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Development of the Social Media Addiction Scale

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ABSTRACT *In this research, it was aimed to develop a scale to detect the social media addiction of university students. The data collected from 775 university students revealed that the scale was composed of four factors. Of these four factors, the first one called as "occupation" explained itself 17% of the variance, the second one called as "mood modification" explained itself 9,8% of the variance, the third factor called as "relapse" 8,8% of the variance itself, the forth factor called as "conflict" explained itself 23,5% of the variance. These four factor composed of 41 items totally explained 59% of the variance altogether. The correlation between the scale and "Facebook Addiction Scale" adapted from Internet Addiction test of Young for facebook (Çam and İşbulan, 2012) was found to be 0,75. Again, the correlation between the scale and "Generalized Problematic Internet Use Scale 2", the original version of which belongs to Caplan (2010) and whose Turkish adaptation work was conducted by Tutgun, Deniz and Moon (2011), was found to be 0,66. Internal consistency coefficient (α) was found to be ,967. Test-retest reliability co-efficient was found to be 0,84. As a result of the studies conducted, the scale was found to be valid and reliable and named "Social Media Addiction Scale" (SMAS).*

Keywords: *Social media addiction, Scale development, Validity, Reliability.*

Sosyal Medya Bağımlılığı Ölçeğinin Geliştirilmesi

ÖZ *Bu araştırmada, üniversite öğrencilerinde sosyal medya bağımlılığını belirlemeye yönelik bir ölçek geliştirmek amaçlanmıştır. 775 üniversite öğrencisinden elde edilen veriler, ölçeğin dört faktörden oluştuğunu ortaya koymuştur. Bu dört faktörden "meşguliyet" olarak isimlendirilen birinci faktör tek başına varyansın %17'sini, "duygu durum düzenleme" olarak adlandırılan ikinci faktör tek başına varyansın %9,8'ini, "tekrarlama" olarak adlandırılan üçüncü faktör tek başına varyansın %8,8'ini, "çatışma" olarak adlandırılan dördüncü faktör ise tek başına varyansın %23,5 açıklamıştır. Toplam 41 maddeden oluşan bu dört faktör birlikte toplam varyansın %59'unu açıklamıştır. Ölçek ile Young'ın İnternet Bağımlılığı testinden facebook için uyarlanmış olan "Facebook Bağımlılığı Ölçeği" (Çam ve İşbulan, 2012) arasındaki korelasyon 0,75 olarak bulunmuştur. Yine ölçek ile orjinali Caplan (2010)'a ait olan ve Türkçe adaptasyon çalışması Tutgun, Deniz ve Moon (2011) tarafından yapılmış "Genelleştirilmiş Problemli İnternet Kullanım Ölçeği 2" arasındaki korelasyon 0,66 olarak bulunmuştur. Ölçeğin iç tutarlılık katsayısı (α) ,967 olarak elde edilmiştir. Test tekrar test güvenilirlik kat sayısı 0,84 olarak bulunmuştur. Yapılan çalışmalar sonucunda, ölçeğin geçerli ve güvenilir olduğu anlaşılmış olup, "Sosyal Medya Bağımlılığı " (SMBÖ) olarak adlandırılan ölçek ortaya çıkmıştır.*

Anahtar sözcükler: *Sosyal medya bağımlılığı, Ölçek geliştirme, Geçerlik, Güvenilirlik*

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1 Introduction

People's behavior reveals a number of psychological problems. One of these psychological problems is addiction. There are many types of addiction that have been reported in the literature so far. Some of these types of addiction are game addiction (Fisher, 1994; Horzum, 2011; Horzum, Ayas and Çakır Balta, 2008), exercise addiction (Adams and Kirkby, 2002; Vardar et al., 2012; Yeltepe and İkizler, 2007), mobile phone addiction (Bianchi and Phillips, 2005; Choliz, 2010; Ha, Chun and et al, 2008), online sex addiction (Griffiths, 2012; Tüzer, 2011), shopping addiction (Clark and Calleja, 2008; Ruiz-Olivares et al., 2010), workaholism (Andreassen, Hetland and Pallesen, 2010; Naktiyok and Karabey, 2005) and internet addiction (Goldberg, 1996; Kandell, 1998; Young, 1996, 2009). Nowadays, with the emergence of web 2.0 technologies, it is seen that social media applications are widely used and the addiction problems resulting from the overuse are discussed in the recent studies. In this context, there are some studies about facebook addiction (Andreassen, 2012; Çam and İşbulan, 2012).

The researches made nowadays shows that young people largely made use of social media (Akyazı and Tutgun Ünal, 2013; Köroğlu and Tutgun Ünal, 2013; Usluel and Mazman, 2009; Vural and Bat, 2010). Most of the uses are emphasized to be exaggerated (Andreassen, 2012; Çam and İşbulan, 2012; Hazar, 2011). The negativities such as little and poor quality sleep, excessive mental occupation, recurrent thoughts to control and limit the use, failure to prevent access requests, to spend more time with the internet at any time, and to desire while not being online have been reported in the literature (Andreassen 2012; Çam and İşbulan, 2012; Dewald et al., 2010).

Recent studies have revealed that the excessive use of electronic media, negatively affects daily living activities (Andreassen, 2012; Suganuma, et al, 2007; Brunborg et al, 2011). Since facebook has becoming one of the most widely used internet site and the addiction harm to daily life, the researches has been in the direction whether especially Facebook addiction research is directly linked with sleeping habits (Andreassen, 2012).

Since social networks are the applications run over the Internet, it is not considered independent from the Internet. Excessive preoccupation for internet use, recurrent thoughts to control or limit the use, failure to prevent access requests, spend more time in each case on the internet, to desire the internet when not being online are seen as the significant problems in the internet use (Çam and İşbulan, 2012; Young, 2007). Today, since the mentioned problems have begun to be seen for the use of social networking, the studies have shifted in that direction.

Since social media addiction is a kind of internet addiction and social media use is increasing rapidly, it is needed for the process emerged as psychometric to evaluate a possible addiction (Andreassen, 2012; Kuss and Griffiths, 2011). Recent studies made attempts to produce measurement tools to reveal the social media addiction particularly in Facebook (Andreassen, 2012; Çam ve İşbulan, 2012; Wilson, Fornasier and White). In these studies, some addiction types such as (1) salience, (2), mood modification, (3) tolerance, (4) withdrawal, (5) conflict, and (6) relapse have been reported (Andreassen, 2012; Brown, 1993;

Griffiths, 1996, 2005). That the number of Facebook users in Turkey have exceeded 30 million (Socialbakers, 2013) requires a Turkish measurement tool to measure the addiction about this matter. There is a study in our country conducted in accordance with the development of measurement tool specific to facebook and applied on teacher candidates (Çam ve İşbulan, 2012). Social networks are divided into some applications such as Facebook, Twitter and Instagram hosting different types of features and user profile specific to each varies. Facebook is only one of the aforementioned applications. When it is taken in this context, it is needed a measurement tool to discuss social media addiction broader.

In this study, it is tried to develop a reliable and valid measurement tool to measure the social media addiction to cover the other social media platforms such as twitter, google+, instagram, foursquare, linkedin without remaining specific only to Facebook. In this context, it is aimed to develop a valid and reliable scale to measure social media addiction.

2. METHOD

Participants

In this study, "Social Media Addiction Scale" (SMAS) has been developed with 775 university students having at least one account in social media applications such as Facebook, Twitter and Instagram. The data collected from 3 universities in the province of Istanbul in 2014-2015 academic year. The ages of the participants vary from 17 to 45 (Mean=21,6; sd=2,59) and the distribution of them according to their universities, faculties and departments are seen in Table 1.

61,7% of the students participated in the study were female (n=478), and 38,3% of them were male (n=297) students. Besides, 26,7% of the students are continuing to the first class, 29,9% of them to the second class and 22,1% of them to the third class and 20,4% of them to the forth class.

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Table 1. Universities, Faculties and Departments of Participants

Faculties	Departments	Maltepe University		Marmara University		Fatih University		Total	
		f	%	f	%	f	%	f	%
Education	CEIT*	22	2,8	66	8,5	44	5,7	281	36,3
	Teacher Education for Gifted Children	42	5,5	-	-	-	-		
	Teaching Program of Mentally Disabled Students	31	4,0	38	4,9	-	-		
	Guidance and Psychological Counseling	38	4,9	-	-	-	-		
	Total	133	17,2	104	13,4	44	5,7		
Arts and Sciences	Psychology	75	9,7	-	-	-	-	227	29,3
	Social Work	38	4,9	-	-	-	-		
	Physics	-	-	38	4,9	-	-		
	Sociology	-	-	-	-	35	4,5		
	Turkish Language and Literature	-	-	-	-	21	2,7		
	Information and Document Management	-	-	20	2,7	-	-		
	Total	113	14,6	58	7,5	56	7,2		
Engineering	Computer Engineering	56	7,2	38	4,9	20	2,6	186	24,0
	Industrial Engineering	-	-	-	-	72	9,3		
	Total	56	7,2	38	4,9	92	11,9		
Communication	Journalism	-	-	43	5,5	-	-	43	5,5
Nursing	Nursing	-	-	38	4,9	-	-	38	4,9
Total		302	39	281	36,3	192	24,8	**775**	100

*CEIT: Computer Education and Instructional Technologies

Validity and Reliability Analysis

Content validity. In the study, a comprehensive pool of 78 items was obtained by making use of internet addiction, problematic internet use and facebook addiction studies in the literature. The draft scale prepared was assessed in terms of content by experts composed of five people. In this regard, inter rater reliability was calculated.

Construct validity. Within the scope of construct validity, 50 items in the item pool were applied to 775 university students and exploratory factor analysis was applied to the obtained data.

Discriminant validity. Each item in the scale and sub-scales were tested according to the total points and the distinctiveness of the points between upper and lower groups (27%) were tested with independent groups t-test.

Convergent validity. The relationships between SMAS and two different scales within the scope of convergent validity were tested by using pearson correlation analysis. These scales: (1) Facebook Addiction Scale (FAS) developed by Young and adapted to Turkish by Çam and İşbulan and (2) Generalized Problematic Internet Use Scale 2 (GPIUS2) developed by Caplan (2010) and adapted to Turkish by Tutgun, Deniz and Moon (2011).

Internal consistency. Cronbach alpha coefficients of each sub-scales and total of the scale were calculated within the scope of internal consistency.

Test-retest reliability. SMAS was applied to a group consisting of 38 university students in 4 week intervals. Pearson correlation analysis was applied to the data obtained was applied to identify the relationship; related sample t-test was applied in order to test the differences.

Linguistic Equivalence. SMAS was applied to a group consisting of 34 university students in 2 week intervals. Pearson correlation analysis was applied to the data obtained was applied to identify the relationship between two forms (English and Turkish); paired sample t-test was applied in order to test the differences.

In order to develop the scale, explanatory factor analysis and item analysis was conducted within the scope of the validity and reliability, SPSS 18 (PASW) package program was used. In all statistical processes conducted in the research, significance level was accepted as 0,05.

Procedure

The form consisting of 50 items of the draft scale prepared obtained after expert opinions was applied to the students in fall semester of 2014-15 academic year. The applications were conducted in classroom environment based on a voluntary basis. The application of the scale lasted for about 15 minutes.

3. FINDINGS

Validity Studies

Expert opinions and content validity, exploratory factor analysis and construction validity studies, discriminant validity studies and convergent validity studies were conducted in this section.

Expert Opinions and Content Validity

In the study, the field experts group was formed with 5 people. In order to place in the interdisciplinary opinions, 2 of the experts were selected from Computer Education and Instructional Technologies Department, 2 of them from Communication and 1 of them from the Department of Guidance and Psychological Counseling.

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Candidate assessment tool consisting of 78 items was sent to the experts via e-mail in the first phase. Measuring tool was prepared intended to be graded of each expert opinion as "the item measures the targeted construction", "item is associated with the construction but unnecessary" or "the item does not measure the targeted construction". In addition, a "comment" column where experts could write their opinion about each item was included. Then the item compliance rates of the data obtained from the experts were calculated with the help of the formula proposed by Miles and Huberman (1994, as cited in Tavşancıl and Aslan, 2001) are given in Table 2.

Table 2. Item Compliance Rates according to Expert Opinions

Item number	1	2	3	4	5	6	7	8	…	73	74	75	76	77	78
Compliance rates	.40	.20	.80	.80	1	1	.40	1	…	1	.80	.80	.60	1	.80

Compliance rates of the items is 1 when all the experts recommended as "appropriate to remain of the item in the scale" and when some of them recommended as "appropriate to remain of the item in the scale" it may take the varying values from 0 to 1 and when all of the experts recommended as "appropriate to remain of the item in the scale", it is 0. Accordingly, when the compliance rate is 1 or close 1, the item is considered to be highly compatible. In the study, 0.80 compliance rate was looked for the items decided to remain in the measurement tool. The items below this rate were omitted from the measurement tool. It was observed that the measurement tool that was 78 items at first reduced to 50 items after the expert opinions were received.

Finally, the measurement tool was sent to a Turkish expert to be examined in terms of spelling and grammar. Accordingly, by fixing typos in the sentences, the necessary corrections were made as recommended.

Exploratory Factor Analysis and Construction Validity Studies

Factor analysis was conducted to determine the factor loads, to reveal the factor structure and to ensure the construction validity of social media addiction scale developed with 775 students in the study group. The suitability of the data for explanatory factor analysis was examined with Kaiser -Meyer- Olkin (KMO) coefficient and Barlett Sphericity test. KMO is testing whether the distribution is sufficient for factor analysis. Akgül and Çevik (2003) indicate that the range of 0.800 to 0.900 for the KMO test results is ideal. The Bartlett test is based on the principle of "Being able to be tested of correlation matrix for the variables, (based on the assumption of being no relationship between the variables) against the unit matrix" (Yurdugül, 2012). Therefore, Bartlett Test known as the sphericity test tests the significance of the correlation matrix. As a result of the analysis conducted with the data obtained, KMO value of the tool was found to be .972, and the significance value of Barlett test was found to be 0.000 ($\chi 2$ = 30230.0 p. =. 000). These two findings show that sample size is sufficient and the data is appropriate in order that factor analysis can be made.

In determining the number of factors, it is made use of eigenvalues. The factors having eigenvalue statistics is greater than 1 are considered as significant and they can be taken as 1 or greater than 1 (Kalaycı, 2009). The factors having this value smaller than 1 are not taken into account. In the research, the factors whose eigenvalues are greater than 1,5 are taken into account. According to factor analysis results, a four factor structure was obtained. The eigenvalues of the factors obtained as a result of factor analysis in Table 3 and the variance amounts explained are given.

Table 3. Variance Rates Explained by the Factors of SMAS

Factors	Eigenvalue	Variance (%)	Cumulated Variance (%)
Factor1	21,560	23,501	23,501
Factor2	4,785	17,078	40,579
Factor3	1,798	9,845	50,424
Factor4	1,515	8,892	59,316

As shown in Table 3, the variance ratio explained by the first factor whose eigenvalue is 21,560 is 23,501%; and the variance ratio explained by the second factor whose eigenvalue is 4,785 is 17,078%; the variance ratio explained by the third factor whose eigenvalue is 1,798 is 9,845%; the variance ratio explained by the forth factor whose eigenvalue is 1,515 is 8,892%. Total variant ratio explained was found to be 59,316%. In factor analysis, the higher the variance ratio is, the stronger the factor structure of the scale is. According to Tavşancıl (2002), the variance rates changing in the range of 40-60% are found to be ideal. The rate of 59% found in the research is accepted quite well in social sciences.

Another method used to determine the number of factors is scree pilot test. In factor analysis is scree pilot, a number of factors pointed out by the point where the slope began to disappear is identified. Accordingly, the scree pilot related to the sub-dimensions of SMAS is given in Figure 1.

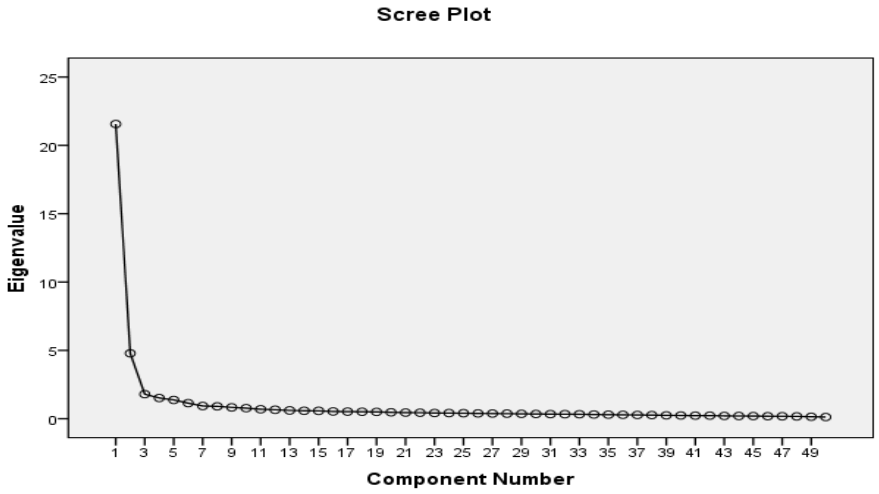

Figure 1. Scree Pilot Belonging to SMAS Sub-Dimensions

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When Figure 1 is examined, a four-factor structure is observed. Since SMAS is understood to be four-factor, it was shifted to the phase of rotation of the factors in order to correlate the factors with the items. At this stage, most commonly used method is orthogonal rotation. The factors obtained in this rotation type are not in correlation with each other and the most commonly used technique is varimax (Kalaycı, 2009). Thanks to this technique, the factor loads of the items and the factors where the item is placed in are revealed. Which factors are located under four factors obtained in the research are given with the factor loads respectively from big to small in Table 4.

Table 4. Factor Load Values of SMAS Items

Item No	Items	Factor 1	Factor 2	Factor 3	Factor 4
I45	There happens times that I allocate less time to my personal care due to social media use.	,773			
I33	There happens times that I neglect my friends due to social media.	,765			
I37	My school studies or works are interrupted due to the time I spent at social media.	,761			
I35	In order to spend more time at social media, I neglect activities regarding school or work.	,751			
I43	There happens times that I forget eating due to social media.	,745			
I49	The use of social media causes problems in my life.	,742			
I32	There happens to be times that I neglect my spouse and family members due to social media.	,729			
I48	The use of social media causes me to encounter problems in my relations with individuals who are important for me.	,728			
I34	Due to social media, I can not complete the activities that I start in a timely manner.	,715			
I38	My productivity decreases due to social media.	,695			
I42	I find myself trying to hide the time I spent on social media.	,693			
I31	I give less priority to my hobbies and leisure activities due to social media.	,673			
I41	People criticize me for the time I spend at social media.	,666			
I40	I prefer spending time at social media rather than spending time with my friends.	,649			
I46	Alterations/disturbances occur in my sleeping order due to social media use.	,638			
I36	I prefer spending time at social media rather than going out with my friends.	,637			
I30	I use social media more although it negatively affects my profession/studies.	,618			
I47	There happens times that I encounter physical problems (back, head, eye aches) due to social media use.	,608			
I50	As the things I have to do increase, my desire to use social media increases at that rate.	,584			
I6	I wonder of what's happening at social media.		,775		
I3	When I don't check the social media for a while, the thought of checking it occupies my mind.		,730		
I7	There are times that I spent more time at social media than I think.		,727		
I10	There are times that I use social media more than I plan.		,705		
I9	I can't give up using social media for a long while.		,681		
I2	If there's anything I have to do first I check the social media.		,679		
I5	When I'm not connected to the internet, I intensely think of checking the social media.		,671		
I11	I can't understand how time passes while using social media.		,659		
I1	I pretty much think about what's going on at social media recently.		,640		
I8	Each time I decide to cut my connection with social media, I tell myself "a few more minutes".		,633		
I4	I think that my life would be boring, blank and tasteless without social media.		,596		
I13	I allocate long periods to actions (games, chat, viewing the photographs etc) relevant to social media.		,553		
I18	When I get bored of my problems, the best place that I shelter is social media.			,769	
I17	I prefer surfing at social media in order to be relieved from negative thoughts regarding my life.			,747	
I14	I use social media in order to forget my personal problems.			,688	
I16	I spend time at social media at times when I feel alone.			,628	
I21	I forget about everything along the period that I use social media.			,563	
I25	I make useless efforts in order to leave the use of social media.				,721
I26	I make useless efforts in order to regulate the use of social media.				,710
I27	I try to decrease the time that I spent at social media, and I become unsuccessful.				,703
I24	I desire intensively to regulate my use of social media.				,701
I23	There happens to be times when I try to stop using social media and become unsuccessful.				,651

Factor load value is a coefficient explaining the correlation of the items with sub-dimensions. In sample studies about the subject, it is explained that the factor loads varying in the range of 0,30-0,40 in the formation of factor pattern can be taken as sub-break point (Çokluk et al, 2010). Sub-break point in the research was accepted to be ,55. So, 9 items having high load value entering into both dimensions were omitted. Among the items omitted from the measurement tool, 12, 15, 19, 20, 22, 28, 29, 39, 44 are located. Before factor analysis, it was observed that the measurement tool consisting of 50 items reduced to 41 items before factor analysis at this phase.

Accordingly, when the table 4 is analyzed, it is seen that the load values consisting of 19 items belonging to the first factor vary from ,773 to ,584; the load values belonging to the second factor consisting of 12 items from ,775 to ,553 ; the load values belonging to the third factor consisting of 5 items from ,769 to ,563 and the factor loads belonging to the forth factor consisting of again 5 items from ,721 to ,651.

After the calculation of the factor load values, it was tried to be named of the factor in other words the dimensions began to be named without passing to the item analysis work. At this stage, the content of the items were taken into account. Orders of sizes were obtained by sequencing of the item numbers from small to big.

Accordingly, the items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12th items in the measurement tool form the first dimension and it is seen that all of these items are associated with the "occupation". The occupation forming this sub-scale means a person's thinking the social media activities intensively and dealing with these activities in other words it means being occupied with them. When the items in this dimension are examined, it is seen that there are some expressions stating the occupation such as "When I don't check the social media for a while, the thought of checking it occupies my mind", "There are times that I use social media more than I plan", "Each time I decide to cut my connection with social media, I tell myself "a few more minutes"".

The items of 13, 14, 15, 16 and 17 in the measurement tool form the second dimension and when their contents are examined, it is seen that all of them are related to "mood modification". This mood modification in the subscale means changing in the mood of a person by social media activities and during these activities, some changes occur in the mood of a person. It is seen that this dimension where the items such as "I use social media in order to forget my personal problems", "When I get bored of my problems, the best place that I shelter is social media" "I prefer surfing at social media in order to be relieved from negative thoughts regarding my life " are associated with the mood modification.

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18, 19, 20, 21 and 22th items in measurement tool constituted the third dimension. When the contents of the items are examined, this dimension was found as related with the "relapse". After the relapse in this sub-scale, staying away from social media or control behaviors, it means a trend to return of a person back to the previous patterns and when this person stays away from the social media or he tries to limit the use of social media, previous use habits relapse at each time. Accordingly, it is seen that this dimension where some items such as "I make useless efforts in order to regulate the use of social media", "I try to decrease the time that I spent at social media, and I become unsuccessful" are involved is related to be used of the efforts being reused intensively although social media efforts are being tried to taken under control.

The items of 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40 and 41 situated in the measurement tool are seen to form the forth dimension and this dimension was found to be related with "conflict". The conflict in this sub-scale means that social media activities negatively affect the life of an individual in his relationships by resulting in a contradiction. this dimension where some items such as "I use social media more although it negatively affects my profession/studies", "As the things I have to do increase, my desire to use social media increases at that rate", "The use of social media causes problems in my life" are involved is related to the fact that social media causes problems in a person's life, that is related to the conflict.

Thus, factor structure of Social Media Addiction Scale (SMAS) has been identified and after being named of the factors, the relationship of each factor and dimension with each other has been detected. Accordingly, Pearson correlation analysis results are presented in Table 5.

Table 5. The Relationship of SMAS and Sub-dimensions with Each Other

Sub Scales/Scale	Occupation	Mood Modification	Relapse	Conflict
Mood Modification	0,716			
Relapse	0,540	0,521		
Conflict	0,536	0,793	0,704	
SMAS	0,833	0,793	0,787	0,894

When Table 5 is examined, significant correlations at the level of ,001 were detected between SMAS and four dimensions and among four dimensions with each other. At the end of this section, SMAS reduced to 41 items and detected to be formed of four dimensions was detected. In the next step, the discriminant validity for the items has been continued.

Discriminant Validity Studies

At this stage, distinctiveness studies were conducted in order to determine to what extent the items in the measurement tool can measure the property wanted to be measured. Item distinctiveness index (D) shows to what extent the items can distinguish the people related to

the feature measured. In other words, it is the power of the scale to distinguish the individuals having high level of feature that the scale aims to measure and the ones who have a low level. Item distinctiveness index can vary between -1 and +1. Being negative of this value show that the item distinguishes the individuals reversely in terms of measured feature. Therefore, such items should be omitted from the test (Büyüköztürk et al., 2012). Item distinctiveness value can be found by being tested of the differences between item average scores of the lower 27% and top 27% groups by using independent t-test. That the differences between the groups observed in the desirable way were found to be significant can be evaluated as an indicator of the internal consistency of the measurement tool (Büyüköztürk, 2011).

In the item discriminant validity studies, first of all the total points received by the participants from the scale were calculated and they were ordered from big to small. Then, considering the value of 27%, cutting process was applied to cover 214 people from the top (highest scores) and 214 people from the bottom (lowest scores), so 428 people consisting of 2 groups including 214 people each were obtained. For the resulting top and bottom groups, independent t-test was applied and when the differences between the groups were examined, results were found to be significant for all items (p = 0.000). Mentioned processes are also applied to each sub-scales and the results are presented in Table 6.

As a result, when item discriminant validity results are examined, in the total of the scale and sub-scale, the results were found to be significant and it was concluded that the items could measure the features wanted to be measured.

Table 6. Discriminant Validity Results

New Item Num.	Item Number	Groups	N	Mean	sd	df	t	p
1	1	top group	214	3,54	,977	417,990	12,038	,000
		subgroup	214	2,32	1,123			
2	2	top group	214	3,46	1,023	424,065	14,981	,000
		subgroup	214	2,02	,957			
3	3	top group	214	3,61	1,000	395,817	23,982	,000
		subgroup	214	1,56	,753			
4	4	top group	214	3,37	1,130	324,310	23,449	,000
		subgroup	214	1,32	,600			
5	5	top group	214	3,54	1,000	322,322	29,581	,000
		subgroup	214	1,26	,526			
6	6	top group	214	3,84	,953	425,989	17,143	,000
		subgroup	214	2,26	,948			
7	7	top group	214	3,94	,904	425,225	23,468	,000
		subgroup	214	1,93	,867			

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8	8	top group	214	3,57	1,067	333,661	26,473	,000
		subgroup	214	1,36	,595			
9	9	top group	214	3,71	1,013	300,337	32,341	,000
		subgroup	214	1,24	,469			
10	10	top group	214	3,90	,833	422,709	27,548	,000
		subgroup	214	1,77	,762			
11	11	top group	214	4,06	,889	424,139	26,117	,000
		subgroup	214	1,89	,832			
12	13	top group	214	3,45	,976	395,964	20,520	,000
		subgroup	214	1,74	,736			
13	14	top group	214	3,38	1,063	340,345	24,022	,000
		subgroup	214	1,37	,612			
14	16	top group	214	3,77	,935	417,007	22,969	,000
		subgroup	214	1,83	,807			
15	17	top group	214	3,40	,928	377,732	25,427	,000
		subgroup	214	1,44	,638			
16	18	top group	214	3,24	1,086	294,681	24,937	,000
		subgroup	214	1,21	,485			
17	21	top group	214	2,84	1,077	262,398	21,845	,000
		subgroup	214	1,14	,369			
18	23	top group	214	3,08	1,054	278,418	24,966	,000
		subgroup	214	1,15	,418			
19	24	top group	214	3,05	1,084	376,674	19,924	,000
		subgroup	214	1,26	,742			
20	25	top group	214	2,78	1,144	230,287	21,618	,000
		subgroup	214	1,06	,231			
21	26	top group	214	2,75	1,138	232,449	21,498	,000
		subgroup	214	1,04	,243			
22	27	top group	214	2,79	1,108	253,848	21,442	,000
		subgroup	214	1,09	,345			
23	30	top group	214	2,90	1,104	234,801	23,787	,000
		subgroup	214	1,06	,250			
24	31	top group	214	2,91	1,124	273,187	21,767	,000
		subgroup	214	1,12	,427			
25	32	top group	214	2,79	1,190	234,257	20,689	,000
		subgroup	214	1,07	,266			
26	33	top group	214	2,63	1,147	234,557	19,482	,000
		subgroup	214	1,06	,258			
27	34	top group	214	2,88	1,096	236,135	23,556	,000
		subgroup	214	1,07	,256			

New Item Num.	Item Number	Groups	N	Mean	sd	df	t	p
28	35	top group	214	2,73	1,138	234,890	20,972	,000
		subgroup	214	1,06	,258			
29	36	top group	214	2,44	1,235	263,191	15,279	,000
		subgroup	214	1,07	,427			
30	37	top group	214	2,72	1,123	223,727	21,758	,000
		subgroup	214	1,03	,178			
31	38	top group	214	2,81	1,152	294,172	19,088	,000
		subgroup	214	1,17	,512			
32	40	top group	214	2,42	1,267	275,978	14,176	,000
		subgroup	214	1,10	,493			

33	41	top group	214	2,70	1,212	234,098	19,489	,000
		subgroup	214	1,05	,270			
34	42	top group	214	2,46	1,220	218,271	17,203	,000
		subgroup	214	1,02	,136			
35	43	top group	214	2,19	1,172	224,207	14,164	,000
		subgroup	214	1,04	,190			
36	45	top group	214	2,43	1,191	214,403	17,415	,000
		subgroup	214	1,00	,068			
37	46	top group	214	3,02	1,140	263,936	22,988	,000
		subgroup	214	1,13	,397			
38	47	top group	214	2,89	1,067	269,242	22,315	,000
		subgroup	214	1,16	,391			
39	48	top group	214	2,56	1,098	260,631	18,822	,000
		subgroup	214	1,07	,370			
40	49	top group	214	2,54	1,086	245,178	19,115	,000
		subgroup	214	1,07	,299			
41	50	top group	214	2,86	1,181	238,903	21,297	,000
		subgroup	214	1,09	,292			

Table 7. Discriminant Validity Results of the Scale and Sub-Scales

Factors and SMAS	Groups	N	Mean	sd	df	t	p
Occupation	top group	214	50,8879	13,99083	223,339	31,467	,000
	subgroup	214	20,4299	2,18020			
Mood Modification	top group	214	43,9907	7,65941	352,727	38,003	,000
	subgroup	214	20,6682	4,68313			
Relapse	top group	214	16,6308	3,73904	328,998	33,128	,000
	subgroup	214	6,9907	2,03489			
Conflict	top group	214	14,4579	4,41781	242,921	28,354	,000
	subgroup	214	5,5981	1,17373			
SMAS	top group	214	125,9673	19,04662	252,857	53,067	,000
	subgroup	214	53,6869	5,85186			

Convergent Validity Studies

In order to determine the validity of the similar scales validity of SMAS (equity validity) based on the criterion, "Facebook Addiction Scale" (FAS) was developed by Young and adapted to Turkish by Çam & İşbulan (2012) and "Generalized Problematic Internet Use Scale 2" (GPIUS2) whose original form belongs to Caplan (2010 and Turkish adaptation study was conducted by Tutgun, Deniz and Moon (2011) were used. Accordingly, SMAS and the other two measurement tools were applied to 70 students simultaneously and Pearson correlation coefficients are given in Table 8.

Table 8. The Relationship of SMAS with FAS and GPIUS2

Scales	FAS	GPIUS2
SMAS	0,752	0,667

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According to Table 8, a significant correlation between SMAS and FAS and GPIUS2 was detected at the level of (p< 0,01).

Reliability Studies

Internal consistency analysis and test-retest reliability were conducted in this section.

Internal Consistency Analysis

At this stage, in order to provide the reliability of the measurement scale, internal consistency coefficients related to SMAS and sub-dimensions were determined. Cronbach Alpha internal consistency coefficients calculated based on the variant of an item are placed in Table 9.

Table 9. The Reliability of SMAS and Sub-Dimensions

Factors/ SMAS	Item Count	Cronbach Alpha Coefficient
Occupation	12	,932
Mood Modification	5	,892
Relapse	5	,914
Conflict	19	,958
SMAS	41	,967

When Table 9 is examined, ,967 Cronbach Alfa value calculated in the total of social media addiction scale shows high degree of reliability. At the same time, when the sub- dimensions of SMAS were examined, Cronbach Alfa values were found ,892 at lowest (mood modification) and ,958 at highest (conflict). Thus, it was seen that sub-dimensions also required high level of reliability.

Test-Retest Reliability

Test-retest is a technique used to determine the reliability of the measurement scale with the application of measurement tool to the same group after a certain time again. The final form of Social Media Addiction consisting of 41 items and four dimensions (Annex-1) was used in test-retest studies. For this the measurement tool was applied to a group including 38 people in 4 weeks intervals and the findings obtained are seen in Table 10.

Table 10. Related Sample t-test and Pearson Correlation Coefficient

	Independent Group t-Test					Correlation Test	
SMAS and Factors*	**Mean**	**sd**	**df**	**t**	**p**	**r**	**p**
Occupation$_1$&Occupatin$_2$	1,78	7,58	37	1,454	,154	,67	,000
Mood modification$_1$& Mood modification$_2$	,65	3,92	37	1,033	,308	,67	,000
Relapse$_1$&Relapse$_2$	,42	3,34	37	,777	,442	,78	,000
Confilict$_1$&Confilict$_2$	,34	12,37	37	,170	,866	,59	,000
SMAS$_1$&SMAS$_2$	3,21	15,13	37	1,308	,199	,84	,000

*Located values in table 1 and 2 (for example, Occupation$_1$, Occupatin$_2$) means first and second application

When Table 10 was examined, significant relationships were detected between the successive applications and significant differences were not detected. From the obtained results, it was understood that the test re-test reliability of SMAS and sub-scales due to time was provided.

Linguistic Equality Studies

The last version of social media scale developed in the study was applied to the same group in 2 weeks interval as in both Turkish and English and the convenience of the scale for both languages was detected. The obtained results are seen in Table 11.

Table 11. Paired Group t-Test and Pearson Correlation Coefficient

Scale	Groups	Paired Group t-Test						Correlation Test	
		n	**Mean**	**sd**	**df**	**t**	**p**	**r**	**p**
SMAS	**Turkish**	34	82,05	19,26	8,34	1,788	,083	,91	,000
	English	34	79,50	20,41					

When Table 11 is examined, it is seen that there is a high degree of relationship between both groups. It was detected that there was no difference between Turkish and English version of the scale applied to the same group in 2 weeks interval.

4. RESULTS AND DISCUSSION

Social Media Addiction Scale (SMAS) is a measurement tool developed to measure the social media addictions of the university students by the researchers. After all reliability and validity studies, a structure consisting of 41 items and four factors was displayed. SMAS is a five point likert scale graded with the frequency expressions in the range of "Always",

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"Often", "Sometimes", "Rarely", and "Never" and the highest point to be taken from the whole of the scale is 205 and the lowest point is 41. Increasing in the points taken from SMAS means increasing in social media addiction. In order to help the interpretation of the points taken from SMAS, the range of the points to be taken from the scale were detected and range coefficients were calculated in accordance with five point likert scale. Accordingly, from 41 to 73 means "No Addiction", from 74 to 106 means "Less Addicted", from 107 to 139 means "Moderate Addicted", 140 to 172 means "High Addicted" and from 173 to 205 means "Very High Addicted".

SMAS explains 59% of the total variance and this rate is accepted as quite high in social sciences. Besides, cronbach alpha value that is the internal consistency coefficient of the scale was found to be .967. As a result of the studies conducted, SMAS emerged as a valid and reliable scale.

Besides, social networks are commonly used by the young in other words by network generation. Considering that the network generation uses social networks intensively to make close relationships with their fellows and their opposite sex, conducting social media addiction researches on the young are seen to be important.

It is thought that the scale developed will contribute to compensate the lack of measurement tool in the field of social media addiction in Turkey and besides, the studies on university students via this scale will be incited to increase.

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Annex-1. Social Media Addiction Scale (SMAS)

Item No	Items	Never	Rarely	Sometimes	Often	Always
1	I pretty much think about what's going on at social media recently.					
2	If there's anything I have to do first I check the social media.					
3	When I don't check the social media for a while, the thought of checking it occupies my mind.					
4	I think that my life would be boring, blank and tasteless without social media.					
5	When I'm not connected to the internet, I intensely think of checking the social media.					
6	I wonder of what's happening at social media.					
7	There are times that I spent more time at social media than I think.					
8	Each time I decide to cut my connection with social media, I tell myself "a few more minutes".					
9	I can't give up using social media for a long while.					
10	There are times that I use social media more than I plan.					
11	I can't understand how time passes while using social media.					
12	I allocate long periods to actions (games, chat, viewing the photographs etc) relevant to social media.					
13	I use social media in order to forget my personal problems.					
14	I spend time at social media at times when I feel alone.					
15	I prefer surfing at social media in order to be relieved from negative thoughts regarding my life.					
16	When I get bored of my problems, the best place that I shelter is social media.					
17	I forget about everything along the period that I use social media.					
18	There happens to be times when I try to stop using social media and become unsuccessful.					
19	I desire intensively to regulate my use of social media.					
20	I make useless efforts in order to leave the use of social media.					
21	I make useless efforts in order to regulate the use of social media.					
22	I try to decrease the time that I spent at social media, and I become unsuccessful.					
23	I use social media more although it negatively affects my profession/studies.					
24	I give less priority to my hobbies and leisure activities due to social media.					
25	There happens to be times that I neglect my spouse and family members due to social media.					
26	There happens times that I neglect my friends due to social media.					
27	Due to social media, I can not complete the activities that I start in a timely manner.					
28	In order to spend more time at social media, I neglect activities regarding school or work.					
29	I prefer spending time at social media rather than spending time with my friends.					
30	My school studies or works are interrupted due to the time I spent at social media.					
31	My productivity decreases due to social media.					
32	I prefer spending time at social media rather than going out with my friends.					
33	People criticize me for the time I spend at social media.					
34	I find myself trying to hide the time I spent on social media.					
35	There happens times that I forget eating due to social media.					
36	There happens times that I allocate less time to my personal care due to social media use.					
37	Alterations/disturbances occur in my sleeping order due to social media use.					
38	There happens times that I encounter physical problems (back, head, eye aches) due to social media use.					
39	The use of social media causes me to encounter problems in my relations with individuals who are important for me.					
40	The use of social media causes problems in my life.					
41	As the things I have to do increase, my desire to use social media increases at that rate.					

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