

# Investigating the Relationship Among Social Media Addiction, Cognitive Absorption, and Self-Esteem

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## To Cite:

Akkuş Çutuk, Z. (2021). Investigating the relationship among social media addiction cognitive absorption and self-esteem. *Malaysian Online Journal of Educational Technology*, 9(2), 42-51.

<http://dx.doi.org/10.52380/mojet.2021.9.2.211>

## ABSTRACT

The present study aimed at testing a model developed to uncover the relationships among social media addiction, cognitive absorption, and self-esteem. This study's sample consisted of 361 university students, 198 of whom were females, and 163 were males. Data were collected using the Social Media Addiction Scale (SMAS), the Cognitive Absorption Scale (CAS), and the Rosenberg Self-Esteem Scale (RSES). Structural Equation Modelling (SEM) was used to analyse the data. The results showed a positive and significant relationship between cognitive absorption and social media addiction; thus, cognitive absorption predicted social media addiction. A negative and significant relationship between self-esteem and social media addiction was also found; thus, self-esteem predicted social media addiction.

**Keywords:** *Social media addiction (SMA), cognitive absorption (CA), and self-esteem*

## Article History:

Received: 5 Dec. 2020

Received in revised form: 18 Mar. 2021

Accepted: 31 Mar. 2021

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## INTRODUCTION

Social media, also called social networking sites, have been widely used in recent years and have become a part of individuals' daily routines (Lee & Hsu, 2017; Tourinho & de Oliveira, 2019). Social media refer to all services and applications offering content and information sharing, such as social networking, blogs, micro-blogs, instant messaging applications, chat sites, and forums, which enable users to interact with each other thanks to network technologies (Boyd, 2008). People use social media to communicate and stay connected, make new friends, share photos or videos, and blog content (Lee & Hsu, 2017; Kim, Jeong & Lee, 2000; Wang & Chiang, 2009). Individuals have turned into information dissemination agents from being the audience or readers of social media contents. Through using social media tools, people find the opportunity to share their thoughts, ideas, and experiences worldwide (Solis & Breakenridge, 2009).

It can be suggested that social networking influences users and lead them to adopt an emotional involvement as it satisfies individuals' social needs, offers an attraction perception, and creates commitment/belonging structures (Dursun & Çuhadar, 2015). Various approaches and theories explain individuals' feelings of deep involvement in technology. Cognitive Absorption Theory, one of these theories, is defined as the "state of deep involvement in experiences with technology" (Agarwal & Karahanna, 2000). When it comes to social networking, the inability to limit social networking time, having a deep curiosity, interest, enjoyment, and the inability to keep social networking patterns under control are all explained in

cognitive absorption (CA) (Agarwal & Karahanna, 2000).

CA significantly affects behavioural intention through perceived usefulness and perceived ease of use (Agarwal & Karahanna, 2000). Such an effect occurs in various internet technologies, such as virtual communities (Lin, 2009), online learning (Saade & Bahli, 2005), and online shopping (Shang et al., 2005). Additionally, CA was the primary determinant in the motivation to use social media (Lin, 2009). Considering the target groups experiencing CA, it was found out that university students had an above average CA, and that information and communication technologies were the sources of pleasure and curiosity for them (Çuhadar, 2013).

It is a well-known fact that social media is mostly used by the young (Kuss & Griffiths, 2011). The young even try to communicate through the internet during lessons (Khan, 2018). The internet has a charming effect since it offers a free, easy, and active environment with little control. It does not require labour and responsibility, it provides an environment of socialisation and convenience of belonging to a group, ensuring one to express themselves easily (Yavuz, 2018). The young who put social media at the centre of their daily lives use, for example, Instagram for sharing photos, Youtube and Dailymotion for sharing videos, Facebook and LinkedIn for joining social networks, Twitter for sharing posts, and Secondlife for gaming. They shape their own self-concepts with the feedback they receive from social media users. They evaluate their own values; that is, they form self-esteem (Düvenci, 2012; Weiten, Yost Hammer, & Dunn, 2016). How individuals appraise and see themselves significantly affects their mental well-being, social interaction (Uzun, Yildirim & Uzun, 2016), and self-esteem. Self-esteem is how an individual assesses themselves, which can be positive or negative (Smith, Mackie, & Claypool, 2014).

The young with high self-esteem have positive thoughts about themselves. They set goals they can achieve and cope better with stress (Taylor, Peplau, & Sears, 2015). They think that they can carry out their interpersonal relationships better (Gerrig & Zimbardo, 2012). However, young people with low self-esteem have negative thoughts about themselves. They tend to be pessimistic and more prone to depression when faced with stress (Taylor, Peplau, & Sears, 2015). They have insecurities and suspicions that they can carry out their interpersonal relationships well (Gerrig & Zimbardo, 2012). Individuals with low self-esteem can develop more online relationships since they are more sensitive to interpersonal relationships and tend to be more dependent on others for approval. Communicating online through social networking sites can be an effective way for such individuals to socialise (Saiphoo, Halevi, & Vahedi, 2020). These people can communicate with people they do not know without anxiety, receive 'likes' to their 'posts' on social media, and overrate themselves (Esen & Gündoğdu, 2010; Tutgun-Ünal, 2015).

Findings showed that those who used more social media had lower self-esteem (Andreassen, Pallesen, & Griffiths, 2017; Błachnio, Przepiorka, & Rudnicka, 2016; Woods, & Scott, 2016) and that there was a negative and significant relationship between social media and self-esteem (Hawi & Rupert, 2017; Hawi, & Samaha, 2016; Şahin & Kumcağız, 2017; Vogel, Rose, Roberts, & Eckles, 2014). It was also determined that adolescents with low self-esteem spent more time on social media and that social media, internet, and computer addiction and excessive use of social media increased as self-esteem decreased (Ingólfssdóttir, 2017). Individuals with low self-esteem may also be more likely to use social media excessively or problematically (e.g., making unfavourable social comparisons) (Saiphoo, Halevi, & Vahedi, 2020).

Although there are many studies on social media addiction (SMA) or problematic internet use among the young, this issue remains a current problem. In line with the theoretical implications mentioned above, it is considered that SMA, CA, and self-esteem are all associated with each other, which is, especially in our country, not adequately studied. Thus, answers to the following questions were sought in the study:

1. Is there a significant relationship between CA and SMA?
2. Does CA predict SMA?
3. Is there a significant relationship between self-esteem and SMA?
4. Does self-esteem predict SMA?

## RESEARCH METHOD

### Research Model

In the research, the relational screening model was used to determine the relationships between variables. The data were obtained using three self-report measurement tools, and the established model was tested with Structural Equation Model.

### Participants

The study sample consisted of 361 university students, 198 of whom were female, and 163 were male. The participants were enrolled in faculties of education and sports sciences and were selected through convenience sampling. The students were aged between 18-28, and the mean age was 21.27.

### Data Collection Tool

**Demographic Information Form:** The form prepared by the researcher consists of four questions regarding gender, age, department, and year of study.

**The Social Media Addiction Scale (SMAS):** The SMAS was developed by Tutgun-Ünal (2015). The 5-point Likert-type scale (1= never, 5= always) consists of 41 items clustered under four sub-scales: occupation, mood modification, relapse, and conflict. The lowest and highest scores that can be obtained from SMAS are, respectively, 41 and 205. The higher scores mean an increase in SMA. The scores between 41-73 indicate no addiction, while the scores between 173-205 indicate too much social media addiction. Cronbach's Alpha internal consistency coefficient of the SMAS was found to be .96. As a result of the analyses carried out within the scope of this study, it was found that the Cronbach's Alpha internal consistency coefficient of the sub-scales ranged between .90 and .95, while it was .96 for the total scale.

**The Cognitive Absorption Scale (CAS):** Developed by Agarwal & Karahanna (2000), the CAS was adapted to Turkish by Koçak-Usluel and Kurt-Vural (2009). The 10-point Likert-type scale (1= strongly disagree, 10= strongly agree) consists of 17 items clustered under four sub-scales: time, curiosity, the focus of pleasure, and focus of interest. The lowest and highest scores that can be obtained on the CAS are, respectively, 17 and 170. The Cronbach's Alpha internal consistency coefficients of the CAS and its sub-scales were reported to be between .82 - .92. This research found that the CAS Cronbach's alpha coefficient's sub-scales ranged between .77 and .90, with .90 for the total scale.

**The Rosenberg Self-Esteem Scale (RSES):** Morris Rosenberg developed the RSES in 1965. The Turkish adaptation study was carried out by Çuhadaroğlu (1986). In this study, the 10-item 'Self-Esteem' sub-scale of the 63-item RSES was used. The highest and lowest scores that can be obtained from the scale are, respectively, 10 and 40. In Çuhadaroğlu's (1986) study, Cronbach alpha internal consistency reliability coefficient was calculated as .76. In this study, Cronbach's alpha coefficient of the RSES is .86.

### Data Analysis

In the first stage, descriptive statistics were given, and correlation analyses were performed among the relevant variables. Then, the Structural Equation Modelling (SEM) was carried out. An SEM is a multivariate statistical method based on the definition of observable and unobservable variables in a causal and relational model based on a specific theory (Byrne, 2010). General structural equation models consist of two parts. The first one is the measurement model applied by connecting observed variables to latent variables with confirmatory factor analysis. The measurement model constitutes the beginning of structural equation model analysis (Anderson & Gerbing, 1988; Kline, 2015). All variables can be tested in a measurement model, and the measurement models of the variables can be tested in a single model (Şimşek, 2007). All variables were tested separately in the model adopted in the study. The second one is the structural model applied by connecting latent variables with simultaneous equality systems (Anderson & Gerbing, 1988; Kline, 2015). In SEM, first, the measurement models are tested, then the structural model is tested. Fit indices are used to decide whether the model shows a good fit or not (Schumacher & Lomax, 2004). In this study,

chi-square/degrees of freedom, IFI, CFI, NFI, GFI, AGFI, RMSEA, and SRMR were used as good fit values. It is suggested that acceptable good fit indexes of these values should be  $\leq 5$  for  $\chi^2/df$ ;  $\geq .90$  for CFI, NFI, and IFI,  $\geq .85$  for GFI and AGFI, and  $\leq .10$  for RMSEA and SRMR (Hu & Bentler, 1999; Marcoulides & Schumacher, 2001; Maydeu-Olivares, Shi, & Rosseel, 2018; Schermelleh-Engel & Moosbrugger, 2003). The data obtained from the data collection tools were analysed using SPSS 22.00 for the Windows package program and LISREL 8.7 statistical package program.

**FINDINGS**

**Descriptive Statistics and Correlation**

Before the descriptive statistics were given, Skewness and Kurtosis values were checked to whether the data showed normal distribution. Accordingly, the Skewness and Kurtosis values of the SMAS were, respectively, .31 and -.61; -.06 and -.25 for the CAS; and -.45 and -.43 for the RSES. Therefore, it was determined that these values posed no significant problems in the distribution of the data obtained from the scales (George & Mallery, 2010; Finney & DiStefano, 2006; Huck, 2012). The results of the correlation analyses with the descriptive statistics for the variables are shown in Table 1 below.

**Table 1.** Descriptive statistics and the results of the correlation analyses

	Correlation			Descriptive Statistics		
	1	2	3	Mean (SD)	Skewness	Kurtosis
1. SMAS	-			97.97 (31.22)	.31	-.61
2. CAS	.35**	-		118.11 (23.89)	-.06	-.25
3. RSES	-.21**	.05	-	21.98 (5.29)	-.45	-.43

Note. \*\* p <0.01

A positive and significant relationship between the SMAS and the CAS ( $r = .35, p < .01$ ) was found, and there was a negative and significant relationship between the SMAS and the RSES ( $r = -.21, p < .01$ ). However, no significant relationship was found between the CAS and the RSES ( $r = .05, p > .01$ ).

**Structural Equation Modelling**

**Measurement Model**

In the measurement model, a confirmatory measurement model was established for each of the variables of SMAS, CAS, and RSES. Table 2 below shows compliance index values for the confirmatory measurement model.

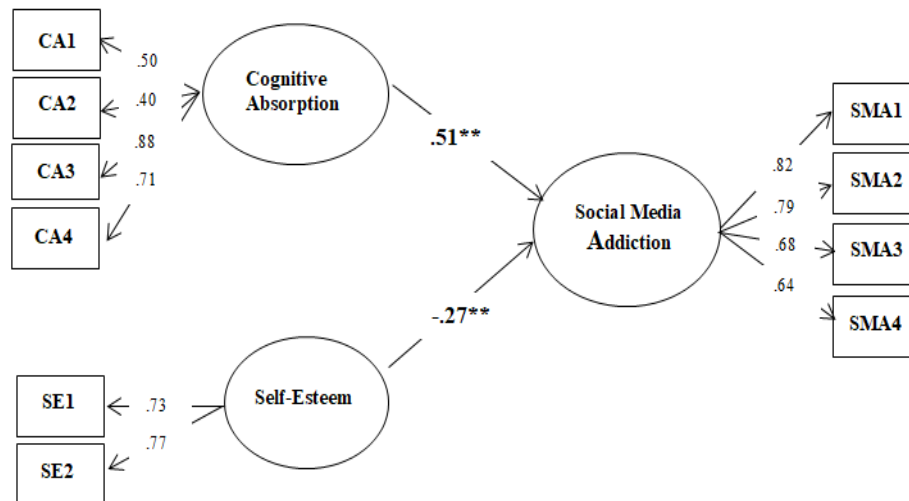
**Table 2.** Results related to confirmatory measurement model present

Variables	$\chi^2$	$\chi^2/df$	IFI	CFI	NFI	GFI	AGFI	SRMR	RMSEA
SMAS	3842.77	2.66	.95	.95	.94	.90	.87	.065	.070
CAS	748.95	2.54	.97	.97	.95	.90	.88	.052	.072
RSES	91.06	3.14	.98	.98	.97	.95	.91	.048	.077

In Table 2 above, the fit index values of the confirmatory measurement model established for SMAS, CAS, and RSES were all significant. Accordingly, the compliance indexes on the SMAS were found as ( $\chi^2 (1444) = 3842.77, \chi^2/df = 2.66, p < 0.05, IFI = .95, CFI = .95, NFI = .94, GFI = .90, AGFI = .87, SRMR = .065, RMSEA = .070, 90\% \text{ CI for RMSEA} = .047-.079$ ). Adaptation indices on CAS were found as ( $\chi^2 (294) = 748.95, \chi^2/df = 2.54, p < 0.05; IFI = .97, CFI = .97, NFI = .95, GFI = .90, AGFI = .88, SRMR = .052, RMSEA = .072, 90\% \text{ CI for RMSEA} = .069-.084$ ). Adaptation indexes in the RSES were found as ( $\chi^2 (29) = 91.06, \chi^2/df = 3.14, p < 0.05, IFI = .98, CFI = .98, NFI = .97, GFI = .95, AGFI = .91; SRMR = .048; RMSEA = .077, 90\% \text{ CI for RMSEA} = .060-.095$ ). Significant t-values were obtained from all items in the SMAS, CAS, and RSES. According to the results, it was determined that the confirmatory measurement model can be used to test the structural model.

**Structural Model**

In the second SEM stage, the structural model developed to determine the relationship between SMA, CA, and self-esteem was tested. Fit index values of this model were:  $\chi^2(48)=115.50$ ,  $\chi^2/df=2.40$ , IFI=0.96, CFI=0.96, GFI=0.95, NFI=0.94, AGFI=0.91, SRMR=.063; It was determined as RMSEA=.064, 90 % CI for RMSEA = .049-.079 and showed that the structural model has a good fit. There is a positive and significant relationship between SMA and CA; CA predicts SMA ( $\beta = .51$ ;  $p < 0.05$ ). It was found that there was a negative and significant relationship between self-esteem and SMA, and self-esteem predicted SMA ( $\beta = -.27$ ;  $p < 0.05$ ). When the determinant coefficients ( $R^2$ ) in the validated model were examined, 31% of the variability in SMA were explained by CA and self-esteem confidence variables ( $p < 0.05$ ).



**Figure 1. Standardised Values for Structural Model**

Note.  $^{**}p < .01$ ; CA1 time, CA2 curiosity, CA3 the focus of pleasure, CA4 focus of interest; SE1 positive SE2 negative; SMA1 occupation, SMA2 mood modification, SMA3 relapse, SMA4 conflict

**DISCUSSION AND CONCLUSION**

In this study, a structural model revealing the relationships among social media addiction (SMA), cognitive absorption (CA), and self-esteem was evaluated. First off, measurement models were tested, and it was determined that the proposed measurement models could be used to test the structural model. Then, the proposed structural model was tested and confirmed with previously confirmed measurement models. The structural model results revealed a positive and significant relationship between CA and SMA; thus, CA predicted SMA. It was also found that there was a negative and significant relationship between self-esteem and SMA; thus, self-esteem predicted SMA.

The results of the model confirmed in the study are discussed in detail below. First, it was found that CA affected SMA, which was also consistent with the relevant literature. The harmony between social media users' needs and the functionality of products and services was found to significantly impact CA (Meng-Hsiang, & Hsien-Cheng, 2017). Among users addicted to smartphones and social networking services, females using social networking services and those using smartphones for social networking services experience more CA (Barnes, Pressey, & Scornavacca, 2019). In addition to the positive effects of social networking and social presence on CA, it was also strongly associated with users' intention to continue using social media (Hsu, Chuang, Chiu, & Chu, 2014).

It was previously determined that CA affected using Orkut, one of the world's first social networking startups. The perceived benefit and accessibility of Orkut by its users were the features that most affected CA (Löbler, Visentini, & Estivaleta, 2011). CA of Facebook users moderates the relationship between habit and automatic use (Lee, 2014). It was discovered that the interface characteristics boosted CA among users



(Oh & Sundar, 2015). Findings show that CA plays an essential role in influencing users' intense engagement in mobile training, affecting mobile training outcomes (Reychav & Wu, 2015). A study examining the relationships among social presence, CA, interest, and student satisfaction in online learning concluded that although social presence was associated with student satisfaction, it had no direct effect but was affected through CA. Interest indirectly affected social presence and satisfaction through cognitive involvement. Contrary to expectations, no significant relationship was found between interest and CA (Leong, 2011).

It was found that CA had a critical place in the use of virtual communities, which is the most effective way to establish new social relationships with internet-based technologies. CA significantly affects behavioural intentions due to its perceived usefulness and user-friendliness (Lin, 2009). It was determined that difficulties, skills, perceived reality, and needs affected the use of virtual communities through CA, but that only interactions directly affected it (Jin-Hwa & Hyun-Soo, 2004). It was also determined that CA positively impacted joining virtual health community platforms (Mpinganjira, 2019).

On the other hand, CA was found to have serious impacts on the privacy of the vast majority of individuals using social networking sites. CA causes self-disclosure because it increases perceived benefits and decreases perceived risks (Alashoor & Baskerville, 2015).

The study's results suggested a negative relationship between self-esteem and SMA and that SMA levels of university students with low self-esteem were high. The relevant literature includes studies concluding results similar to ours. For example, negative relationships were found between self-esteem, daily internet use, and SMA (Kırcaburun, 2016); and between self-esteem and SMA (Yüksel-Şahin & Öztoprak, 2019; Hawi & Rupert, 2017). In the study conducted by Akbulut (2018), the sub-scales of social media use disorder were identified as virtual communication and virtual tolerance. In this context, it was determined that the virtual communication sub-scale had a positive and significant relationship with the scores on self-esteem and body image. As a result of their study on adolescents diagnosed with attention deficit and hyperactivity, Uzun, Yıldırım, and Uzun (2016) found that adolescents with low self-esteem had higher SMA levels.

On the other hand, the present study has some limitations. First of all, SEM was used in the study, which could get strong results from quantitative methods. However, a cause-effect link cannot be suggested due to the nature of quantitative methods and cross-sectional sampling; thus, longitudinal and experimental studies are needed to reveal causal relationships among the variables fully. Another limitation is that this study was carried out in only two faculties. Similar studies can be done in more than two faculties, and the results can be compared. Such studies are also considered to be essential for the generalisability of the findings. Finally, this study was carried out by deploying the convenience sampling method. In particular, further studies may focus on sample groups covering students with high levels of SMA.

This study's findings offer notable information about the relationships among SMA, CA, and self-esteem among university students. Implementing activities aimed at raising self-esteem so that the young can use social media consciously and initiating psychoeducation and preventive guidance activities to enable students to realise their own personality traits are thought to be effective in preventing SMA. To prevent SMA, projects involving pre-school, primary school, high school, and university students can be developed and expanded to society. Finally, longitudinal studies can also be carried out by monitoring individuals from their study period to professional life in terms of technology use.

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