclosure and identity management can help them sustain a healthy sense of self and avoid performance anxiety in online spaces.

Fear of Missing Out (FoMO) emerges as a significant negative predictor of mental health and a positive predictor of social media fatigue. Adolescents experiencing FoMO frequently engage in compulsive checking behavior, fear social exclusion, and report dissatisfaction with offline experiences. Consistent with Self-Determination Theory (Deci & Ryan, 2000), FoMO occurs when basic psychological needs—autonomy, competence, and relatedness—are unmet. Constant exposure to others' activities fuels inadequacy and dependency on social approval, leading to emotional exhaustion. Studies by [21], [22], [29] affirm that high FoMO correlates with anxiety and depressive symptoms. In Indonesia's collectivist society, where belonging and responsiveness are socially valued, FoMO may intensify due to expectations of constant connectivity, reinforcing its role as a psychosocial stressor that undermines well-being.

Social media fatigue further demonstrates a negative and significant effect on adolescent mental health and mediates the relationship between FoMO and psychological outcomes. This form of fatigue—manifested through exhaustion, irritability, and information overload—is consistent with findings by [20], [30], who describe it as a consequence of social comparison and digital overstimulation. In the West Java context, dominated by visual platforms such as Instagram and TikTok, adolescents experience continuous emotional and cognitive strain that heightens fatigue. The mediation analysis supports [29], [30], identifying fatigue as the emotional

consequence of FoMO-driven overuse. Thus, social media fatigue operates as both a warning signal and a behavioral outcome of digital imbalance. Collectively, the predictors—digital empathy, online identity formation, FoMO, and social media fatigue—explain 57% of the variance in mental health, highlighting that adolescent well-being in the digital era results from a complex interplay of emotional awareness, identity management, and behavioral regulation.

### **Practical Implications**

The findings carry several practical implications for diverse stakeholders in promoting adolescents' digital well-being. Educational institutions should integrate digital empathy training and mental health awareness into school curricula, fostering reflective discussions that help students manage emotions and reduce FoMO tendencies. Parents and families are encouraged to maintain open communication about online experiences and support healthy media habits through screen time limits and digital detox practices. Government and policymakers, particularly in West Java, should develop digital literacy programs that emphasize emotional intelligence, responsible online identity management, and psychological resilience. Meanwhile, community and peer groups can play a pivotal role by organizing peer-led digital well-being initiatives that model empathetic interactions and promote authenticity and self-acceptance. Collectively, these efforts can cultivate a balanced digital culture that supports adolescents' mental health in an increasingly connected society.

### **Theoretical Implications**

This study advances theoretical understanding in digital psychology by integrating constructs that have often been examined independently, demonstrating their interrelated influence on adolescent mental health. The findings validate that digital empathy functions not merely as a social skill but as a form of emotional capital that protects individuals from digital stress; online identity formation represents a

dynamic process shaped by cultural, psychological, and technological factors; and Fear of Missing Out (FoMO) acts as both an antecedent and an amplifier of social media fatigue, forming a mediating chain that contributes to mental distress. Together, these insights highlight the necessity of developing multidimensional models of digital well-being that encompass emotional regulation, identity construction, and digital self-control as core determinants of psychological resilience among adolescents in the digital era.

## **5. CONCLUSION**

This research provides empirical evidence on the psychological dynamics of adolescents' digital behavior in West Java by examining the effects of digital empathy, online identity formation, Fear of Missing Out (FoMO), and social media fatigue on mental health. Using the SEM-PLS approach with 175 adolescent respondents, the study reveals a multidimensional model in which both positive and negative digital experiences collectively shape psychological well-being. The findings confirm that digital empathy and authentic online identity formation serve as protective psychological factors, fostering emotional stability, connectedness, and resilience in online environments. Conversely, FoMO and social media fatigue act as significant risk factors that contribute to anxiety, cognitive strain, and diminished mental health. The mediating role of social media fatigue demonstrates how excessive digital engagement transforms social anxiety into emotional exhaustion, further reducing psychological well-being among adolescents.

Theoretically, this study extends Social Cognitive Theory, Self-Determination Theory, and Uses and Gratifications Theory by integrating emotional, cognitive, and behavioral dimensions of digital interaction into a unified framework of adolescent mental health. Practically, the findings highlight the importance of digital literacy and mental health programs that emphasize empathy, authenticity, and emotional regulation. For policymakers, educators, and parents, the

results underscore the need to promote balanced digital engagement through structured learning, reflective online behavior, and open communication. Implementing community-based digital well-

being initiatives and encouraging mindful technology use can help adolescents harness the benefits of social media while safeguarding their mental and emotional health.

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