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Examining the Mediating Role of Subjective Well-Being in the Relationship Between Smartphone Addiction, Social Media Intention, and Students' School Engagement

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Abstract

In the contemporary digital era, the pervasive impact of rapid technological advancements on human civilization, particularly among students, has prompted inquiries into its positive or negative implications. This research endeavours to scrutinize the mediating role of subjective wellbeing (SWB), encompassing facets such as life satisfaction, positive affect, and negative affect, in the nexus between smartphone addiction, social media intention, and student school engagement. The study was conducted across two educational institutions in Indonesia, namely Permata Indonesia Health Polytechnic and Yogyakarta Mercu Buana University, encompassing 204 students (93 male and 111 female), aged 20-30, actively participating in remote learning during the pandemic. Data were collected through an online survey employing a Likert scale measuring instrument encompassing smartphone addiction, social media intention, school engagement, life satisfaction, positive affect, and negative affect. Analysis of the data utilized path analysis and Structural Equation Modelling (SEM) with the SMARTPLS program. The findings reveal that all constituents of subjective wellbeing exert a direct and substantial influence on students' school engagement. Additionally, smartphone addiction manifests a significant impact on all components of subjective wellbeing, while social media intention significantly affects each element of subjective wellbeing. Furthermore, the study establishes a significant correlation between social media intention and students' school engagement. Notably, life satisfaction and positive affect within the realm of subjective wellbeing emerge as pivotal mediators in the association between smartphone addiction, social media intention, and students' school engagement. Intriguingly, no significant relationship was discerned between smartphone addiction and students' school engagement. The study posits a moderate categorization for the contributions of smartphone addiction, social media intention, and SWB in predicting students' school engagement. This research augments comprehension regarding the mediating role of subjective wellbeing concerning smartphone addiction and social media usage in shaping students' academic engagement. The implications underscore the necessity for fostering healthy smartphone and social media practices among college students to fortify their academic commitment and accomplishments.

Keywords: Student's School Engagement, Smartphone Addiction, Social Media Intention, Subjective Wellbeing.

1. Introduction

The rapid integration of technology into daily life has ushered human civilization into the digital era, wherein smartphones and social media assume significant roles, particularly among college students. The pervasive adoption of these technologies has the potential to influence campus engagement both positively and negatively. Anderson and Rainie's (2012) investigation delved into the question of whether the utilization of smartphones and social media yields benefits in terms of enhancing social connections and facilitating access to information. In their 2011 survey, Anderson and Rainie engaged experts to deliberate on the future of the internet in 2020. The findings projected a continuous interconnectivity among the younger generation, facilitated by a mobile web characterized by agility, speed, accuracy, and multitasking capabilities. Approximately 55% of experts expressed optimism, anticipating a positive impact on connectedness to the mobile web, while the remaining 45% foresaw potential negative repercussions.

Lin et al. (2014) indicated among the adverse consequences associated with the utilization of smartphones and social media is the phenomenon of smartphone addiction, which has the potential to disrupt both academic pursuits and social interactions among students. According to Billieux et al. (2015), and Demirci, Akgönül, and Akpinar (2015) smartphone addiction denotes a state wherein an individual exhibits a heightened dependency on extensive smartphone usage, thereby exerting a notable influence on their daily routines and impinging upon their subjective wellbeing. Subjective wellbeing, in this context, encompasses an individual's sentiments of happiness, contentment, and ease within their life, serving as a crucial gauge of their mental health status (Diener, 2000; Ryan & Deci, 2001; Seligman & Csikszentmihalyi, 2000).

The surplus utilization of smartphones among students may impede subjective wellbeing through various channels. Initially, the extensive use of smartphones can curtail face-to-face social interactions, constraining the potential for cultivating interpersonal bonds. Consequently, this restriction may give rise to sentiments of loneliness and social isolation, thereby diminishing overall subjective wellbeing (Lepp, Barkley, & Karpinski, 2015). Furthermore, an excess of smartphone usage

constitutes a second avenue through which it can detrimentally impact student subjective wellbeing. This is evidenced by the potential emergence of mental health issues such as depression and anxiety, as demonstrated by Alhassan et al. (2018). Additionally, this heightened smartphone engagement is associated with disruptions in sleep patterns, diminishing sleep quality among students, as articulated by Demirci et al. (2015). Lastly, the protracted use of smartphones introduces a third dimension of interference, notably compromising students' focus and concentration on academic responsibilities, thereby contributing to suboptimal academic performance and outcomes (Boumosluh & Jaalouk, 2018; Duke & Montag, 2017). This, in turn, may lead to diminished academic satisfaction and success (Fuchsova & Stetina, 2018), along with a reduction in student engagement (Junco & Cotten, 2012). Hence, comprehending the nexus between smartphone addiction and student subjective wellbeing is crucial for fostering mental health. In the proposed research, subjective wellbeing serves as a mediating variable, exploring its impact amidst smartphone addiction, social media usage intent, and campus involvement.

Al-Rahmi and Othman (2013) inferred that the inclination or motivation to use social media holds sway over student participation within the academic domain. Social media intention, in this context, is construed as an individual's purpose or drive in employing social media platforms. A positive intention to use social media, encompassing activities such as accessing assignment-related information, coordinating school events, or communicating with peers, stands poised to augment student engagement within the school setting.

Numerous research endeavours have demonstrated that purposeful and advantageous utilization of social media contributes to heightened satisfaction and increased engagement among students within the educational sphere. Conversely, the inadvertent use of social media solely for recreational purposes can impede student involvement in the learning process. For instance, Madge et al. (2009) investigation in the context of British university education revealed that students employing social media for educational purposes exhibited greater participation in school-related activities, including active engagement in class discussions, school events, and interactions with both educators and peers. In contrast, students utilizing social media

primarily for entertainment or leisure purposes displayed diminished involvement in the learning process. An additional inquiry conducted by Wang, Chen, and Liang (2011) reveals a positive correlation between the intent to utilize social media for constructive academic objectives and student academic engagement. Conversely, the intent to employ social media for recreational or social interaction purposes demonstrates a negative correlation with student academic engagement.

In light of the aforementioned research findings, it is deduced that social media intention significantly influences students' academic engagement. A positive intent in utilizing social media enhances involvement in the learning process, positively impacting academic success. Consequently, students are advised to conscientiously contemplate the purpose of their social media usage, striving for a constructive utilization that contributes to their academic achievements.

This study aims to elucidate the interplay between smartphone addiction and student subjective well-being, emphasizing its significance for mental health promotion. Subjective well-being will serve as a mediating variable in the nexus of smartphone addiction, social media intent, and campus engagement. Anticipated outcomes aim to contribute to theoretical frameworks linking smartphone addiction, social media intent, subjective well-being, and academic performance. Insights gleaned from research on student engagement can inform universities and educators in formulating programs to enhance academic achievement. Consequently, the study aspires to provide counsel and recommendations for students, parents, and educational institutions on fostering healthy smartphone and social media usage.

2. Literature Review and Hypotheses

2.1. School Engagement

Student engagement in the educational context denotes the extent of participation and active involvement exhibited by students in both academic and extracurricular activities orchestrated by universities. This involvement encompasses active participation in lecture-based activities, utilization of university resources and facilities, engagement in extracurricular pursuits, and interactions or collaborations

with both lecturers and peers. Within the tertiary framework, students demonstrating active participation in such activities stand to benefit from a more enriched and diversified learning experience. Furthermore, they are poised to cultivate a broader spectrum of social and professional skills essential for their preparation for post-graduation careers and life endeavours.

Fredericks, Blumenfeld, Friedel, and Paris (2005) define school engagement as "students' active involvement in academic and non-academic activities at school that promotes their learning and personal development." They introduced the School Engagement Scale (SES), comprising three dimensions: Behavioural Engagement (student participation in academic and extracurricular activities), Emotional Engagement (positive feelings towards school, teachers, and peers), and Cognitive Engagement (mental effort in academic work, including learning interest, motivation, problem-solving, and critical thinking). Li and Lerner (2011) underscored that cognitive engagement gauges students' involvement in the learning process and cognitive development.

In accordance with scholarly perspectives, active participation in school activities holds significance for academic attainment, personal maturation, and holistic well-being. Enhanced school engagement correlates with heightened academic success, improved social competencies, and increased life satisfaction among students. Hence, it is imperative for educators and policymakers to foster a nurturing and stimulating learning milieu that fosters and encourages robust student engagement.

Various factors shape students' school engagement, including teaching quality, interactions with peers and lecturers, institutional support, and individual motivation. Smartphone addiction is a notable influencer, adversely affecting students' participation in learning activities. Empirical evidence suggests that excessive smartphone use hampers concentration, diminishing overall school engagement.

An investigation conducted by Junco and Cotten (2012) reveals that an overindulgence in smartphone usage can disrupt dedicated study time and consequently diminish students' learning productivity. Furthermore, a separate study by Lepp et al. (2015) underscores that the excessive use of smartphones is associated with a decline in students' capacity for critical and analytical thinking, pivotal components of their engagement in academic endeavours.

2.2. Subjective Well-Being

Subjective well-being, often denoted as SWB, refers to an individual's overall happiness, life satisfaction, and positive emotional experiences. Operationally, subjective well-being is characterized by a person's cognitive and affective assessment of their life, encompassing emotional responses to events and cognitive judgments pertaining to satisfaction and fulfilment (Diener, 2000). According to Diener et al. (1999) and Lyubomirsky, King, and Diener (2005), subjective well-being is composed of three primary components: life satisfaction, positive affect, and negative affect (representing negative emotions). Diener (2000) and Pavot and Diener (2008) contend that life satisfaction pertains to an individual's comprehensive evaluation of their overall life. Typically gauged through questionnaires or interviews utilizing rating scales, respondents are prompted to assess their life in its entirety. Positive affect involves the encounter with positive emotions like joy, happiness, and contentment. Assessment of positive affect is conducted by inquiring about the emotional experiences within a specific timeframe, such as a day or week. Conversely, negative affect involves the experience of negative emotions like sadness, anxiety, and anger. Measurement of negative affect similarly involves questioning individuals about their emotional experiences during a specified period (Watson, Clark, & Tellegen, 1988).

These three dimensions exhibit interconnections and reciprocal influences. Individuals with elevated life satisfaction levels tend to concurrently experience heightened positive affect and diminished negative affect. Conversely, those with diminished life satisfaction levels are inclined to manifest reduced positive affect and heightened negative affect (Diener, 2000; Pavot & Diener, 2008). Diener (2013) underscores the importance of a comprehensive measurement of subjective well-being (SWB) to gain a nuanced understanding. SWB is assessed through three dimensions, allowing insight into the interplay of life satisfaction, positive emotions, and negative emotions, contributing to an individual's well-being (Kahneman & Krueger, 2006; Ryan & Deci, 2001). Busseri and Sadava (2011) similarly advocate for the measurement of SWB using these three dimensions. They propose that the comprehensive depiction and comprehension of subjective well-being (SWB) can be facilitated by these three dimensions. Consequently, this study examines each component individually,

considering them as variables mediating the association between smartphone addiction and social media intention with student school engagement.

2.3. Smartphone Addiction

The escalating prevalence of smartphone addiction, particularly among adolescents and young adults, constitutes a burgeoning mental health concern (Lin et al., 2016). Ifeanyi & Chukwuere (2018) Derived from their investigation, the majority of undergraduate students employ smartphones for interactions with peers and instructors. Additionally, it was observed that smartphone usage acts as a distraction in certain facets of students' academic pursuits. The findings further illuminate the repercussions of smartphone use on students' academic competencies and developmental trajectories. According to Kwon et al. (2013b), Smartphone addiction is characterized by an individual's pronounced and excessive proclivity for continuous smartphone usage, leading to disruption in various aspects of their daily existence, encompassing professional responsibilities, educational commitments, interpersonal relationships, and physical activities.

Drawing insights from the perspectives of the aforementioned experts, it is discerned that smartphone addiction manifests as an excessive reliance on smartphone usage. This dependency is typified by symptoms including challenges in restricting the duration of smartphone use, experiencing anxiety or discomfort when not utilizing the smartphone, and assigning greater priority to smartphone use over activities that should hold greater significance.

Kwon et al. (2013b) assess the degree of smartphone addiction among adolescents and young adults. This scale encompasses dimensions such as excessive usage, challenges in controlling usage, and withdrawal symptoms when abstaining from smartphone use. The findings of this study underscore the escalating nature of smartphone addiction in contemporary society, emphasizing the imperative for attention in public health initiatives.

Smartphone addiction negatively impacts school engagement by diminishing students' involvement in learning activities. Studies by Lepp et al. (2015) and Junco

and Cotten (2012) confirm that excessive smartphone use hampers critical thinking, disrupts study time, and reduces learning productivity.

Kwon et al. (2013a) developed and validated a concise iteration of the Smartphone Addiction Scale (SAS-SV), abbreviated as the SAS-SV. This shortened scale serves as a measurement instrument for assessing an individual's level of smartphone addiction. Luk et al. (2018) conducted an evaluation of the psychometric properties, sociodemographic correlations, and health behaviours associated with the SAS-SV in a Chinese adult population, comprising 1,317 participants. The results demonstrated that the abbreviated SAS-SV exhibited commendable reliability and validity in gauging smartphone addiction. Additionally, the study revealed a significant association between smartphone addiction and various sociodemographic factors, including age, gender, marital status, and education, underscoring the broader social context influencing smartphone addiction.

Succeeding investigations indicate that the excessive utilization of smartphones can impact individual subjective well-being, consequently influencing the extent of student engagement in educational pursuits. Individuals experiencing discontent or dissatisfaction with their lives may exhibit reduced motivation to participate in school activities, including academic endeavours. A study by Kim, Lee, and Chun (2017) demonstrated that subjective well-being serves as a mediating factor in the association between excessive smartphone use and students' academic engagement. The research revealed a negative correlation between excessive smartphone use and both subjective well-being and academic engagement, with subjective well-being mediating this relationship.

2.4. Social Media Intentions

As posited by Safdari et al. (2020), Social Media Intention emerges as a significant determinant impacting both the utilization of social media and user contentment, as well as the intention to sustain social media usage. Social Media Intention is construed as an individual's deliberate inclination or aspiration to engage with social media, encapsulating the underlying objectives or motivations driving one's utilization of social media platforms.

Al-Harrasi, Al-Badi, and Al-Badi (2017) addressing both social and individual needs markedly shapes the inclination to engage with these platforms. Thus, an enhanced comprehension of social media usage intentions holds the potential to inform the design of improved user experiences and foster more positive social interactions within the realm of social media. The speaker additionally underscored the multifaceted influences on social media intention, encompassing social, psychological, and demographic factors, exemplified by perceived usefulness (individual perceptions regarding the utility of social media), perceived ease of use (individual perceptions regarding the user-friendliness of social media), subjective norms, and attitudes towards the utilization of social media (Al-Harrasi, Al-Badi, & Al-Badi, 2017).

Yu and Wu's (2017) research delves into Social Media Intention, characterizing it as an individual's deliberate inclination to use social media for specific objectives, including communication, relationship-building, and information-seeking. Their findings highlight the substantial impact of Social Media Intention on usage behaviour and user satisfaction. Moreover, the study underscores the influence of personality, social dynamics, and environmental factors on both Social Media Intention and subsequent usage behaviour. These insights underscore the significance of comprehending Social Media Intention in enhancing user experiences and fostering increased social interactions on these platforms.

In his study, Sari (2021) demonstrates two key findings: (1) Social Media Intention exerts an influence on the extent of student engagement in academic pursuits, and (2) purposeful and regulated utilization of social media contributes to heightened social support from peers and parents, thereby reinforcing student participation in academic activities. Conversely, unregulated and ambiguous use of social media is identified as a potential disruptor, impinging upon students' engagement in academic endeavours and even diminishing their academic accomplishments.

Lee et al. (2020) present findings indicating a significant correlation between Social Media Intention and School Engagement—a pivotal indicator of student motivation and involvement in the academic setting. Notably, their study reveals that the Self-Determination Theory, which elucidates motivational factors and individual

psychological needs, may act as a moderator in the relationship between Social Media Intention and School Engagement. Consequently, this research underscores the significance of comprehending the psychological determinants steering social media usage and their impact on student engagement within the educational domain. Furthermore, Lee et al. (2020) posit that Subjective Well-Being can serve as a mediating variable in the association between Social Media Intention and Students' School Engagement, reinforcing the proposition that social media use can influence individual well-being, which in turn affects student involvement in school.

The outcomes of the literature review, culminating in the formulation of the proposed hypothesis, are graphically represented in Figure 1 and can be articulated as follows:

H1. *Smartphone Addiction negatively and directly influence student's School engagement.*

H1a. *Smartphone Addiction negatively and directly influence student's Positive Affect.*

H1b. *Smartphone Addiction negatively and directly influence student's Life Satisfaction.*

H1c. *Smartphone Addiction positively and directly influence student's Negative Affect.*

H2. *Social Media Intention positively and directly influence student's School engagement.*

H2a. *Social Media Intention positively and directly influence student's Positive Affect.*

H2b. *Social Media Intention positively and directly influence student's Life Satisfaction.*

H2c. *Social Media Intention positively and directly influence student's Negative Affect.*

H3a. *The Positive-Affect SWB component positively and directly influences student's school engagement.*

H3b. *The Life-Satisfaction SWB component positively and directly influences student's school engagement.*

H3c. *The Negative-Affect SWB component positively and directly influences student's school engagement.*

H4a. *The Positive-Affect SWB component has a mediating role in the relationship between smartphone addiction and students' school engagement.*

H4b. *The Life-satisfaction SWB component has a mediating role in the relationship between smartphone addiction and students' school engagement.*

H4c. *The Negative-Affect SWB component has a mediating role in the relationship between smartphone addiction and students' school engagement.*

H5a. *The Positive-Affect SWB component has a mediating role in the relationship between social media intention and students' school engagement.*

H5b. *The Life-satisfaction SWB component has a mediating role in the relationship between social media intention and students' school engagement.*

H5c. *The Negative-Affect SWB component has a mediating role in the relationship between social media intention and students' school engagement.*

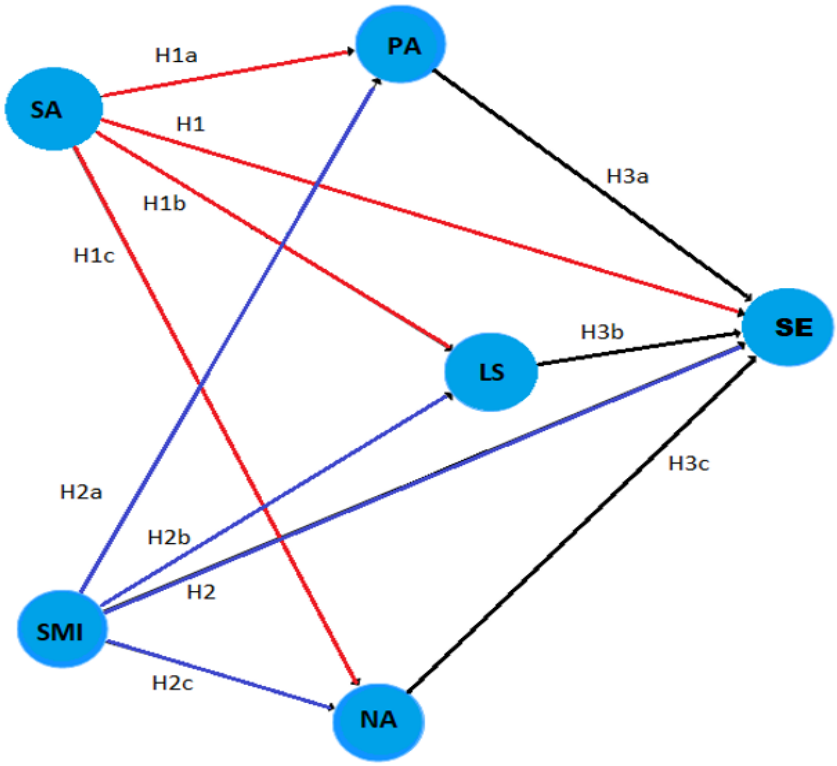

Figure 1. Research Model.

3. 3. Method and Procedure

3.1. Research Variables and Measurements

The assessment of students' school engagement employs the School Engagement Scale (SES), comprising three dimensions—behavioural engagement, emotional engagement, and cognitive engagement—comprising a total of 14 items. Utilizing the same metric, Smartphone addiction is gauged through the short version of the Smartphone Addiction Scale (SAS-SV), a tool initially developed and utilized by Luk et al. (2018) among adult respondents in China.

In this investigation, social media intention was assessed utilizing a scale comprising 20 items pertaining to the utilization of social networking sites amid the COVID-19 pandemic. This scale, crafted by Khan et al. (2022), encompasses six

constructs, namely informativeness, education, entertainment, shopping, outreach, and social causes. Subjective wellbeing was gauged through two measurement tools: (1) The cognitive facet of subjective wellbeing, denoted as life satisfaction, was evaluated using The Satisfaction with Life Scale (SWLS) introduced by Diener et al. (1985), and (2) The affective components of subjective wellbeing, encompassing positive affect and negative affect, were measured through the Positive and Negative Affect Schedule (PANAS), a scale devised by Watson et al. (1988).

3.2. Method

This research conducted a survey involving students from two universities in Yogyakarta, namely the Permata Indonesia Health Polytechnic and Mercu Buana University, Yogyakarta, Indonesia. A questionnaire, comprising six measurement scales, was formulated and disseminated to students across diverse majors through online platforms. A total of 204 responses were gathered from willing participants. The assessment of measurement validity and reliability was carried out using SmartPLS 3.0.

4. Results

The criteria for evaluating convergent validity involve ensuring that the outer loading factor of each construct attains a minimum value of 0.7, with Ghozali (2014) permitting a tolerance for values between 0.5 and 0.7, and advocating exclusion if the value falls below 0.4. Additionally, convergent validity necessitates that the Average Variance Extracted (AVE) attains a minimum value of 0.5. The findings reveal that all constructs in the study adhere to these standards, with loading factors ranging from 0.570 to 0.884, as depicted in Table 3 Simultaneously, all measurements satisfied the Fornell-Larcker and Cross Loading Discriminant Validity criteria, as detailed in Table 4. The AVE values spanned from 0.567 to 0.686. Reliability assessment of the instrument utilized both Composite Reliability and Cronbach's Alpha. The Composite Reliability values, ranging from 0.865 to 0.919, surpassed the stipulated minimum standard of 0.7. Cronbach's Alpha values, observed in Table 5, ranged from 0.786 to 0.900. Additionally, Collinearity Statistics indicated VIF values below 5, spanning from 1.000 to 2.873.

Table 1: Outer Loadings.

Variable	LS	NA	PA	SA	SE	SMI
ls1	0.699					
ls2	0.842					
ls3	0.770					
ls4	0.570					
ls5	0.847					
na1		0.745				
na10		0.793				
na2		0.697				
na3		0.756				
na4		0.818				
na7		0.718				
na8		0.778				
na9		0.816				
pa10			0.774			
pa2			0.884			
pa3			0.658			
pa4			0.834			
pa5			0.681			
pa6			0.688			
pa7			0.687			
pa8			0.750			
sa4				0.827		
sa5				0.827		
sa6				0.837		
sa7				0.822		
se1					0.757	
se10					0.795	
se14					0.713	
se7					0.749	
se9					0.782	
smi14						0.716
smi18						0.773
smi19						0.677
smi20						0.805

Note: SA: Smartphone Addiction, SMI: Social Media Intention, PA: Positive Affect, NA: Negative Affect, LS: Life Satisfaction, SE: School Engagement

Table 2: Coefficient Reliability & Average Variance Extracted (AVE).

Variable	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
LS	0.805	0.852	0.865	0.567
NA	0.900	0.908	0.919	0.587
PA	0.887	0.912	0.910	0.560
SA	0.848	0.850	0.897	0.686
SE	0.817	0.818	0.872	0.577
SMI	0.786	0.788	0.853	0.538

Note: SA: Smartphone Addiction, SMI: Social Media Intention, PA: Positive Affect, NA: Negative Affect, LS: Life Satisfaction, SE: School Engagement

Table 3: Discriminant Validity: Fornell-Larcker Criterion.

Variable	LS	NA	PA	SA	SE	SMI
LS	0.753					
NA	-0.585	0.766				
PA	0.662	-0.560	0.749			
SA	-0.288	0.390	-0.247	0.828		
SE	0.396	-0.192	0.468	-0.076	0.760	
SMI	0.195	-0.130	0.324	0.065	0.446	0.734

The hypotheses were assessed through partial least squares structural equation modelling. The model evaluation, as indicated in Table 5, suggests adequacy as the Standardized Root Mean Square is below 0.10. However, the NFI stands at 0.559, falling short of the recommended threshold of 0.9.

Table 4: Model Fit Summary.

	Saturated Model	Estimated Model
SRMR	0.096	0.159
d_ULS	5,824	15,947
d_G	2,453	2,681
Chi-Square	2325,753	2485,536
NFI	0.559	0.528

The outcomes of the structural equation modelling, as illustrated in Figure 1, yield the following conclusions: (1) Each component of subjective wellbeing exerts a direct and statistically significant impact on students' school engagement. (2)

Smartphone addiction influences all components of subjective wellbeing. (3) No statistically significant association was identified between smartphone addiction and students' school engagement. (4) Social media intention significantly influences all components of subjective wellbeing. (5) A confirmed and significant influence is observed, indicating the impact of social media intention on students' school engagement. (6) With the exception of the negative affect component, both life satisfaction and positive affect components of subjective wellbeing exhibit a significant mediating role in the relationship between smartphone addiction and social media intention with students' school engagement. Further elaboration is provided in the subsequent explanation:

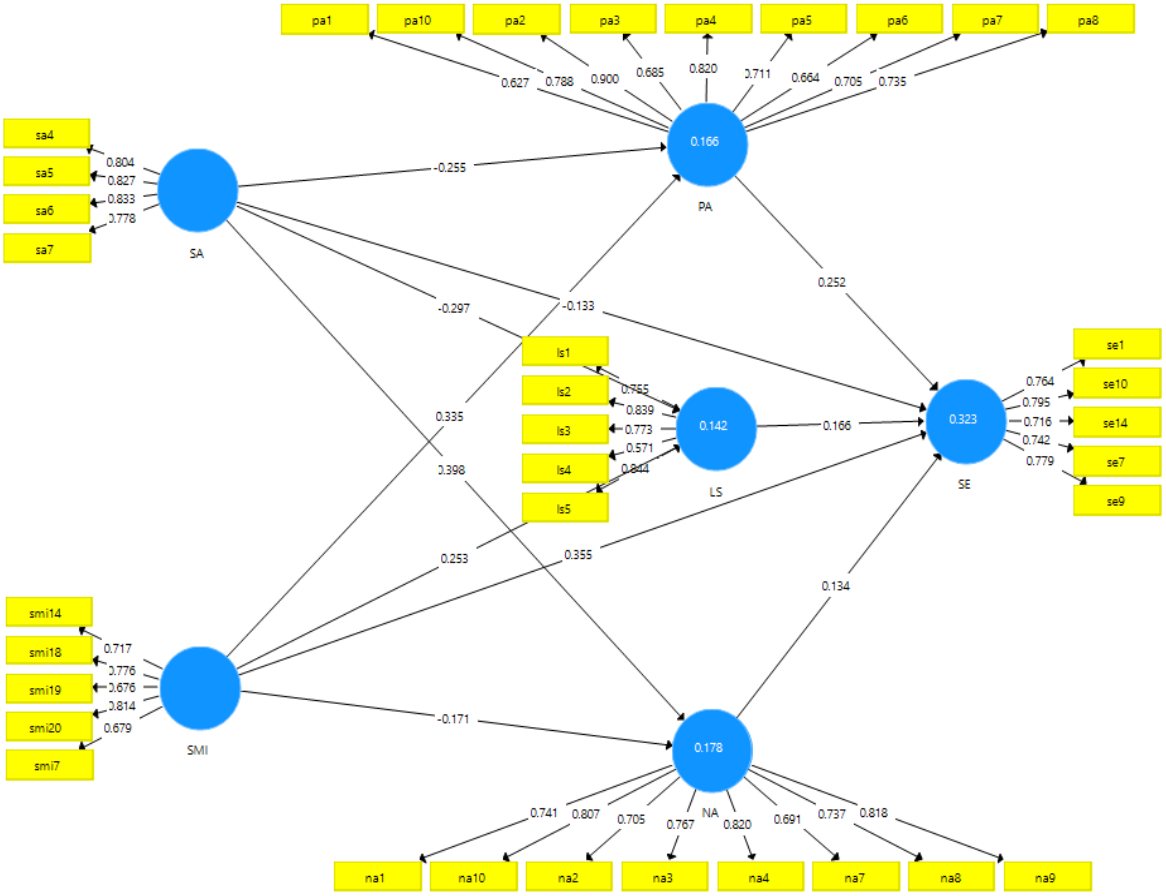

Figure 1: Structural Equation Model.

The coefficients and significance of each path analysis are presented in Table 5. The results of this analysis indicate that all the hypothesized constructs exhibit significant coefficients, with the exception of the impact of smartphone addiction on students' school engagement, which is deemed insignificant

Table 5: Path Coefficient of Research Variables.

Hypothesis	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
LS -> SE	0.218	0.222	0.090	2,419	0.016
NA -> SE	0.154	0.156	0.074	2,067	0.039
PA -> SE	0.298	0.302	0.090	3,299	0.001
SA -> LS	-0.302	-0.307	0.071	4,263	0.000
SA -> NA	0.400	0.407	0.067	6,006	0.000
SA -> PA	-0.269	-0.274	0.068	3,933	0.000
SA -> SE	-0.021	-0.021	0.071	0.298	0.766
SMI -> LS	0.215	0.224	0.064	3,347	0.001
SMI -> NA	-0.156	-0.160	0.072	2,166	0.031
SMI -> PA	0.341	0.350	0.057	6,003	0.000
SMI -> SE	0.329	0.333	0.072	4,545	0.000

Meanwhile, an examination of the impact of mediating variables on subjective wellbeing is elucidated through the calculation of the Specific Indirect Effect of Smartphone Addiction and Social Media Intention on Students' School Engagement via Subjective Wellbeing, as delineated in Table 8. Among all the components of subjective wellbeing, solely the Negative-affective component fails to exhibit a significant mediating role in the relationship between Smartphone Addiction and Social Media Intention vis-à-vis Students' School Engagement. Conversely, the cognitive component of subjective wellbeing, life satisfaction, and the affective component, positive affect, are shown to play a significant mediating role in this relationship.

Table 6: Specific Indirect Effect of SA & SMI to Students' SE through SWB.

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistic (|O/STDEV|)	P Values
SA -> LS -> SE	-0.066	-0.068	0.033	1,999	0.046
SMI -> LS -> SE	0.047	0.048	0.024	1,993	0.047
SA -> NA -> SE	0.061	0.064	0.033	1,866	0.063
SMI -> NA -> SE	-0.024	-0.025	0.018	1,329	0.184
SA -> PA -> SE	-0.080	-0.084	0.035	2,318	0.021
SMI -> PA -> SE	0.101	0.106	0.037	2,726	0.007

The combined contribution of smartphone addiction, social media intention, and the three components of SWB in predicting students' school engagement amounts to 34.4%. Further breakdown reveals that smartphone addiction and social media intention contribute 12.9%, 17.7%, and 17.6% to the prediction of the individual SWB components—namely, Life Satisfaction, Positive Affect, and Negative Affect, respectively

Table 7: R Square.

	R Square	R Square Adjusted
LS	0.129	0.120
NA	0.176	0.168
PA	0.177	0.168
SE	0.344	0.328

5. Discussion

The six measurement instruments employed in this study to assess the constructs of school engagement, smartphone addiction, social media intention, life satisfaction, positive affect, and negative affect have demonstrated both convergent and discriminant validity. Moreover, they have been established as reliable through the application of Cronbach's alpha and composite coefficients for reliability. In the context of the Structural Equation Model hypothesized in this study, it can be affirmed that it meets the criteria for Goodness of Fit. Consequently, the analytical results obtained using SMART-PLS can be deemed reliable, adhering to robust psychometric standards.

The analysis revealed that all components of subjective wellbeing (life satisfaction, positive affect, and negative affect) exert a direct and statistically significant influence on students' school engagement. This finding aligns with prior research, such as the study by Suldo, Thalji, and Ferron (2011), which indicates that happiness and life satisfaction positively impact students' academic achievements and involvement in school activities over the long term. Conversely, psychopathology and mental health status exhibit a negative and significant relationship with student academic results. In summary, this article underscores the significance of subjective wellbeing as a crucial predictor of student academic outcomes. These insights suggest

the need to incorporate considerations of subjective wellbeing in initiatives aimed at enhancing student academic achievements, thereby offering vital implications for the development of school programs focused on fostering students' wellbeing and improving their academic outcomes.

An intriguing finding in this study is the observed low positive coefficient of negative affect on school engagement, contrary to the hypothesis that higher levels of negative affect among students would correspond to lower levels of involvement in school activities. This divergence may be attributed to the influence of additional factors affecting the relationship between negative affect and school engagement, particularly given the pandemic context in which the research was conducted. The pandemic situation can induce heightened stress and anxiety among students, impacting their level of engagement in school activities. However, resilience factors may also play a pivotal role in this relationship. Students with higher resilience are better equipped to navigate challenges and stress during a pandemic, enabling them to maintain a heightened level of involvement in school activities despite experiencing negative affect (Connor & Davidson, 2003). Consequently, future research that incorporates the resilience factor into the exploration of the relationship between negative affect and school engagement can offer a more comprehensive understanding of the factors influencing students' participation in school activities, particularly amid the current pandemic scenario.

The study revealed that smartphone addiction impacts all aspects of subjective well-being. The results align with the hypothesis, indicating that life satisfaction and positive affect negatively and significantly influence smartphone addiction, whereas negative affect has a positive and significant effect on smartphone addiction. In essence, higher life satisfaction and positive affect correspond to lower smartphone addiction, while elevated negative affect is associated with increased smartphone addiction. These findings support Samaha and Hawi (2016) assertion that smartphone and social media addiction negatively correlates with self-esteem and subjective well-being, particularly in terms of life satisfaction and happiness. Additionally, the study underscores that heightened smartphone and social media addiction levels are linked to reduced levels of subjective well-being in individuals.

The study did not find a significant effect between smartphone addiction and students' school engagement. This result prompts questions regarding the impact of smartphone addiction on students' academic life. Previous research, such as the study conducted by Xie and Wang (2017) in China, has demonstrated the negative consequences of excessive smartphone use on life satisfaction, happiness, and mental health. Their research revealed a correlation between extensive mobile phone use and poor academic performance, including lower grades, reduced productivity, and learning inefficiency. Furthermore, excessive cell phone use was linked to diminished concentration, problem-solving skills, and increased mental health issues related to stress and anxiety. However, the study also emphasizes that prudent and regular use of cell phones can positively influence academic performance. Therefore, it is crucial for students to manage their phone usage wisely and prioritize effective time management to avoid distractions while studying.

Hence, while the analysis results in this study indicate no significant impact between smartphone addiction and school engagement, this should not be construed as diminishing the importance of addressing smartphone addiction among students. Given the technological advancements and widespread smartphone usage, it remains crucial to comprehend the consequences of unhealthy smartphone use and its potential influence on various facets of student life. Additionally, recognizing that technology can offer significant benefits when used judiciously, it becomes imperative to differentiate the purpose behind excessive smartphone use—whether it is for entertainment purposes or for completing academic assignments.

Further research should explore additional factors influencing the connection between smartphone addiction and school engagement, including the purpose of smartphone use, social support, learning environments, and student stress levels. A comprehensive investigation of these factors will enhance understanding of smartphones' impact on students' academic lives in the rapidly evolving learning landscape. Social media intention was found to significantly affect all components of subjective well-being, aligning with Alqarni & Alghamdi's (2019) insights into the moderating factors influencing the relationship between social media use and subjective well-being. Their study indicated that positive and moderate social media

use correlates with increased subjective well-being, whereas excessive use with negative intentions is linked to decreased subjective well-being, with gender and usage duration moderating this relationship.

The findings affirm the research hypothesis, establishing a direct and significant impact of social media intention on students' school engagement. This implies that heightened social media intention corresponds to increased student involvement in academic activities. Students utilizing social media positively and regularly—for communication with teachers and classmates or seeking assignment-related information—demonstrate enhanced engagement and academic performance. However, it's essential to recognize that these study outcomes may not universally apply to all students, given diverse individual characteristics and contextual factors in social media use. Kirschner and Karpinski (2010) found a significant negative correlation between Facebook use and academic performance in college students, emphasizing the need for future research to delineate specific areas of social media intention influencing school engagement.

The analysis revealed that, with the exception of the negative affect component, both the life satisfaction and positive affect components of subjective well-being significantly mediate the relationship between smartphone addiction and social media intention with students' school engagement. These findings underscore the pivotal role of subjective well-being elements, particularly life satisfaction and positive affect, in influencing the dynamics between smartphone addiction, social media intention, and students' engagement in academic activities. Specifically, the study concludes that heightened smartphone addiction corresponds to diminished student involvement in academic pursuits, while increased social media intention aligns with greater school engagement. Notably, it is posited that addressing negative affect can be achieved by enhancing students' life satisfaction and positive affect, thereby fostering increased involvement in academic activities at school.

In education, these findings suggest that teachers and parents play a vital role in addressing smartphone addiction and excessive social media use among students. Enhancing students' life satisfaction and positive affect can be achieved through social and emotional support, encouraging school involvement, and recognizing academic

achievements. However, the study has limitations, including a small sample size and the use of a cross-sectional method, preventing the establishment of causal relationships. Further well-designed studies are warranted to validate these results.

The analysis revealed a predictive capacity of 34.4% for students' school engagement through smartphone addiction, social media intention, and subjective well-being (SWB). Future research could enhance understanding by incorporating factors related to students' competency characteristics as mediators in the relationship between smartphone addiction and social media intention with school engagement. For instance, Kuznekoff and Titsworth (2013) observed 145 college students using smartphones during lectures, finding a negative association between smartphone use and academic performance, particularly in tasks involving memory and problem-solving. Phone calls and text messages were identified as more detrimental than passive activities like internet browsing. This study offers preliminary insights into the impact of smartphones on student learning, serving as a valuable resource for teachers managing smartphone usage in educational settings.

6. Conclusion

The study reveals that all facets of subjective well-being exert a direct and substantial influence on students' school engagement. Additionally, smartphone addiction impacts all components of subjective well-being, while social media intention significantly affects each well-being dimension. The results confirm a noteworthy influence of social media intention on students' school engagement. Moreover, life satisfaction and positive affect components of subjective well-being serve as significant mediators in the relationship between smartphone addiction, social media intention, and students' school engagement. Surprisingly, no significant effect was observed between smartphone addiction and students' school engagement. The collective contribution of smartphone addiction, social media intention, and subjective well-being in predicting students' school engagement is characterized as moderate.

This study elucidates the mediating role of subjective well-being concerning smartphone addiction and social media usage intention in relation to students' school

engagement. The research underscores the importance of promoting a balanced and healthy utilization of smartphones and social media among college students to enhance their academic commitment and overall success in the educational environment.

Nonetheless, the study is subject to certain limitations. Firstly, the uneven distribution of subjects between Indonesia and Malaysia poses a constraint. Future research endeavours should strive to achieve parity in respondent numbers across these two locations to ensure uniform interpretability. Secondly, the utilization of two distinct languages for the scale—Indonesian for dissemination to students in Indonesia and English for students in Malaysia—introduces potential translation variations, necessitating caution in cross-cultural comparisons.

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