



The Development and Psychometric Analysis of The Social Media Engagement Adolescent Scale (SMEAS) in Indonesia

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Abstract: This study aims to develop a Social Media Engagement Adolescent Scale (SMEAS) that can comprehensively capture the culture of social media use among Indonesian adolescents and its implications for educational psychology. This study employs a quantitative approach and uses self-report for data collection. A total of 435 participants aged between 17-21 years were involved in this study, and the data were analyzed using Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM). The results of this study showed that the validated Social Media Engagement Adolescent Scale (SMEAS) consists of 24 statement items divided into three dimensions: affective engagement, behavioral engagement, and cognitive engagement based on social media engagement theory from Ni et al. Reliability testing using Cronbach's α showed that each dimension in SMEAS has good reliability. Item discrimination analysis revealed that all items in SMEAS could differentiate individuals with high and low levels of engagement. Based on the results, SMEAS can be considered a reliable and valid scale for measuring Social Media Engagement among adolescents in Indonesia.

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Introduction

The rapid development of information technology has significantly impacted various aspects of life, including digital transformation and the development of information systems through digital platforms such as social media (Zen & Sitanggang, 2023). Social media has become a primary means for many people, especially adolescents, to communicate, build social networks, and share information in modern life (Haris et al., 2024). According to a survey by the Ministry of Communication and Informatics (Kementerian Komunikasi dan Informatika, 2022), the majority of individuals aged 12-27 spend more than 6 hours per day using the internet, reflecting the high usage of social media (Pratiwi et al., 2023). Based on Erik Erikson's developmental theory, it can be assumed that social media users are predominantly individuals in the age of adolescents (Sokol, 2009).

Adolescents tend to view social media activities as a way to enhance their self-image, hoping to appear cooler and more socially connected (Suryani, 2014). The high intensity of social media use among adolescents can lead to negative impacts (Seo et al., 2014; Stockdale & Coyne, 2020; Triananda et al., 2021), such as the emergence of negative emotions, anxiety, and depression, due to tendencies to withdraw and difficulties in recognizing one's own emotions (Jones et al., 2022; Cauberghe et al., 2021; Selkie et al., 2020; Scott et al., 2019; Khan, 2017; Mahdia, 2018). High engagement in social media can also cause attention disorders regarding the surrounding environment and increase social comparison as well as the fear of missing out (Jones et al., 2022). Given these impacts, it is crucial to delve into



adolescents' active engagement in social media to understand its psychological effects on adolescent development, particularly in late adolescence (McLean, 2005). Social media is used by adolescents for self-presentation, self-disclosure, and identity development through self-branding (Michikyan & Suárez-Orozco, 2016). All of these activities indicate active involvement in social media use, which is social media engagement.

Social media engagement is the interaction between adolescents' affective, behavioral, and cognitive involvement in social media use (Ni et al., 2020). Based on the definition, social media engagement consists of three dimensions: affective engagement, behavioral engagement, and cognitive engagement. These three dimensions of social media engagement are derived from the structure of human attitudes, which include effect, behavior, and cognition (Ni et al., 2020). According to Myers (1993), human attitudes are individuals' evaluative responses to something, rooted in beliefs and manifested in feelings and behaviors (Myers, 1993).

The three dimensions of Social Media Engagement are interconnected and can help measure adolescents' active involvement or interaction with social media. First, affective engagement highlights the emotions that arise and can influence the extent to which adolescents are engaged and actively involved in social media platforms. Second, behavioral engagement reflects the level of participation and active involvement of adolescents in exploring and using the features of social media platforms. Third, cognitive engagement reflects the extent to which adolescents are mentally involved and have positive views related to social media use.

The development of measurement tools to evaluate Social Media Engagement among adolescents has become essential. Previous studies have seen several researchers develop such measurement tools, including Alt (2015), Ni et al., (2020), and Syafani & Alfaruqy, (2023). However, these three measurement tools have limitations in terms of generalizability to the Indonesian cultural context and the general use of social media. For example, the tool developed by Ni et al. (2020) cannot represent adolescents as a whole and may potentially introduce bias, as it was only tested on adolescents in one province of China. Similarly, the tool developed by Alt (2015) is aimed at social media use in an academic context. Even the tool developed in Indonesia by Syafani & Alfaruqy (2023) is only intended for social media use related to Instagram and body esteem. Based on the limitations of previous measurement tools, the current study aimed to construct a social media engagement measurement scale (SMEAS) that aims to reflect the social media usage culture among adolescents in Indonesia, with broader objectives and more diverse types of social media.

Table 1. Review of Social Media Engagement Scale

	Social Media Engagement Scale for Adolescents (SMES-A) (Ni et al., 2020)	Social Media Engagement Scale (Syafani & Alfaruqy, 2023)	Social Media Engagement (SME) Scale (Alt, 2015)
Dimension	Affective engagement, behavioral engagement, and cognitive engagement	Cognitive, emotional, and behavioral	Social engagement, news information engagement, and commercial information engagement
Item	11 items	33 items	10 items
Measurement Scale	5-point Likert scale	4-point Likert scale	5-point Likert scale



Participant	College students and students in China aged between 11 - 28 years old	247 female students aged 14-18 years old	296 university students with an average age of 25 years old
Reliability	$\alpha = 0.709$ to 0.804 .	$\alpha = 0.925$ to 0.935	$\alpha = 0.85$
Validity	Confirmatory Factor Analysis and Exploratory Factor Analysis	Expert judgement	Structural equation modeling (SEM)
Limitation	This measurement tool does not reflect the social media usage culture of adolescents in Indonesia.	This measurement tool only explores adolescent engagement from a single social media platform (Instagram).	This measurement tool only investigates student engagement in an academic context, specifically measuring the extent to which students use social media in the classroom, making it less suitable for broader contexts.

The novelty of this research lies in the development of the Social Media Engagement Adolescent Scale (SMEAS), which addressed several limitations of previous measurement tools. First, this scale will be designed to reflect the culture of social media usage among Indonesian adolescents, which has not been comprehensively covered in previous tools. Gen Z in Indonesia spends most of their time accessing social media, with interactions occurring more within the local sphere compared to the global community due to English literacy barriers. Despite these barriers, many new language terms and trends are often used on social media (Hinduan, et al., 2020). This shows that social media is used by Indonesian youth as a space for expression. Second, the construction of this scale will include various social media platforms, unlike the Social Media Engagement Scale by Syafani & Alfaryuq (2023), which focuses only on Instagram. Third, this scale will be developed for general use, not limited to an academic context as seen in the Social Media Engagement (SME) Scale by Alt (2015), making it more relevant for depicting adolescent engagement broadly on social media. Thus, this study aims to develop a Social Media Engagement Adolescent Scale (SMEAS) that can comprehensively capture the culture of social media use among Indonesian adolescents and its implications for educational psychology.

Research Method

This study was quantitative research and falls under cross-sectional studies, where data collection was conducted at a single point in time without considering other time dimensions (Kesmodel, 2018). All data were collected simultaneously using self-report instruments. Subsequently, reliability testing, validity testing, and item analysis were performed. Reliability was assessed using coefficient alpha. The validity tests conducted included content validity and construct validity. Item analysis was carried out using item discrimination testing by calculating the correlation coefficient between the item score distribution and the total dimension score distribution (corrected item-total correlation dimension), as well as the correlation coefficient between the item score distribution and the total score distribution of the overall measurement tool (corrected item-total correlation total) using the Pearson product-moment correlation formula.



The inclusion criteria of participants included high school or college students, aged between 17 and 21 years old, who were actively using social media. Data collection was conducted online by administering the Social Media Engagement Adolescent Scale (SMEAS) to high school students and university students aged 17-21 years. Out of 443 responses, 435 were analyzed after incomplete data and responses that did not meet the study criteria were removed. The participants ranged in age from 17 to 21 years ($M=19.3$, $SD=1.27$). The sample consisted of 280 female participants (64.4%) and 155 male participants (35.6%). The majority of participants were university students (79.8%), while the other were high school students (20.2%).

The procedure for developing the SMEAS included test conceptualization, test construction, test trial, item analysis, and test revision (Cohen, et al., 2022). The social media engagement scale was developed based on the theory by Ni, et al. (2020). Social media engagement was categorized into three dimensions: affective engagement, behavioral engagement, and cognitive engagement. Each dimension was represented by a number of different indicators, as shown in Table 2.

Table 2. SMEAS Dimensions and Indicators

No.	Dimension	Definition	Behavior Indicator(s)
1.	Affective engagement	Changes in an individual's emotions while using social media.	Individuals experience emotional changes while using social media.
2.	Behavior engagement	The frequency of individuals in using social media, the duration of time individuals spends using social media, and the types of activities carried out by individuals in using social media. The type of activity indicator is a novelty in the construction of this measuring instrument which aims to describe the culture of adolescents in Indonesia in using social media.	<ul style="list-style-type: none">- Frequency of individuals using social media.- Duration of time spent by individuals to use social media.- Type of activities carried out by individuals using social media.
3.	Cognitive engagement	An individual's tendency to ignore negative views of social media use and the individual's full attention in using social media.	<ul style="list-style-type: none">- Individuals tend to ignore negative views of social media use.- Individuals show full attention when using social media.

The final version of the Social Media Engagement Adolescent Scale (SMEAS) consisted of 24 items, with 8 items for each dimension. Each item was answered using a 4-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree).

The SMEAS produces four scores: the affective engagement dimension score, the behavioral engagement dimension score, the cognitive engagement dimension score, and the total score. Dimension scores were obtained by summing the response scores for each item within each dimension of social media engagement, including both favorable and unfavorable items. For unfavorable items, scoring was adjusted after reversing the participants' response scores. The higher the score in a particular dimension, the higher the level of engagement in that dimension. Each score was assigned points based on the selected scale. The total score was obtained by summing the scores from the three dimensions of social media engagement, namely affective engagement, behavioral engagement, and cognitive engagement. The score range for each dimension was 8-32, while the total score range for social media engagement



was 24-96.

In the first step of the test constructed, an item pooling was conducted and produced 49 items of SMEAS which measured three dimensions of social media engagement. Then, the 49-item SMEAS was evaluated by a panel of psychometric experts to ensure the accuracy, relevance, and clarity of the constructs, items, and scale instructions. After revisions, the items were tested on a sample group representing the target population to assess the readability of the test. The readability test was conducted with 11 participants aged 17-21 years. Following the readability test, minor revisions were made (e.g., replacing the term 'gawai,' adjusting the layout of response options, and reorganizing item numbers with similar wording).

The revised items were then piloted with the target population through online forums and social media. An example of an item in the affective engagement dimension was, "Posting my achievements on social media makes me feel proud." A sample item in the behavioral engagement dimension was, "I reflexively open social media when holding my phone." Meanwhile, a sample item in the cognitive engagement dimension was, "I feel more comfortable interacting on social media than interacting in person." Data collection was conducted online using Google Forms (<https://bit.ly/RisetMediaSosial01>). This self-report questionnaire included an introduction and a brief explanation of the study, consent to participate, demographic data, the SMEAS scale, and the Social Media Addiction (SMA) scale to measure the construct validity of the Social Media Engagement Adolescent Scale (SMEAS).

In this study, reliability, validity, and item analysis were conducted for each dimension and the total scale score. The reliability testing was measured using Cronbach's Alpha (Urbina, 2014) to assess the internal consistency of the test. Validity testing was conducted through construct validity (Gravetter & Forzano, 2012), confirmed by factorial structure and correlations with other tests. The factorial structure of SMEAS was examined using Confirmatory Factor Analysis (CFA). Furthermore, the construct validity testing also used the Indonesian version of the Social Media Addiction (SMA) scale by Agung & Sahara (2023) as the external criteria. The SMA scale was found to be reliable, with a total Cronbach's Alpha of 0.83 and alpha values of 0.62, 0.72, and 0.66 for each dimension. The SMA scale was also proven valid based on CFA results, with almost all items having factor loadings greater than 0.4.

The SMEAS item analysis was conducted using several methods: factor loadings for each item, the correlation indices method, and the proportion of endorsement. The analysis of item discrimination for each item in the SMEAS dimensions was conducted using Total – Item Correlation Index Analysis (crITT) and Interdimension – Item Correlation Index Analysis (crITD). Data analysis was performed using JAMOV ver. 2.5.4. Based on the item analysis, the final version of SMEAS which consists of 24 items will be achieved.

Results and Discussion

The reliability testing using Cronbach's Alpha analysis showed that the Social Media Engagement Adolescent Scale (SMEAS) had a good internal consistency for each dimension of the SMEAS, based on Kaplan & Saccuzzo (2017, see Table 3).

Table 3. Reliability Coefficients of the 49-item SMEAS

Dimension	Number of Items	α	M	SD
Affective Engagement	10	0.602	2.83	0.319
Behavior Engagement	28	0.827	2.57	0.302
Cognitive Engagement	11	0.737	2.55	0.385

Total	49	0.892	2.62	0.287
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The Confirmatory Factor Analysis (CFA) was conducted to confirm and refine the factorial structure identified from the SMEAS using Jamovi version 2.5.4. This data was gathered through the SMEAS questionnaire. The following fit indices and their recommended cutoff criteria were used to assess the fit between the hypothesized model and the data: CFI > .90, TLI > .90, RMSEA < .06, SRMR < .06, GFI > .90 (Hair, et al., 2010). The theoretical model is presented in Figure 1.

Model plot

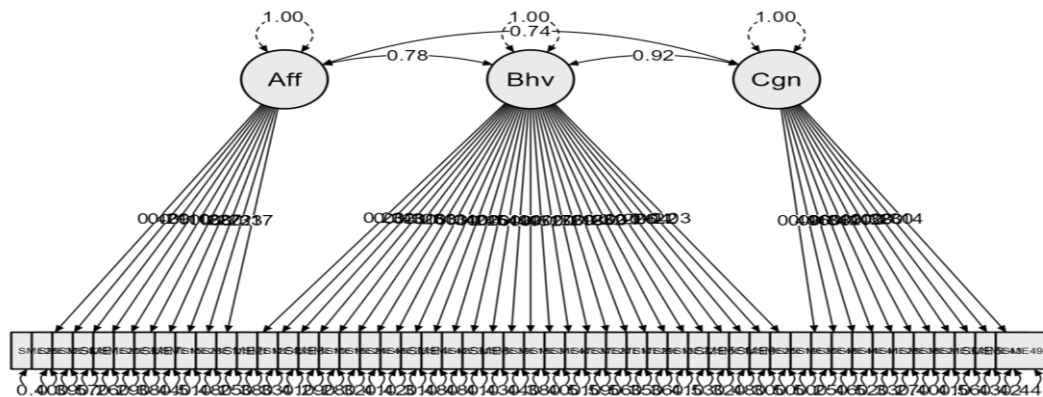


Figure 1. Confirmatory Factor Analysis Diagram

The results of the CFA revealed that the model “*did not*” present a fit model between the hypothesized model and the collected data. The goodness-of-fit indices are provided in Table 4.

Table 4. Goodness-of-Fit Indices

	Chi-Square (>0.05)	CFI (>0.90)	TLI (>0.90)	RMSEA (<0.08)	SRMR (<0.08)	Interpretation
CFA	0.001	0.843	0.836	0.065	0.089	Model does not fit

Table 5. Total - Item Correlation Index Analysis (crITT)

Dimension	r < 0.3	Number of Items	r ≥ 0.3	Number of Items
<i>Affective</i>	40, 1, 20, 15, 11	5	26, 32, 35, 7, 23	5
<i>Engagement</i>				
<i>Behavior</i>	24, 46, 4, 47, 17,	9	2, 12, 45, 8, 10, 16, 36, 42, 34, 3,	19
<i>Engagement</i>	22, 9, 25, 19		39, 18, 31, 37, 27, 29, 13, 5, 14,	
<i>Cognitive</i>	44, 6, 49	3	30, 48, 41, 28, 38, 21, 33, 43	8
<i>Engagement</i>				

Table 6. Item Correlation Index Analysis (crITD)

Dimension	r < 0.3	Number of Items	r ≥ 0.3	Number of Items
<i>Affective</i>	26, 40, 1, 35	4	32, 20, 7, 15, 23, 11	6
<i>Engagement</i>				
<i>Behavior</i>	24, 46, 4, 47, 27,	10	2, 12, 45, 8, 10, 16, 36, 42, 34, 3,	18
<i>Engagement</i>	17, 22, 9, 25, 19		39, 18, 31, 37, 29, 13, 5, 14	
<i>Cognitive</i>	44, 6, 49	3	30, 48, 41, 28, 38, 21, 33, 43	8
<i>Engagement</i>				



Based on the results of the item discrimination analysis, it was concluded that the majority of items in the affective engagement (50%), behavior engagement dimension (67.85%) and cognitive engagement dimension (72.72%) had a good item discrimination index ($r \geq 0.3$, based on cutoff value from Nunnally & Bernstein, 1994; Periantalo, 2015). Meanwhile, the results of the item discrimination analysis by dimension showed that the majority of items in the affective engagement dimension (60%), behavior engagement dimension (64.29%) and cognitive engagement dimension (72.72%) had a good item discrimination index ($r \geq 0.3$). Therefore, it was concluded that each item in the dimension of SMEAS had good discrimination ability to differentiate between individuals with a high social media engagement and those with low social media engagement.

Table 7. Results of Proportion of Endorsement (PoE) Analysis

Index	Category	Item Number of Affective Engagement Dimension	Item Number of Behavior Engagement Dimension	Item Number of Cognitive Engagement Dimension
PoE < 15%	Item tends to be disapproved	35	9	
$15\% \leq \text{PoE} \leq 85\%$	Item triggers evenly distributed responses	26, 32, 7, 15, 23	2, 12, 45, 16, 24, 46, 36, 4, 42, 34, 3, 39, 18, 31, 47, 37, 27, 17, 29, 13, 22, 5, 14, 25, 19	30, 48, 44, 41, 28, 38, 21, 33, 6, 43, 49
PoE > 85%	Item tends to be approved	40, 1, 20, 11	8, 10,	

Based on the results of the proportion of endorsement (PoE), the majority of items in each dimension had a PoE index of $15\% \leq \text{PoE} \leq 85\%$ for the affective engagement dimension (50%), behavior engagement dimension (89.28%), and cognitive engagement dimension (100%). This indicates that the majority of items in each dimension of the SMEAS measurement tool tended to be responded to evenly by the respondents (see Table 7).

An integrative item analysis was conducted on the 49-item SMEAS to produce the final 24-item SMEAS with good psychometric properties according to the proposed test specifications. The values of crITD, crITT, PoE, and factor loading were taken into consideration to test the model fit of the 24-item SMEAS. Priorities for retaining items were based on crITD and crITT to maximize item discriminatory index and factor loading to assess the correlation of items with the measured dimensions, as well as qualitative item content. Considerations for revising items were based on the poor psychometric properties of the items, the PoE index to determine response distribution, and the relevance and appropriateness of the underlying dimensions. The revised items were items 26, 20, 35, 15, and 11 in the affective engagement dimension, items 29 in the behavior engagement dimension, and item 43 in the cognitive engagement dimension (see Table 8).

Table 8. Integrative Item Analysis

Dimension	Selected Item	Eliminated Item	Revised Item
Affective Engagement	32, 7, 23	40, 1	26, 20, 35, 15, 11
Behavior Engagement	45, 16, 36, 34, 18, 31, 13	2, 12, 8, 10, 24, 46, 4, 42, 3, 39, 47, 37, 27, 17, 22, 5, 14, 9, 25, 19	29
Cognitive Engagement	30, 48, 41, 28, 38, 21, 33	44, 6, 49	43

After revision, the 24 SMEAS items were re-analyzed for psychometric properties. The reliability testing shows that each dimension and the total score of SMEAS had a good

internal consistency ($\alpha = 0.63 - 0.87$).

Tabel 9. 24-item SMEAS Reliability Coefficients

Dimension	Number of Item	α	<i>M</i>	<i>SD</i>
<i>Affective Engagement</i>	8	0.63	2.72	0.36
<i>Behavior Engagement</i>	8	0.78	2.62	0.46
<i>Cognitive Engagement</i>	8	0.78	2.52	0.47
Total	24	0.87	2.62	0.37

The validity of SMEAS was tested using the CFA analysis test to obtain a goodness-of-fit model. This analysis was conducted to evaluate how well the hypothesized model fit the observed data, providing a measure of the discrepancy between the model and the actual data. In general, the values in the final model fit table indicate that there was “good fit” between the model and the data obtained (see Table 10). This suggested that SMEAS was valid for measuring the social media engagement construct based on the goodness-of-fit model assessed by CFA.

Table 10. Final Goodness-of-Fit Indices

	Chi-Square (>0.05)	CFI (>0.90)	TLI (≥ 0.90)	RMSEA (<0.08)	SRMR (<0.08)	Interpretation
CFA	0.001	0.942	0.936	0.052	0.075	Model fit

Model plot

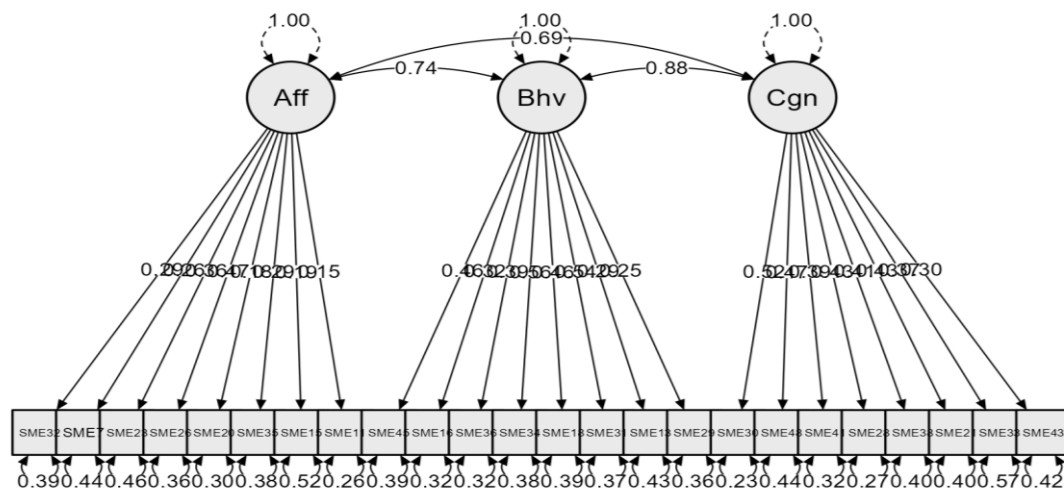


Figure 2. Final CFA diagram

The validity test using construct validity showed significant correlations between each dimension of SMEAS and the dimensions of SMA scale (all p 's $< .05$, see Table 11). The total score of social media engagement was also found to correlate with the total score of SMA scale ($r = .708$, $p < .05$). It was concluded that the SMEAS, both as a total scale and within each dimension, was valid for measuring the construct of social media engagement (see Table 11). Based on the result, the relationship between social media engagement and social media addiction was consistent with the underlying theory.

Table 11. Validity of SMEAS with SMA

	Affective Engagement SMEAS	Behavior Engagement SMEAS	Cognitive Engagement SMEAS	Total Score of SMEAS	Impulsive Feelings SMA	Time Displacement SMA	Social Consequences SMA	Total Score of SMA
Affective Engagement SMEAS	-							
Behavior Engagement SMEAS		-						
Cognitive Engagement SMEAS			-					
Total Score of SMEAS				-				
Impulsive Feelings SMA					-			
Time Displacement SMA						-		
Social Consequences SMA							-	
Total Score of SMA								-



Behavior Engagement SMEAS	0.521***	-					
Cognitive Engagement SMEAS	0.470***	0.694***	-				
Total Score of SMEAS	0.753***	0.891***	0.875***	-			
Impulsive feelings SMA	0.380***	0.547***	0.498***	0.570***	-		
time displacement SMA	0.368***	0.615***	0.620***	0.646***	0.528***	-	
Social consequences SMA	0.371***	0.412***	0.516***	0.517***	0.511***	0.455***	-
Total Score of SMA	0.456***	0.648***	0.663***	0.708***	0.864***	0.808***	0.769***

Table 12. Standardized Factor Loadings, crITD, and, crITT of the SMEAS

Dimension	Item	Factor Loading	Std. Error	CR _{ITD}	CR _{ITT}
Affective Engagement	Q26.	.47	.04	.29	.45
	Q32.	.51	.03	.42	.36
	Q20.	.38	.03	.32	.25
	Q35.	.33	.04	.16	.35
	Q7.	.48	.04	.43	.32
	Q15.	.39	.04	.31	.26
	Q23.	.44	.04	.31	.34
	Q11	.36	.03	.30	.26
Behavior Engagement (Indicator 1)	Q45.	.56	.03	.49	.51
	Q16.	.51	.03	.47	.46
	Q36.	.58	.03	.53	.52
Behavior Engagement (Indicator 2)	Q34.	.64	.03	.56	.60
	Q18.	.65	.03	.56	.53
	Q31.	.67	.03	.58	.57
Behavior Engagement (Indicator 3)	Q29	.36	.03	.37	.41
	Q13	.42	.03	.43	.45
Cognitive Engagement (Indicator 1)	Q30	.73	.03	.61	.62
	Q48	.58	.03	.48	.50
	Q41	.63	.03	.47	.49
	Q28	.67	.03	.53	.56
	Q38	.53	.03	.51	.50
Cognitive Engagement (Indicator 2)	Q21	.55	.03	.45	.48
	Q33	.41	.04	.38	.42
	Q43	.39	.03	.33	.41

The SMEAS measurement tool achieved its target of 24 items as originally designed. Based on the reliability analysis, the reliability testing showed that each dimension and the total score of SMEAS had a good internal consistency.

Based on the CFA analysis, it was found that each dimension of the SMEAS measurement tool— affective engagement, behavioral engagement, and cognitive engagement—as well as the overall scale, were valid in measuring social media engagement according to Ni et al.'s (2020) theory. The SMEAS, both as a whole and within each dimension (affective engagement, behavioral engagement, cognitive engagement), was found



to be valid for measuring the construct of social media engagement based on its correlation with the social media addiction scale (Agung & Sahara, 2023).

This study has important implications for educational psychology, both conceptually and practically. Conceptually, it expands the understanding of social media engagement among adolescents by validating the Social Media Engagement Adolescent Scale (SMEAS), which captures affective, behavioral, and cognitive dimensions. This contributes to theories on identity development and self-regulation, showing how social media influences adolescent emotions, behaviors, and thought processes. Practically, the SMEAS provides a useful tool for educators and counselors to assess students' social media engagement and identify potential risks such as excessive use, emotional distress, or academic distractions. The findings highlight the need for digital literacy programs that promote balanced social media use and teach students self-regulation strategies. By integrating these insights into education, schools can support healthier online habits and enhance students' psychological well-being and academic focus.

Conclusion

Based on the psychometric properties analyzed in this study, it can be concluded that the SMEAS demonstrates good internal consistency across its dimensions and total score. The validity testing using CFA further indicates that SMEAS achieves a good fit between the hypothesized model and the observed data, supporting its validity in measuring the social media engagement construct. In addition, the SMEAS's items have the ability to differentiate between individuals of high level and low level of social media engagement. The SMEAS has the potential to serve as a reliable and valid tool for professionals in psychology and education to assess social media engagement among adolescents. Additionally, the scale may be useful for researchers in exploring theoretical and applied aspects of social media engagement and its implications in various contexts.

Recommendation

For future research, several steps could have been taken to improve the quality of the SMEAS measurement tool. First, the Likert scale should have been designed with an even number of points to avoid neutral responses. Using a 6-point Likert scale could have potentially provided finer detail, reduced polarization bias, and allowed for more accurate measurement, making it more effective in capturing the nuances of respondents' attitudes or perceptions. This approach might have also enhanced the reliability and validity of the measurement tool, as offering more response options would have allowed respondents to better express subtle differences in their views. This reduced the inconsistency that could arise when respondents were forced to choose between too few options, such as a 4-point Likert scale.

Second, in the future, items that were too leading should have been avoided, as they had the potential to cause social desirability or unsocial desirability answers in respondents. Third, items with unsatisfactory PoE indices should have been revised to enhance the psychometric properties of the SMEAS items. Referring to the revisions based on crITT, crITD, factor loading, and PoE values, further testing of the SMEAS measurement tool would have been necessary to ensure improvements in the quality of specific items and overall enhancement of SMEAS in measuring individuals' engagement with social media.

This study provides important recommendations for educators and counselors to support adolescents in managing their social media use effectively. The Social Media Engagement Adolescent Scale (SMEAS) can help identify students who may be at risk of



excessive engagement, emotional distress, or academic distractions. Educators should integrate digital literacy programs into the curriculum to teach students self-regulation, critical thinking, and responsible online behavior, ensuring social media is used productively. Counselors can use SMEAS results to develop targeted interventions, such as digital detox strategies, mindfulness practices, and self-esteem building, to help students maintain a healthy balance between online and offline interactions. Additionally, collaboration between educators, counselors, and parents is essential in guiding social media use, setting boundaries, and fostering positive digital habits to support students' well-being and academic success.

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