Hakan Tahiri Mutlu[1]
Rengim Sine Nazli[2]
Gulsah Sari[3]

[1]Bolu Abant Izzet Baysal University, Faculty of Economics and Administrative Sciences, Department of Business Administration, Department of Numerical Methods, Bolu, Türkiye
[2]Bolu Abant Izzet Baysal University, Faculty of Communication, Department of Journalism, Bolu, Türkiye
[3]Bolu Abant Izzet Baysal University, Faculty of Communication, Radio, Television and Cinema Department, Bolu, Türkiye

Corresponding Author:
Hakan Tahiri Mutlu
mail: tahirimutlu@ibu.edu.tr

A Field Study on Determining the Social Media Addiction Levels of Academicians: Validity and Reliability Study

ABSTRACT

Objective: The main purpose of this research was to find out the social media addiction levels of academicians and to reveal whether the scale used is a valid and reliable scale. In addition, it is another aim of the study to determine which variables differ in terms of social media addictions of academics whose social media addiction levels are determined.

Methods: A total of 430 academicians, 199 of whom were females and 231 males, participated in this study. The validity and reliability of the scale were tested by performing exploratory and confirmatory factor analyzes and reliability analyzes on the data collected from the academicians reached by the online survey method. Then, the differences of the factors, whose validity and reliability were ensured by using parametric techniques, according to demographic variables were examined.

Results: The exploratory factor analysis done on the data collected from academicians reached by online survey method, showed that the scale had four sub-factors called Virtual Tolerance (Slacking), Virtual Interaction, Virtual Communication, and Emotional State. Obtained sub-factors were subjected to confirmatory factor analysis and it was seen that the fit indices gave good results. Since the Cronbach's alpha value, which was used to measure the reliability of the scale, was also high, the scale used to measure the social media addiction levels of academicians was found to be valid and reliable. The differences of the factors that were found to be valid and reliable according to demographic variables were examined.

Conclusions: The result of the analysis demonstrated that addiction levels of single academicians were more than that of the married academicians; young or old academicians' social media addiction levels were more than that of middle-aged academicians. Clearly, this study revealed that as the academic title increases, social media addiction levels of academicians decreases.

Keywords: Virtual Tolerance-Interaction and Communication, Social Media Addiction, Exploratory and Confirmatory Factor Analysis, Reliability, Statistical Analysis.

Akademisyenlerin Sosyal Medya Bağımlılık Düzeylerinin Belirlenmesine Yönelik Bir Saha Araştırması: Geçerlilik ve Güvenilirlik Çalışması

ÖZET

Amaç: Bu araştırmanın temel amacı akademisyenlerin sosyal medya bağımlılık düzeylerini ortaya çıkarmak ve kullanılan ölçeğin geçerli ve güvenilir bir ölçek olup olmadığını ortaya koymaktır. Ayrıca sosyal medya bağımlılık düzeyleri belirlenen akademisyenlerin bu bağımlılıklar açısından hangi değişkenlerin farklılaştığını belirlemek de çalışmanın bir diğer amacıdır.

Gereç ve Yöntem: 199'u kadın, 231'i erkek olmak üzere toplam 430 akademisyen bu çalışmaya katılmıştır. Çevrimiçi anket yöntemiyle ulaşılan akademisyenlerden toplanan veriler üzerinde açımlayıcı ve doğrulayıcı faktör analizleri ile güvenirlik analizleri yapılarak ölçeğin geçerliliği ve güvenirliği test edilmiştir. Daha sonra parametrik teknikler kullanılarak geçerliği ve güvenirliği sağlanan faktörlerin demografik değişkenlere göre farklılığı incelenmiştir.

Bulgular: Yapılan açımlayıcı faktör analizi, ölçeğin Sanal Tolerans (Gevşeme), Sanal Etkileşim, Sanal İletişim ve Duygusal Durum olmak üzere dört alt faktöre sahip olduğunu göstermiştir. Elde edilen alt faktörler doğrulayıcı faktör analizine tabi tutulmuş ve uyum indislerinin iyi sonuçlar verdiği görülmüştür. Ölçeğin güvenirliğini ölçmek amacıyla yapılan cronbach's alfa değeri de yüksek çıktığı için akademisyenlerin sosyal medya bağımlılık düzeylerini ölçmek için kullanılan ölçek geçerli ve güvenilir bulunmuştur. Geçerliği ve güvenirliği sağlanan faktörlerin demografik değişkenlere göre farklılığı incelenmiştir.

Sonuç: Bekâr akademisyenlerin bağımlılık düzeylerinin evli akademisyenlere göre daha fazla olduğu; genç ve yaşlı akademisyenlerin sosyal medya bağımlılık düzeylerinin ise orta yaşlı akademisyenlere göre daha fazla olduğu ortaya çıkmıştır. Yapılan bu araştırmada ayrıca akademik unvan arttıkça akademisyenlerin sosyal medya bağımlılık düzeylerinin de düştüğü ortaya konulmuştur.

Anahtar Kelimeler: Sanal Tolerans-Etkileşim ve İletişim, Sosyal Medya Bağımlılığı, Açımlayıcı ve Doğrulayıcı Faktör Analizi, Güvenilirlik, İstatistiksel Analiz

INTRODUCTION

We left behind a period in which we learned about the developments in the world from the mass media and moved to a new era where we are learning the same developments from people through social networks. Recently, when the global village is completely networked, the amount of information we can reach, and deliver has increased considerably thanks to new communication technologies that are getting cheaper and widespread. We could not even imagine a life without new communication technologies integrated into smartphones in the age we live in, where access to information is easier than ever.

However, human beings have become free with the comfort of being able to reach anywhere in the world with a single button and express their ideas without limits. This rapid life produces a great paradox for humans. The posts shared on interactive internet environments, called social media, have revealed some people living their private or professional lives publicly. While some have come to the fore with their posts, others have begun to follow shared lives. Thus, an unhappy person of modern life has started a new and unknown journey to an alternative happy life. People seem to satisfy all kinds of expectations in virtual lives, and this virtual satisfaction has become more and more attractive day after day. Day by day, the interest in social networks has become more than a habit and started to be accepted at the level of "addiction".

Many studies on social media addiction in social sciences have just begun and still been done in virtual field. In virtual areas where users create and present their profiles, these profiles vary according to some interest areas such as hobby, profession, likes, etc. (1). As the time elapsed in these networks, which include people of all ages and professions, the element of curiosity about the effects and motivations of these networks has increased. In this context, the relationship between social media and addiction has been examined in different sample groups. For instance, Sümen and Evgin's study examines the relationship of high school students' social media addiction with sleep quality and psychological problems (2). As a result of the research conducted with 1274 students, it was determined that the young people included in the sample could not sleep efficiently and their sleep quality was low. The study, which was conducted in a different sample group, was conducted with 329 undergraduate students in Afghanistan. As a result of the study, it was revealed that there is a positive relationship between social media, addiction and depression (3). At the same time, attitudes and addiction levels are tried to be determined in these studies by considering the demographic variables.

Given the relationship between social media and addiction, one should examine the impact of internet, which we can define as an inevitable desire for an object or asset. This is because one cannot talk about social media without internet. Healthy internet use is defined as using the internet for a certain purpose and without a cognitive or behavioral disturbance in a reasonable amount of time (4). The cheap and easy accessibility of the internet, the possibility of people of all ages and socio-economic levels to access the internet have caused people to develop different behavioral patterns that attract attention and are suitable for examination. Based on this, research being conducted in recent years have focused on the internet, social media, and addiction behaviors (5).

In addition to the research being made especially on young people, it has begun to wonder how the other part of the society also uses social media. Thereupon, studies are conducted with various age groups and professional groups on the relationship between social media and addiction. In a study investigating the effect of social media addiction on the level of depression in adults, it was determined that working individuals spend less time on social media than students or job seekers. However, as the duration of social media use increases, it has emerged that social media addiction and depression increase (6). In a study measuring the social media usage practices of 16 people aged 60-80 in Singapore found that "social media apps' use among participants was moderated by personal attitudes and social influences. Second, participants perceived social media apps' use as both positive and negative influences on health-related outcomes" (7). This study aimed to determine the relationship between social media and the addiction of academicians who have scientific autonomy and a public legal personality and who are responsible for providing education in institutions where high-level education and training are provided. It is of great importance in revealing the social media addiction levels of the academicians who direct the young part of the society.

Social Media and Addiction Relationship: Regardless of generation, social media has become an important part of people of all ages and one of the most discussed topics in every part of society. The ability to present many features such as entertainment, information, communication, game, and hobby to people at the same time makes social media even more attractive. Besides, communication technologies have become smaller and integrated with

technologies have become smaller and integrated with new technologies and have more features, strengthening mobile communication and

expanding the use of social media. Moreover, mankind has started to spend more time on social media, which has become a part of the most important daily habits.

Boyd and Ellison have described that social networks among social media are at the center of almost everyone as, "web-based services that allow individuals to create an open or semi-open profile in a limited system, allowing them to view and follow the contact lists created by themselves or other users within the system, as well as to list their profiles" (8). These networks, which include various elements such as interaction, content creation, and entertainment, have become popular with their ability to meet every need. The definitions of social networking sites are mostly about 'interaction'. Koh et al. describe social network sites as "users interact with real-life friends and meet other people with common interests in these web-based virtual communities"; they also describe social networks as one of the greatest pushing forces behind internet users (9).

Social media has begun to be considered a new type of addiction in medical literature as it has become one of the basic habits of humankind. This new addiction type is called "social media addiction", evaluated as one of the most important syndromes of the modern era and it is claimed that this addiction has increased especially with the spread of smartphones (10).

Addiction is defined as "being addicted, dependency" according to the Turkish Language Association, and addicted is defined as "depending on the will, power and help of something else, without freedom, autonomy" and "the people who are materially or spiritually overly attached to a person or thing" (11). In this context, addiction is deterioration in behavioral control and a condition that causes significant problems with craving, a person's behavior, and relationship with people. Addiction, like other chronic diseases, often reoccurs (12).

People have become more addicted to social media that can be used at any time and in any place. The research about social media has shown that especially young people are "addicted" to social networking sites; however, the effects of this "addiction" have not been fully identified yet (13). Some scholars have found that individuals with emotional and psychological disorders have a higher tendency to be addicted to online activities to meet their social and emotional needs as doing these activities on social networking sites is easy and anonymous (9). One of the most significant characteristics of social media addiction is spending a great deal of time on these sites. Some studies on this topic have shown that the amount of time spent in social media is related to interaction in real-life communities less (14).

Addiction, having an important potential for unwanted harmful things, is obtained as a result of engaging in this behavior, is considered as a repetitive strong motivation to perform a deliberate behavior without survival value (12), when combined with social media. Considering the innovation of this technology, addiction can cover a wide variety of issues. For instance, according to Maslow's hierarchy of needs, people's necessities are in five stages (15). The first two of these are physiological needs such as eating and drinking and the need for safety. In the third stage, a state of affection and belonging takes place. After the need for respect is met, the last step, the need for self-realization appears (15). Riva et al. in their work named "Psychology of Social Media: From Technology to Identity" having been held in 2015, investigated which of Maslow's five-stage needs falls under the need to use social networks. Some researchers have suggested that social networks help to meet the needs of their users in the following categories (1):

(i) Security requirements: People can choose who to communicate with, control what they say about themselves, and comment. On some social media networks such as Facebook, users can categorize their friends as close friends or just friends as there are some privacy settings to arrange this. Doing this makes people feel safe.

(ii) Relational needs: Users can exchange ideas with "friends" on social networks and share source applications. They can even search for a soulmate if necessary. Today, we can meet and communicate with some people whom we do not know and have never seen before. Looking at the profiles on Facebook, it is seen that there are people who have many friends that they cannot meet in real life.

(iii) The need for being loved and belonged: People can choose their "friends" on social networks. Therefore, if someone chooses to be a "friend" then "that person is worth it". People feel valuable with the numbers of their followers and friends on Facebook and Instagram. The more followers and friends they have on these kinds of social network sites, the more valuable they feel themselves.

(iv) The need for self-realization: A person can show himself or herself (who he/she is and what he/she does) as he/she wishes and transfers his/her abilities to some "friends". Another area where social media users meet their needs for self-realization is YouTube. YouTube, a social network that allows content sharing individuals' desire to spy and be seen (16) also freely shares the content produced by people and offers them to their "friends". This feature of YouTube suits the self-realization need in terms of showing oneself and his abilities.

The researchers have studied the relationship between social media and addiction on different sample groups and variables. Especially young people mostly use some new communication technologies and social media; therefore, social media can be the subject of research mainly on this age group. Research done in the USA found that there were some psychosocial factors in the relationship between university students and young adults and social media. Scholars have found that one of these factors was loneliness and first-year university students in the USA used social networks to connect and meet (9). In this sense, "friends" in social networks have become as close as a network when needed.

Social media platforms (Facebook, Twitter, Instagram, YouTube, etc.) are used to fulfill the necessity to communicate in daily life. Social media can sometimes be related to people's professions. Almost every profession has started running their business from online networks. For example, politicians have tended to make their announcements on Twitter; therefore, journalists have begun to use those social networks as a source. Apart from these, even ordinary citizens cannot stay away from social media and new internet-based illnesses have taken place in the literature (17).

Using more than needed, difficulty in stopping, and neglecting other activities are some of the symptoms used to describe social media addiction (14). Spending a lot of time on social networking sites is one of the most apparent features of social media addiction. The experts have developed different scales and tried to determine the state of social media addiction with different sample groups.

MATERIAL AND METHODS
Dataset: The sample of this research consists of 430 academicians with an average age of 35.31±7.42, 231 (53.7%) female and 199 (46.3%) male individuals.

Instruments: In the present study, the "Social Media Addiction Scale-Adult Forum (SMAS-AF)", developed by Şahin and Yağcı, was used to measure the social media addiction levels of academicians (18). This scale had a five-point Likert-type scale, consisting of 18 items. SPSS 22.0 program was used in the evaluation and the statistical significance limit was accepted as $p<0,05$.

Two reversed items of the 20-item scale were not included in the present study. Unlike Şahin and Yağcı, this study examined whether there was a statistically significant difference in terms of demographic variables in terms of the overall and sub-factors of the scale together with validity-reliability analysis.

Sahin and Yagci also applied exploratory factor analysis on the 20-item SMAS-AF scale they developed, and they obtained a 2-factor structure. In the present study, a 4-factor structure emerged as a result of the exploratory factor analysis of the 18 items used in the scale.

Descriptive Statistics of the Participants: The frequency values of the academicians participating in the present research according to their gender, age, marital status, and academic title were given in Table 1.

Table 1. Descriptive Statistics of Academicians Participating in The Research

		Frequency (N)	Percent (%)	Cumulative Percentage (Σ%)
Gender	Female	231	53.7	53.7
	Male	199	46.3	100.0
	Total	430	100.0	
Age	Between 20-29	85	19.8	19.8
	Between 30-39	242	56.3	76.0
	Between 40-49	86	20.0	96.0
	50 and 50+	17	4	100.0
	Total	430	100.0	
Marital Status	Single	167	38.8	38.8
	Married	263	61.2	100.0
	Total	430	100.0	
Academic Title	Research Assistant	139	32.3	32.3
	Instructor	115	26.7	59.1
	Assis. Prof.	122	28.4	87.4
	Asso. Prof.	30	7.0	94.4
	Professor	24	5.6	100.0
	Total	430	100.0	

Of the 430 academicians participating in the study, 231 (53.7%) were female and 199 (46.3%) were male. At the same time, 85 (19.8%) of the participants were in the 20-29 age group, 242 (56.3%) were in the 30-39 age group, 86 (20%) were in the 40-49 age group and 17 of them (4%) were in the age group of 50 and over.

Concerning their marital status, 167 of them (38.8%) were single and 263 (61.2%) of them were married. Concerning the academic titles of the participants, 139 (32.3%) of them were research assistants, 115 (26.7%) of them were lecturers, 122 (28.4%) of them were assistant professors, 30 (%7)

of them were associate professors and 24 (%5.6) of them were professors.

VALIDITY AND RELIABILITY ANALYSIS OF THE SCALE

Validity Analysis

Findings of exploratory factor analysis: In order to reveal the validity of the scale, exploratory factor analysis was performed.

The KMO coefficient of the Kaiser-Meyer-Olkin (KMO) test, having been conducted to determine whether the sample size used in the study was 0.907, showed that the sample size in the study was sufficient. The significance value (p-value) obtained as a result of the Bartlett Test (Bartlett Test of Sphericity) was less than 0.05 (p <0.05), the

data provides the assumption of multiple normal distributions (19,20) and thus confirmed the feasibility of factor analysis. In other words, since the Bartlett test was significant, it would be possible to say that there were high correlations between variables (21); therefore, the data set was suitable for factor analysis.

As stated in the method part of the study, Şahin and Yağcı applied exploratory factor analysis to the 20-item SMAS-AF scale they developed and obtained a 2-factor structure. In the present study, a 4-factor structure emerged as a result of the exploratory factor analysis of 18 items used in the scale.

Table 2. Explanatory factor analysis, reliability analysis and descriptive statistics of the scale

Factors:	Variables	$\overline{X}\pm SS$	Faktor Loads	Explained Variance	Cronbach's Alpha
First Factor:	1.I sometimes slack off my work because I spend too much time on social media.	3.92±1.25	.810	17.994	0.844
	2.I realize that my productivity decreases because of social media.	3.15±1.24	.810		
	3.I spend more time on social media than I plan.	3.39±1.25	.603		
	4.I sometimes neglect my family members because of social media.	3.28±1.14	.567		
	5.I cannot stay away from social media to be informed about current events.	3.10±1.14	.553		
	6.The people around me criticizes me as I spend too much time on social media.	3.39±1.25	.508		
	7.The first thing I do when I wake up is to check social media.	3.75±1.09	.493		
Second Factor:	8.My desire to be aware of the things about various social awareness activities fast makes me use social media more.	2.89±1.31	.782	15.482	0.760
	9.I spend more time on social media to see and share some special announcements.	3.31±1.25	.722		
	10.I cannot stop using social media to take part in humanitarian social projects.	3.22±1.24	.669		
	11.I use social media more to be in touch with social media groups.	2.66±1.36	.641		
Third Factor:	12.I prefer social media friendships to real life friendships.	3.24±1.36	.785	14.153	0.721
	13.I get angry when someone disturbs me while I am using social media.	3.15±1.24	.644		
	14.I express myself better to the people whom I connect on social media.	3.57±1.18	.610		
	15.I prefer to spend time on social media even if there are people around me.	3.75±1.09	.442		
Fourth Factor:	16.I see social media as an escape from real life.	2.91±1.20	.773	12.418	0.690
	17.Being on social media relaxes me when I feel upset.	3.79±1.06	.754		
	18.I feel free when I am on social media.	3.01±1.28	.585		
Evaluation Criteria	Kaiser-Meyer-Olkin Measure of Sampling Adequacy: .907 Barlett's Test of Sphericity; Approx. Chi-Square: 3003.763 Sig. : 0.000 Extraction Method: Principal Components Rotation Method: Varimax Explained Variance Total: 60.047 Cronbach's Alpha: 0.895				

As can be seen in Table 2, the exploratory factor analysis results of the scale indicated that there were 4 factors with an eigenvalue greater than 1. The variance explained by the first factor was found to be 17.994; the variance explained by the second factor was found to be 15.482; the variance explained by the third factor was found to be 14.153 and the variance explained by the fourth factor was found to be 12.418. The total variance explained was found to be 60.047%.

For the confirmatory factor analysis to be applied, there should be at least three variables that

measure each latent variable. For this reason, attention was paid to have at least three variables under any factor. In addition, the factor weight should be ± 0.30 and above (21). In the analysis results obtained shown in Table 2, the scale had good construct validity.

Naming the factors. Since the main reason for the exploratory factor analysis is to reduce many variables to a smaller number of factors, these factors must be named. They were named according to the common features of the variables used in the factor (22).

Table 3. Naming the Factors Obtained from Exploratory Factor Analysis (AFA) Scale

Clause No:	Factors:
First Factor: Virtual Tolerance (Slacking)	
S1	I sometimes slack off my work because I spend too much time on social media.
S2	I realize that my productivity decreases because of social media.
S3	I spend more time on social media than I plan.
S4	I sometimes neglect my family members because of social media.
S5	I cannot stay away from social media to be informed about current events.
S6	The people around me criticizes me because I spend too much time on social media.
S7	The first thing I do when I wake up is to check social media.
Second Factor: Virtual Interaction	
S8	My desire to be aware of the things about various social awareness activities fast makes me use social media more.
S9	I spend more time on social media to see and share some special announcements.
S10	I cannot desist from using social media to take part in humanistic social projects.
S11	I use social media more to be in touch with social media groups.
Third Factor: Virtual Communication	
S12	I prefer social media friendships to real life friendships.
S13	I get angry when someone disturbs me while I am using social media.
S14	I express myself better to the people whom I connect on social media.
S15	I prefer to spend time on social media even if there are people around me.
Fourth Factor: Emotional State	
S16	I see social media as an escape from real life.
S17	Being on social media relaxes me when I feel upset.
S18	I feel free when I am on social media.

The items belonging to factors obtained from exploratory factor analysis and their proper names were shown in Table 3. The first factor consisted of 7 items and was named "*Virtual Tolerance (Slacking)*"; the second factor consisted of 4 items and was named as "*Virtual Interaction*"; the third factor consisted of 4 items and was named as "*Virtual Communication*" and the fourth factor consisted of 3 items and was named as "*Emotional State Factor*".

Confirmatory Factor Analysis. To test the correctness and adaptation of the 4-factored structure as a result of exploratory factor analysis, confirmatory factor analysis was performed via the AMOS package program. The first factor "Virtual Tolerance (Slacking)" was coded as F1, the second factor "Virtual Interaction" was coded as F2, the third-factor "Virtual Communication" was coded as F3, and the fourth factor "Emotional State" was coded as F4, during the analysis.

Common values for model fit (model fit) were χ^2/df, GFI, CFI, and RMSEA. In some of the studies, the IFI, RMR, NFI and AGFI values were also examined; however, there was no limit to the values to be looked at. The reported values can change according to the values the researcher wants to draw attention to (23). The fit values for the model created were given in Table 4 and Table 5.

Standardized RMR was = .0629 χ^2/df=3.708≤5 0.85≤GFI=0.885 SRMR=0.0629≤0.08 and RMSEA=0.079≤0.08 according to these fit values, the first level multi-factor model fit the data.

Table 4. Values Obtained from DFA Results

Model	NPAR	CMIN	DF	P	CMIN/DF	RMR	GFI	AGFI	PGFI
Default model	46	463.463	125	.000	3.708	.084	.885	.843	.647
Saturated model	171	.000	0			.000	1.000		
Independence model	18	3052.383	153	.000	19.950	.450	.338	.261	.303

Table 5. RMSEA Values Obtained from DFA Results

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.079	.072	.087	.000
Independence model	.210	.204	.217	.000

Estimates output gives the results of the relationships between variables in the analysis. Regression, standardized regression, variance, correlation values, and whether these values were statistically significant were determined.

Regression weights and standardized regression weights showed the regression coefficients. Standardized regression coefficients have been used in interpretation.

Regression weights were given below in Table 6. Regression values show the power of the observed variables to predict hidden variables, that is, factor loadings. Factor loadings are important since the "p" values are less than 0.001 for each pairwise relationship below. The significant factor loadings showed that the items were loaded correctly on the factors. The three-star (***) showed that the p value was less than 0.001.

Table 6. Estimates and Standardized Estimates

			Estimate	S.E.	C.R.	P	Standardized Estimates
S7	<---	F1	1.000				.624
S6	<---	F1	.866	.085	10.155	***	.624
S5	<---	F1	.865	.082	10.570	***	.602
S4	<---	F1	.852	.074	11.452	***	.687
S3	<---	F1	1.145	.094	12.231	***	.749
S2	<---	F1	.979	.094	10.457	***	.597
S1	<---	F1	1.119	.091	12.283	***	.734
S11	<---	F2	1.000				.664
S10	<---	F2	.912	.086	10.555	***	.634
S9	<---	F2	.979	.092	10.638	***	.640
S8	<---	F2	1.163	.100	11.589	***	.727
S15	<---	F3	1.000				.735
S14	<---	F3	.904	.078	11.566	***	.635
S13	<---	F3	.759	.079	9.551	***	.517
S12	<---	F3	.537	.059	9.135	***	.499
S18	<---	F4	1.000				.626
S17	<---	F4	1.219	.113	10.768	***	.737
S16	<---	F4	.911	.095	9.539	***	.600

In addition, the standardized regression weights (standardized regression coefficients) regression coefficients were quite high given in Table 6.

In addition, covariance, correlation and variance values were given in Table 7 and Table 8. All covariance, correlation and variance values

were statistically significant since the p values of covariance, correlation and variance values were also less than 0.01.

The diagram of the suitable model obtained by confirmatory factor analysis was given in Figure 1.

Table 7. Estimates for Covariance and Correlations

			(Covariance) Estimate	S.E.	C.R.	P	(Correlations) Estimate
F1	<-->	F2	.395	.054	7.295	***	.612
F1	<-->	F3	.537	.062	8.677	***	.822
F1	<-->	F4	.463	.060	7.675	***	.748
F2	<-->	F3	.433	.055	7.930	***	.695
F2	<-->	F4	.326	.050	6.514	***	.553
F3	<-->	F4	.449	.057	7.905	***	.751
e6	<-->	e7	.409	.056	7.255	***	.442
e4	<-->	e5	-.219	.037	-5.877	***	-.354
e1	<-->	e2	-.141	.049	-2.881	.004	-.154
e13	<-->	e15	.184	.038	4.812	***	.284

Table 8. *Variances: (Group number 1 - Default model)*

	Estimate	S.E.	C.R.	P
F1	.678	.100	6.791	***
F2	.614	.089	6.929	***
F3	.631	.080	7.878	***
F4	.565	.089	6.340	***
e1	1.064	.080	13.323	***
e2	.796	.060	13.320	***
e3	.891	.065	13.602	***
e4	.551	.045	12.289	***
e5	.697	.061	11.477	***
e6	1.172	.087	13.527	***
e7	.728	.059	12.434	***
e8	.779	.067	11.656	***
e9	.762	.063	12.112	***
e10	.847	.070	12.020	***
e11	.743	.071	10.390	***
e12	.538	.052	10.268	***
e13	.765	.063	12.221	***
e14	.999	.074	13.430	***
e15	.547	.041	13.393	***
e16	.879	.074	11.926	***
e17	.707	.075	9.476	***
e18	.835	.068	12.285	***
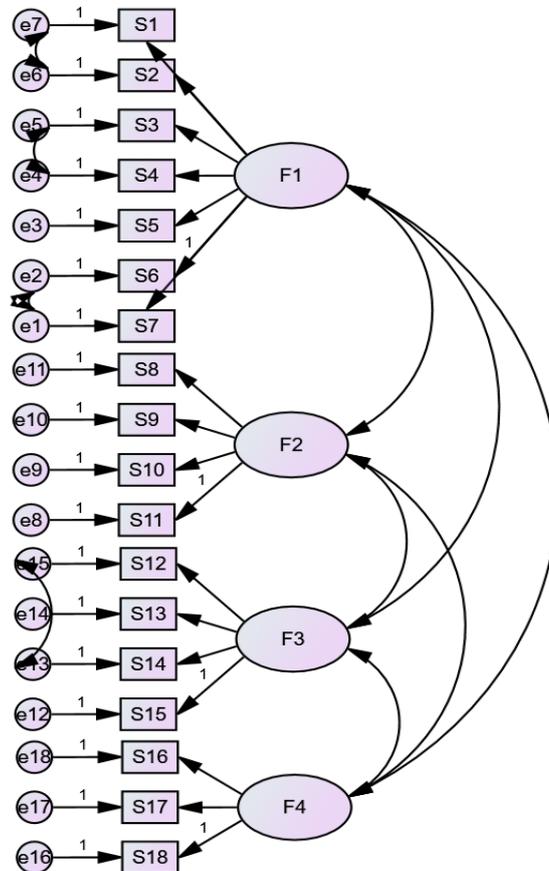
Figure 1. Confirmatory Factor Analysis (CFA)

Reliability Analysis: Reliability analysis was performed in terms of both overall and sub-factors of the 18-item scale directed to the participants, and the internal consistency coefficient (Cronbach's Alpha coefficient) was 0.895 for the overall scale and 0.844 for the Virtual Tolerance, the first factor given in Table 2.

Since the coefficient value obtained in terms of the total and first factor of the scale was higher than 0.80, the scale used was highly reliable (21). The internal consistency coefficients (Cronbach's Alpha coefficient) obtained for the second, third and fourth sub-factors of the scale also showed that they had sufficient reliability given in Table 2.

RESULTS

Examining the Differences of Social Media Addiction According to Demographic Variables: The hypotheses established to examine the difference of social media addiction according to demographic variables are as follows:

H_1: Social media addiction among academicians differs according to gender.

H_2: Social media addiction among academicians differs according to marital status.

H_3: Social media addiction among academicians differs according to age.

H_4: Social media addiction among academicians differs according to academic title.

In order to test the hypotheses, the t-test for independent variables with two categories and the F-test (ANOVA) for independent variables with more than two categories were used.

Analyzing the Differences of Social Media Addiction among Academicians According to Gender: To determine whether social media addiction among academicians differed according to gender, an independent sample t-test was conducted as two categories were belonging to gender.

Table 9. Mean Scores of the Social Media Addiction Level Among Academicians by Gender (Independent Samples Test)

	Gender	N	Mean	Std. Deviation	Sig. (p-value)
General Addiction	Female	231	2.3992	.72520	0.446
	Male	199	2.3470	.68722	
Virtual Tolerance (Slacking)	Female	231	2.4997	.90644	0.399
	Male	199	2.4279	.84899	
Virtual Interaction	Female	231	2.6742	.92619	0.834
	Male	199	2.6558	.89130	
Virtual Communication	Female	231	1.8680	.83366	0.726
	Male	199	1.8945	.73136	
Emotional State	Female	231	2.5065	.93604	0.086
	Male	199	2.3501	.94325	

When the p values obtained as a result of the t-test (equality of the means) were examined, as can be seen in Table 9, the social media addiction level of the academicians did not show a significant difference according to gender in terms of both total addiction and its sub-factors. However, Koh et al. concluded that gender was an important determinant of online social network addiction in the USA. In the same study, female academicians were more likely to become addicted after controlling for demographic and psychosocial factors (9).

In Sinan Aslan's master's thesis titled "Evaluating the Relationship Between Internet Addiction Levels and Health Problems that May Occur" prepared in 2011, it was found that male lecturers use the internet more than females (24). Similarly, a study done by Gezer and Sevim included interviews with 225 teachers in the 2004-2005 academic year (25). In the study, there was a difference in internet use based on gender. Male teachers use the internet 7 % more than females.

As can be seen in Table 9, in the present study, when the average values of social media addiction levels of academicians were examined in terms of gender, the addiction level of female academicians was higher than that of males in other sub-factors except the Virtual Communication and in the overall scale. Despite all the results, although this difference was not statistically significant, the increase in women's internet use was remarkable.

Analyzing the Differences of Social Media Addiction among Academicians According to Marital Status: To determine whether social media addiction among academicians differed according to marital status, an independent sample t-test was conducted.

Table 10. Mean Scores of Social Media Addiction Level Among Academicians by Marital Status (Independent Samples Test)

	Marital Status	N	Mean	Std. Deviation	Sig. (p-value)
General Addiction	Single	167	2.5010	.78146	**0.005**
	Married	263	2.2951	.64517	
Virtual Tolerance (Slacking)	Single	167	2.6322	.94922	**0.003**
	Married	263	2.3612	.81768	
Virtual Interaction	Single	167	2.7545	.92914	0.107
	Married	263	2.6093	.89351	
Virtual Communication	Single	167	1.9671	.88433	0.068
	Married	263	1.8251	.71504	
Emotional State	Single	167	2.5689	1.00821	**0.018**
	Married	263	2.3485	.88802	

As can be seen in Table 10, when the p-values obtained as a result of the t-test (equality of means) were examined, the social media addiction level of the academicians did not differ according to marital status in terms of Virtual Interaction and Virtual Communication sub-factors. However, there was a significant difference according to marital status in terms of General Dependence, Virtual Tolerance (Slacking) and Emotional State sub-factors.

As can be seen in Table 10, when the average values of the social media addiction levels of the academicians were examined in terms of marital status, the addiction level of singles was found to be higher than the married ones in both the overall (total addiction) and sub-dimensions of the scale. However, the difference in Virtual Interaction and Virtual Communication dimensions was not statistically significant. The effect of marital status on addiction was observed when the addiction level was examined in singles where Virtual Loafing and Emotional State sub-factors differed significantly.

Analyzing the Differences of Social Media Addiction among Academicians According to Age: To determine whether social media addiction among academicians differed according to age, the F-test (ANOVA) was conducted because there were more than two categories of age.

Table 11. Mean Scores of Social Media Addiction Level Among Academicians by Age (ANOVA)

	(I) Age	N	Mean	Std. Deviation	F	Sig.	(J) Age	Mean Difference (I-J)	Sig.
General Addiction	**Between 20-29**	85	**2.57**	0.80			**Between 40-49**	0.41	.001
	Between 30-39	242	2.38	0.67					
	Between 40-49	86	**2.16**	0.70	5.072	**.002**			
	50 and 50+	17	2.47	0.44					
	Total	430	2.38	0.71					
Virtual Tolerance (Slacking)	**Between 20-29**	85	**2.74**	0.98			**Between 40-49**	0.53	.000
	Between 30-39	242	2.47	0.85					
	Between 40-49	86	**2.21**	0.85	5.436	**.001**			
	50 and 50+	17	2.35	0.59					
	Total	430	2.47	0.88					
Virtual Interaction	**Between 20-29**	85	**2.88**	0.91			**Between 40-49**	0.44	.008
	Between 30-39	242	2.66	0.90					
	Between 40-49	86	**2.44**	0.91	3.846	**.010**			
	50 and 50+	17	2.90	0.75					
	Total	430	2.67	0.91					
Virtual Communication	**Between 20-29**	85	**2.03**	0.92			**Between 40-49**	0.30	.046
	Between 30-39	242	1.86	0.74					
	Between 40-49	86	**1.72**	0.71	3.728	**.011**			
	50 and 50+	17	**2.26**	0.82			**Between 40-49**	0.54	.044
	Total	430	1.88	0.79					
Emotional State	Between 20-29	85	2.49	1.02					
	Between 30-39	242	2.48	0.93					
	Between 40-49	86	2.26	0.92	1.196	.311			
	50 and 50+	17	2.43	0.78					
	Total	430	2.43	0.94					

As can be seen in Table 11 when the p-values obtained as a result of the F-test (ANOVA) were examined, the social media addiction level of the academicians did not differ only in terms of "Emotional State" sub-factor by age. However, it was observed that there was a significant difference according to age in terms of "General Dependence", "Virtual Tolerance", "Virtual Interaction" and "Virtual Communication" sub-factors. A posthoc multiple comparison tests was conducted to determine between which age groups this difference occurred.

When the p-values obtained as a result of the multiple comparison test were examined, it was seen that the difference in social media addiction levels among academicians was especially between the 20-29 age group and the 40-49 age group. However, there was a significant difference between the 40-49 age group and the 50 and over age group.

One may see in Table 11 that, when the average values of the social media addiction levels of academicians were analyzed according to age, addiction levels were found to be the highest in the 20-29 age group in terms of Virtual Tolerance (Slacking) and Emotional State sub-factors and the

total of the scale (general addiction) and it is also seen that addiction level was the most in the age group of 50 and more in terms of Virtual Interaction and Virtual Communication sub-factors. On the total scale, the addiction levels of academicians in the 40-49 age group were found to be the lowest on average. This situation can be explained by the fact that middle-aged academicians generally get prepared for the associate professorship and focus on their academic studies, especially at these ages.

When the p-values obtained as a result of the multiple comparison tests were examined, it was seen that the difference in social media addiction levels among academicians was especially between the 20-29 age group and the 40-49 age group. However, there was a significant difference between the 40-49 age group and the 50 and over age group.

Analyzing the Differences of Social Media Addiction among Academicians According to Academic Title: To determine whether social media addiction among academicians differed according to the academic title, the F-test (ANOVA) was conducted as more than two categories were belonging to the academic title.

Table 12. Mean Scores of Social Media Addiction Level Among Academicians by Academic Title

	(I) Academic Title	N	Mean	Std. Deviation	F	Sig.	(J) Academic Title	Mean Difference (I-J)	Sig.
General Addiction	**Research Assistant**	139	**2.49**	0.73			**Professor**	**0.34**	.072
	Instructor	115	2.44	0.70					
	Ass. Prof.	122	2.27	0.64	3.033	**.017**			
	Associate Professor	30	2.20	0.68					
	Professor	24	**2.15**	0.85					
	Total	430	2.38	0.71					
Virtual Tolerance (Slacking)	**Research Assistant**	139	**2.61**	0.91			**Professor**	**0.44**	**.039**
	Instructor	115	2.59	0.91					
	Ass. Prof.	122	2.30	0.77	3.691	**.006**			
	Associate Professor	30	2.26	0.80					
	Professor	24	**2.17**	0.97					
	Total	430	2.47	0.88					
Virtual Interaction	Research Assistant	139	2.79	0.92					
	Instructor	115	2.69	0.89					
	Ass. Prof.	122	2.57	0.90	1.375	.242			
	Associate Professor	30	2.51	0.76					
	Professor	24	2.50	1.10					
	Total	430	2.67	0.91					
Virtual Communication	Research Assistant	139	1.93	0.81					
	Instructor	115	1.93	0.78					
	Ass. Prof.	122	1.81	0.73	.658	.621			
	Associate Professor	30	1.75	0.80					
	Professor	24	1.88	0.99					
	Total	430	1.88	0.79					
Emotional State	**Research Assistant**	139	**2.58**	0.95			**Professor**	**0.58**	**.040**
	Instructor	115	2.45	0.95					
	Ass. Prof.	122	2.38	0.93	2.534	**.040**			
	Associate Professor	30	2.27	0.86					
	Professor	24	**2.00**	0.88					
	Total	430	2.43	0.94					

When the p-values obtained as a result of the F-test (ANOVA) were examined, it was seen that the social media addiction level of the academicians did not differ according to the academic title in terms of "Virtual Interaction" and "Virtual Communication" sub-scales; however, it was observed that there was a significant difference according to the academic title in terms of both "General Dependence", "Virtual Tolerance" and "Emotional State" sub-factors. A post-Hoc multiple comparison test was conducted to determine among which academic titles this difference was.

The result of the multiple comparison tests as seen in Table 12, showed that there was a significant difference between research assistants and assistant professors in terms of "Virtual Tolerance (Slacking)" sub-factors, and there was also a significant difference between research assistants and professors in terms of "Emotional State" sub-factor.

When the average values of the social media addiction levels of the academicians were examined by academic title, it was observed that as the academic title increased, social media addiction decreased in all sub-factors except "General Addiction" and "Virtual Communication" sub-factor as seen in Table 12.

DISCUSSION

As a result of today's conditions and technological developments, social media addiction is becoming more and more common in all segments of society. When the literature on social media addiction is examined, it is noteworthy that in our country, studies for young people are predominant. There are scarcely any studies on the relationship between social media and addiction for academicians. Based on this result, the present study aimed to reveal the social media addiction of academicians. And in the study, two main results were tried to be reached. The first was to reveal the validity and reliability of the scale used, and the second was to examine whether the social media addiction levels of academicians differed according to demographic characteristics, different from the study conducted by Şahin and Yağcı (18). For this purpose, 18 items of the 20-item SMAS-AF Scale developed by Şahin and Yağcı, a five-point Likert type (excluding the 2 items coded in reverse), were used and the scale was applied to 430 academicians. The result of the exploratory factor analysis showed that the scale had a 4-factor structure (Virtual Tolerance (Slacking), Virtual Interaction, Virtual Communication, and Emotional State sub-factors). The fit index values obtained as a result of the confirmatory factor analysis performed to verify this four-factor structure of the scale $\chi^2/df= 3.708 \leq 5$, $0.85 \leq GFI = 0.885$, $SRMR = 0.0629 \leq 0.08$, $RMSEA = 0.079 \leq 0.08$) showed that the scale had a good fit. For the total of the scale the internal consistency coefficient (Cronbach Alpha coefficient) was found as 0.895, 0.844 for Virtual Tolerance, 0.760 for Virtual Interactions, 0.721 for Virtual Communication, and 0.690 for Emotional State sub-factors. The analysis made revealed that the scale used to measure the social media addiction levels of academicians was valid and reliable.

As a result of the analyzes conducted to determine whether the social media addiction levels of the academicians differed according to gender, marital status, age, and academic title, although it was determined that the addiction level of female academicians was higher than that of males in terms of gender in total and sub-factors (except for the Virtual Communication sub-factor), this difference was not statistically significant.

In terms of marital status, a statistically significant difference emerged in the overall scale and the Virtual Tolerance (Loafing) sub-dimension, and when the average values were analyzed, it was seen that the social media addiction of single academicians was higher than the married ones. If this situation is interpreted as a result of the fact that married individuals have a family that should take time, it can be said that marital status is effective in social media addiction.

The current findings showed no significant difference in terms of "Emotional State" sub-factor according to age. However, a significant difference emerged especially between the 20-29 age group and the 40-49 age group in terms of the dimensions of "General Dependence", "Virtual Tolerance", "Virtual Interaction" and "Virtual Communication" sub-factors. Also, the social media addiction level of the academicians in the 40-49 age group was the least in all dimensions and the overall scale. This situation raises the possibility that academicians in the 40-49 age group, which can be described as middle age, are in the period of preparing for the associate professorship and focusing on academic studies in the most intensive.

Finally, the level of social media addiction among academics did not differ in terms of "Virtual Interaction" and "Virtual Communication" sub-factors according to the academic title; however, there was a significant difference in terms of both "General Dependence", "Virtual Tolerance (Slacking)" and "Emotional State" sub-factors. Also, there was a significant difference between research assistants and assistant professors in terms of "Virtual Tolerance (Slacking)" sub-factors; and there was a significant difference between research assistants and professor doctors in terms of the "Emotional State Factor" sub-factor. In the total of the scale (general addiction) and in all sub-dimensions except the Virtual Communication, social media addiction decreased as the academic title increased.

CONCLUSION

As a result, we concluded that the scale used was a measurement tool that could be used to determine the social media addiction levels of academicians, single academicians were more addicted than the married ones, young and old academicians were more addicted than the middle-aged ones, and social media addiction decreased as the academic title increased.

REFERENCES

1. Riva G, Wiederhold BK, Cipresso P. 1. Psychology of social media: from technology to identity. In the Psychology of Social Networking. 2015;1:4-14.
2. Sümen A, Evgin D. Social media addiction in high school students: a cross-sectional study examining its relationship with sleep quality and psychological problems. Child Indicators Research. 2021;14(6):2265-2283.
3. Haand R, Shuwang Z. The relationship between social media addiction and depression: a quantitative study among university students in Khost, Afghanistan. International Journal of Adolescence and Youth. 2020;25(1):780-786.
4. Siyez MD, Uz Baş A. Internet addiction and psychosocial factors. M. Kalkan, C. Kaygusuz (Eds.), Internet Addiction (pp.115-149). Ankara, Turkey: Anı Publishing. 2013.
5. Eroglu RS. Attachment styles and social communication networks in adolescents. M. Kalkan, C. Kaygusuz (Eds.), Internet addiction (pp. 151-162). Ankara, Turkey: Ani Publishing. 2013.
6. Aydin S, Koçak O, Shaw TA, Buber B, Akpinar EZ, Younis MZ. Investigation of the effect of social media addiction on adults with depression. Healthcare. 2021;9(4):450.
7. Han M, Tan XY, Lee R, Lee JK, Mahendran R. Impact of social media on health-related outcomes among older adults in singapore: qualitative study. JMIR aging. 2021;4(1):e23826.
8. Sine R. Alternative media and news. Konya, Turkey: Literaturk. 2017.
9. Koh YW, Tang CSK, Gan YQ. Influences of life stress, anxiety, self-efficacy and social support on social networking addiction among college students in China and the United States. J Addict Recovery. 2018;1009(2):1-8.
10. https://www.acibadem.com.tr/Hayat/Bilgi/social-medyanin-bagimlisi-olmayin Access Date: 05.09.2021.
11. http://www.tdk.gov.tr Access Date: 05.09.2021.
12. West R. EMCDDA insights: models of addiction. Publications Office of the European Union. Luxemburg. 2013.
13. Gerhart N. Technology addiction: how social network sites impact our lives. Informing Science. 2017;179-194.
14. Muench F, Hayes M, Kuerbis A, Shao S. The independent relationship between trouble controlling Facebook use, time spent on the site and distress. Journal of Behavioral Addictions. 2015;4(3):163-169.
15. Maslow AH. A theory of human motivation. Psychological Review. 1943;50(4):370-396.
16. Sari G. New stars of social media: changing popularity with youtubers. R. Sine & G. Sari (Eds.), New approaches to new media (pp. 277-297). Konya, Turkey: Literatürk. 2018.
17. https://www.guvenliweb.org.tr/dosya/mm1H8 Access Date:12.10.2021.
18. Sahin C, Yagci M. Social media addiction scale- adult form: validity and reliability study. Ahi Evran University Kirsehir Faculty of Education Journal (KEFAD). 2017;18(1):523-538.
19. Akgul A, Cevik O. Statistical analysis techniques. Ankara, Turkey: Emek Ofset. 2003.
20. Hair JF, Tatham RL, Anderson RE, Black W. Multivariate data analysis. New York: PrenticeHall. 1998.
21. Kalaycı S. SPSS applied multivariate statistical techniques. Ankara, Turkey: Asil Publishing. 2010.
22. Nakip M. Marketing research: techniques and SPSS supported applications. Ankara, Turkey: Seçkin Publishing. 2006.
23. Karagoz Y, Mutlu HT, Sagir S, Celil M. Developing a scale for determining factors affecting cargo company selection: the case of sivas. Journal of Economic and Social Research. 2019;15(2).
24. Aslan S. Evaluation of the relationship between academics internet addiction levels and related health problems. Unpublished Master's Thesis, Inonu University Health Sciences Institute. Malatya; 2011.
25. Gezer B, Sevim Y. The effect of internet usage on the professional development of teachers working in secondary education institutions. Eastern Anatolia Regional Studies. 2006;5(1):79-84