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THE DEVELOPMENT OF THE SELFIE ATTITUDE SCALE: A VALIDITY AND RELIABILITY STUDY[i]

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Abstract:
The aim of this study was to develop a valid and reliable measurement tool aimed at measuring high school students' attitudes toward selfie. Within the scope of the study, a 52-item Selfie Attitude Scale (SAS) trial form was created by receiving the expert opinion that reflected thoughts, emotions, and behaviors regarding measuring the selfie attitude. In the validity and reliability studies, data were collected from four different study groups, which included a total of 697 high school students. Data collection was performed between March 2018 - December 2018. As a result of the exploratory factor analysis, the scale was decided to have two factors. These two factors, which consist of a total of 28 items, explain 46.09% of the total variance. The Positive Experiences on Selfie (PES) subscale explains 25.00% of the total variance, while the Negative Experiences on Prevention (NEP) subscale explains 21.09% of the total variance. The results of confirmatory factor analysis showed that the fit indices of the measurement tool were good. In the criterion-related validity study, low- and medium-level negative relationships were found between the Selfie Attitude Scale subscale and total scores and the Problematic Internet Use Scale-Adolescent Form (PIUS-A) subscale and total scores, as expected. In the other criterion-related validity study, it was observed that those who took selfies more than the sum of the scale and subscales had significantly higher scores than those who took fewer selfies. The internal consistency coefficient of the measurement tool was calculated to be .94 for the total score, .91 for PES, and .93 for NEP. The test-retest correlation values calculated as a result of the application of the measurement tool every four weeks are .78, .76, and .72, respectively. These results revealed that the Selfie Attitude Scale is a valid and reliable measurement tool that can be used to measure the selfie attitudes of high school students.

[i] ÖZÇEKİM TUTUM ÖLÇEĞİ'NİN GELİŞTİRİLMESİ: GEÇERLİK VE GÜVENİRLİK ÇALIŞMASI
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Keywords: selfie, selfie attitude scale, validity, reliability

Abstract:
Bu çalışmanın amacı lise öğrencilerinin özçekime yönelik tutumlarını ölçmeyi amaçlayan geçerli ve güvenilir bir ölçme aracı geliştirmektir. Çalışma kapsamında selfi tutumunu ölçmeye yönelik düşünce, duygu ve davranışları yansıtan uzman görüşü de alınarak 52 maddelik Özçekim Tutum Ölçeği (ÖTÖ) deneme formu oluşturulmuştur. Geçerlik ve güvenirlik çalışmalarında toplamda 697 lise öğrencisinin yer aldığı dört farklı çalışma grubundan veri toplanmıştır. Veri toplama işlemi Mart 2018 – Aralık 2018 tarihleri arasında gerçekleştirilmiştir. Açımlayıcı faktör analizi sonucunda ölçeğin iki faktörlü olmasına karar verilmiştir. Toplam 28 maddeden oluşan bu iki faktör toplam varyansın %46.09'unu açıklamaktadır. Özçekime Yönelik Olumlu Yaşantılar (ÖYOY) alt ölçeği toplam varyansın %25.00'ini; Engellenmeye Yönelik Olumsuz Yaşantılar (EYOY) alt ölçeği ise %21.09'unu açıklamaktadır. Doğrulaycı faktör analizi sonuçları ölçme aracının uyum indekslerinin iyi düzeyde olduğunu göstermektedir. Ölçüt bağıntılı geçerlik çalışmasında Özçekim Tutum Ölçeği alt ölçek ve toplam puanları ile Problemli İnternet Kullanım Ölçeği-Ergen Formu (PİKÖ-E) alt ölçek ve toplam puanları arasında beklendiği gibi düşük ve orta düzeyde negatif ilişkiler bulunmuştur. Diğer ölçüt bağıntılı geçerlik çalışmasında, ölçeğin toplamından ve alt ölçeklerden çok selfi yapanların az selfi yapanlardan anlamlı olarak daha yüksek puanlar elde ettikleri görülmüştür. Ölçme aracının iç tutarlık katsayısı toplam puan için .94, ÖYOY için .91 ve EYOY için .93 olarark hesaplanmıştır. Ölçme aracının dört hafta arayla uygulanması sonucunda hesaplanan test-tekrar test korelasyonu değerleri ise sırasıyla .78, .76 ve .72'dir. Bu sonuçlar Özçekim Tutum Ölçeği'nin lise öğrencilerinin özçekim tutumlarını ölçmek için kullanılabilecek geçerli ve güvenilir bir ölçme aracı olduğunu ortaya koymuştur.

Anahtar kelimeler: özçekim, özçekim tutum ölçeği, geçerlik, güvenirlik

1. Introduction

Every technological innovation that comes into daily life causes individuals to develop different behaviors. Recently, an example of this is observed in the increasing use of smartphones and the spread of selfie-taking behavior. Selfie-taking has become so widespread, especially among young people, that it has become a must for everyday life (Senft and Baym, 2015).

Selfie is defined as the ability of an individual to take his/her photograph without the need of others (Alblooshi, 2015). In fact, individuals can take their own photographs and share them on social media networks without the space and time limit. Of course, the fact that it has entered into daily life and gained prevalence brings inevitably the conceptualization, discussion, and determination of the variables that are related to the selfie behavior.

It has recently been suggested that the American Psychiatric Association (APA) calls excessive selfie-taking a psychological disorder. However, about this information,

the APA stated on its website that such a definition of psychological disorder is not included in DSM V. Furthermore, it was stated that excessive selfie-taking could be an obsession (APA, n.d.). This statement of the APA is important. The reason for this is that some researchers think that excessive selfie-taking may be a psychological disorder despite the APA's explanation (Griffiths and Balakrishnan, 2018; Senft and Baym, 2015). In this regard, some researchers have stated that excessive selfie-taking can be a pathology (Vats, 2015). According to Safna (2017), selfie addiction can cause young people to experience different problems such as suicide, accidents, skin damage, plastic surgery, and the loss of self-confidence.

It is observed that descriptive (Hingerton, 2016; Som, Manjusha, Anju, Ajay, 2017), predictive (Charoensukmongkol, 2016), and qualitative (Balakrishnan ve Griffiths, 2017) studies have been conducted to determine variables to which selfie-taking behaviors are related in an environment where different views are advocated. In fact, it can be said that these studies have increased gradually in recent years. In the studies conducted on the subject, it is observed that the concept of selfie behavior is called selfiephilia (Charoensukmongkol, 2016), selfie madness (Mullai, Macaj and Kotherja, 2017), selfie addiction (Saroshe, Banseria, Dixit and Patidar, 2016; Vats, 2015) and Selfitis (APA, n.d.; Balakrishnan and Griffiths, 2017).

When descriptive studies are examined, it is observed that selfie behavior is associated with variables such as self-esteem (Cedillo and Ocampo, 2016; Mullai, Macaj and Kotherja, 2017, Nagalingam and Arumugam, 2015), impulsivity (Marcial, 2015), loneliness, narcissism and egocentrism (Charoensukmongkol, 2016), interpersonal approval (Edwards, 2017), and problematic internet use (Al-Menayes, 2015; Hingerton, 2016). Models are also tested to determine which variables are more effective in the emergence of this behavior. For example, Charoensukmongkol (2016) tested such a model in a study conducted on a sample of university students in Thailand. In this model, narcissism, remarkable behaviors, egocentrism, and loneliness variables were found to predict selfie sharing behavior. Charoensukmongkol argues that selfie sharing behavior can sometimes be seen as an unhealthy behavior, although it allows young people to open up themselves.

In addition to these predictive studies, measurement tools developed to measure selfie addiction are also observed in the literature. In a sample of young adults in India, the Selfie Addiction Scale developed by Solanki (2017) consists of 47 items. Information about the scale is limited since it was only shared with the science world as an abstract. However, the information can be reached that the internal consistency coefficient of this scale is .96, and in addition to narcissistic personality disorder, it allows to determine the relationship of selfie behavior with different mental health disorders such as self-esteem, body perception, and body perception disorder.

Another measurement tool is the Selfitis Behavior Scale developed by Balakrishnan and Griffiths (2017). In the first stage of the study, the participants were interviewed to form the items of the scale. Among the results of the interview, the themes of environmental enhancement, social competition, attention-seeking, mood modification, self-confidence, and subjective conformity were identified. The

psychometric properties of the measurement tool were examined by creating item statements related to these themes. This study seems to have similarities to the model tested by Charoensukmongkol (2016). The Selfitis Behavior Scale consists of 20 items. The factor loads of the scale items range from .71 to .86. It is a five-point Likert-type rating scale with a structure that has six factors (Environmental enhancement: 4 items; Social competition: 4 items; Attention-seeking: 3 items; Mood modification: 3 items; Self-confidence: 3 items, and Subjective conformity: 3 items). Six factors explain 70.9% of the total variance. The Cronbach's alpha value of the scale is .88. The Cronbach's alpha values of the subscales range from .75 to .84. The results of the confirmatory factor analysis are as follows: X^2/Df: 1.38, GFI: .95, AGFI: .93, NFI: .94, CFI: .98, and RMSEA: .03.

When the literature in Turkey is reviewed, it can be said that the studies conducted on selfie are limited and theoretical (Seyfi and Arpacı, 2016). This situation is thought to be due to the fact that selfie addiction is considered under the concept of problematic internet use in studies. Accordingly, no measurement tool has been developed to measure the selfie behaviors of individuals quantitatively and objectively.

However, the fact that selfie behavior has become a part of daily life, spreading without time and space limits, and most importantly, causing dangerous and even fatal consequences that are often reflected in the media, increases the importance of the subject and necessitates extensive studies accordingly. However, the lack of consensus about whether selfie-taking behavior is a mental health problem suggests that it is more appropriate to measure the variable at the attitude level (APA, n.d.; Griffiths and Balakrishnan, 2018; Safna, 2017; Senft and Baym, 2015; Vats, 2015). Therefore, in this study, it was aimed to develop a valid and reliable measurement tool that aims to measure the attitudes of high school students toward selfie.

2. Material and Methods

2.1. Participants

Four different study groups were used in the study, consisting of a total of 697 students attending three high schools, two academic and one vocational-technical high schools, in a city in the Eastern Mediterranean Region of Turkey, during the 2017-2018 and 2018-2019 academic years. The first study group, which was formed in order to determine the factor structure of the scale, was composed of 351 students (205 females: 58.4%, 146 males: 41.6%; age $\bar{x}$: 16.41). The confirmatory factor analysis study was conducted with the data collected from a different study group composed of 110 students (54 females: 49.1%, 56 males: 50.9%; age $\bar{x}$: 16.75). One hundred forty-eight (72 females: 48.6%, 76 males: 51.4%; age $\bar{x}$: 16.36) students were included in the third study group for the criterion-related validity (similar scale validity) study. The fourth study group, in which the test-retest study was conducted, was composed of 88 students (46 females: 52.3%; 42 males: 47.7%; age $\bar{x}$: 16.41). The detailed descriptive values of the students in the study groups are presented in Table 1.

Table 1: Participants' descriptive statistics

	Gender			**Grade level**		
		f	**%**		**f**	**%**
Sample 1	Female	205	58,4	Ninth	96	27,4
N: 351	Male	146	41,6	Tenth	90	25,6
				Eleventh	90	25,6
				Twelfth	75	21,4
Sample 2	Female	54	49,1	Ninth	22	20,0
N: 110	Male	56	50,9	Tenth	20	18,2
				Eleventh	32	29,1
				Twelfth	36	32,7
Sample 3	Female	72	48,6	Ninth	48	32,4
N: 148	Male	76	51,4	Tenth	31	20,9
				Eleventh	37	25,0
				Twelfth	32	21,6
Sample 4	Female	46	52,3	Ninth	23	26,1
N: 88	Male	42	47,7	Tenth	23	26,1
				Eleventh	25	28,4
				Twelfth	17	19,3

2.2. Measurement Tools

2.2.1. Selfie Attitude Scale-Trial Form [SAS-TF]

When creating the scale items, firstly, the measurement tools mentioned in the introduction section about selfie were reviewed, and these tools were examined in terms of the items they contain and the measurement rules. According to Tavşancıl (2014), because the attitude has three dimensions, such as emotional, cognitive, and behavioral, attention was paid to the fact that the item statements were compatible with cognitive, emotional, and behavioral dimensions. In the first stage, 38 items reflecting these dimensions were written, and a draft form was prepared. The draft form was submitted to the opinion of five Turkish teachers and two faculty members to check its suitability for Turkish. Furthermore, the items in the draft form were examined by two faculty members who were experts in the field and experienced in scale development. Corrections were made on three items in line with the suggestions from experts, and 14 attitude statements were added to the trial form, and the 52-item trial form was made suitable for data collection. The response options of the items were arranged in a five-point Likert type (1= strongly disagree - 5= strongly agree). The increase in the score obtained from the scale shows that individuals have a strong attitude toward selfie-taking.

2.2.2. Problematic Internet Use Scale-Adolescent [PIUS-A (Ceyhan and Ceyhan, 2014)]

The PIUS-A, developed by Ceyhan and Ceyhan (2014), aims to determine problematic internet use in adolescents. The development of the scale was conducted with 678 high school students. The PIUS-A (α: .93) consists of three factors including Negative Consequences of the Internet (α: .93), Excessive Usage (α: .76), and Social Benefit/Social

Comfort (α: .78). The factor load values of the items in the scale, in which three factors explain 49.62% of the total variance, range from .44 to .81. The fit indices of the PIUS-A are as follows: X^2/df: 2.17; p: .00; RMSEA: .046; SRMR: .041; GFI: .92; AGFI: .90; NFI: .89; NNFI: .93; CFI: .94; IFI: .94, and RFI: .88. The scale consists of 27 items with five-point Likert-type response options. The low score obtained from the scale indicates that adolescents perceive problems in internet use.

2.3. Data Collection

Data collection was completed between March 2018 and December 2018. The data were collected in groups by school counselors who were trained on how to apply the trial form in the classroom environment. Volunteering was taken as the basis during the data collection process, which lasted for approximately 20 minutes.

2.4. Data Analysis

Within the scope of this study, firstly, the data obtained from the measurement tools were checked, the scales that were not answered correctly were determined, and the data transferred to the digital media were analyzed using SPSS 22.0 and LISREL 8.70 statistical package programs.

In the analysis of the data, the principal component analysis and varimax rotation method of exploratory factor analysis (EFA), confirmatory factor analysis (CFA), independent samples t-test, and Pearson's correlation coefficient were used. In the interpretation of the results, the significance level was accepted as .05.

3. Results

3.1. Validity Results

3.1.1. Exploratory Factor Analysis (EFA)

In order to determine the suitability of the data collected with the SAS-TF for factor analysis, it was observed that the values in the correlation matrix varied between -.49 and .66. It was considered that the items that were thought to be highly correlated could be grouped under common factors, and Barlett's test (X^2= 9521.73, sd: 1128) and the Kaiser-Meyer-Olkin (KMO) sampling adequacy test were performed to test this, and the value was found to be .95. According to the literature, these values show that the data matrix is suitable for factor analysis (Büyüköztürk, 2011; Çokluk, Şekercioğlu and Büyüköztürk, 2016).

As a result of the factor analysis, nine factors with an eigenvalue of 1.00 and higher and explaining 62.84% of the total variance were determined. However, when deciding on the factor structure in scale development studies, it is useful to look at the eigenvalues of the factors and their contribution to the total variance (Çokluk, Şekercioğlu and Büyüköztürk, 2016).

The eigenvalue of the first factor was 16.86 and the variance it explained was 35.13%, while the eigenvalue of the second factor was 3.07 and the variance it explained was 6.40%.

The eigenvalues of the remaining seven factors ranged from 2.26 (the third factor) to 1.04 (the ninth factor). It was observed that differences between the third factor and the ninth factor eigenvalues were small and the contribution of these factors to the total variance was quite low compared to the first two factors. Based on these results, it was decided that the scale would have two factors since only the first two factors contributed significantly to the total variance.

The varimax rotation technique was then used to bring together highly correlated items. According to the factor analysis results, two criteria were taken into consideration when deciding whether the items would remain in the scale or not. In this study, it was taken as a criterion that the items that would remain in the scale would have a load value of at least .30 in the related factor and the difference between the load values of one item in two factors would be at least .20 (Büyüköztürk, 2011; Çokluk, Şekercioğlu and Büyüköztürk, 2016). Except for one item (item 19), items that did not meet these criteria were eliminated (See Table 2). Although there was a .17 difference between the load values in the two factors of item 19 in which the statement "I ask my friend who doesn't like my selfie the reason for this." took place, the content of the item was examined, and it was decided that the item would remain in the second factor because it was compatible with the items collected in the second factor.

As a result, there were a total of 28 items in the scale collected in two factors, which explained 46.09% of the total variance and of which factor variance ranged between .22 and .67, and the scale was called the Selfie Attitude Scale (SAS). After the varimax rotation technique, 14 items with factor load values between .44 and .78 were collected in the first factor.

The eigenvalue of the first factor was 7.00 and explained 25.00% of the variance. This factor was named as the “Positive Experiences on Selfie (PES)” subscale because it contains items such as “I become happy when taking a selfie” and “When I share a selfie, people become aware of my existence.” The second factor included 14 items with a factor load value of .46 and .74.

The eigenvalue of the second factor was 5.91, and it explained 21.09% of the total variance. This factor was named “Negative Experiences on Prevention (NEP)” because it contains items such as “I get angry if my selfie doesn't get many likes” and “I feel worthless if my selfie doesn't get many likes.” The numerical values of the EFA results are given in Table 2.

Table 2: Factor analysis results of the Selfie Attitude Scale

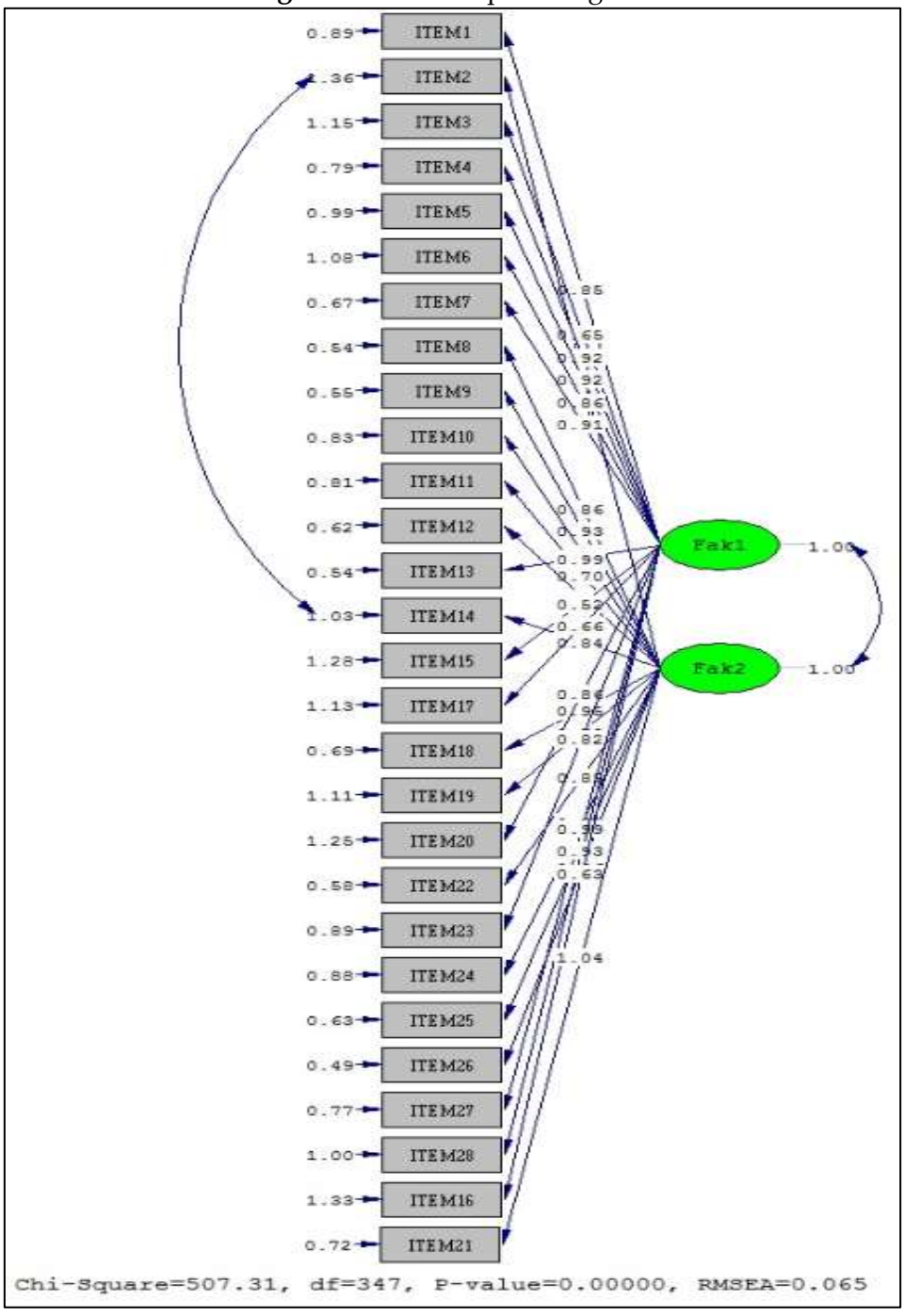
SAS-TF Item Nr	SAS Item Nr	First factor	Second factor
46	27	**.78**	.23
26	13	**.76**	.31
37	20	**.76**	.20
41	23	**.76**	.09
11	7	**.75**	.18
8	5	**.73**	.23
1	1	**.70**	.14
32	17	**.68**	.26
49	16	**.68**	.17
48	28	**.64**	.24
9	6	**.59**	.25
6	4	**.56**	.28
5	3	**.53**	.19
30	15	**.44**	.18
44	26	.21	**.74**
43	25	.09	**.72**
29	14	.20	**.72**
50	21	.29	**.69**
25	12	.27	**.66**
34	18	.20	**.65**
40	22	.25	**.64**
21	10	.24	**.62**
12	8	.25	**.58**
14	9	.22	**.55**
42	24	.21	**.52**
24	11	.06	**.47**
35	19	.29	**.46**
3	2	.09	**.46**
		Eigenvalues: 7,00	Eigenvalues: 5,91
Total variance explained % 46,09		%25,00	%21,09

3.1.2. Confirmatory Factor Analysis (CFA)

In order to examine whether the structure of the scale determined by EFA could be confirmed, as a result of the CFA conducted with the data collected from 110 students, the factor loads of 28 items of the SAS were observed to range between .42 and .80 and the error variances were observed to range between .36 and .82. When the fit indices were examined, X^2/df: 1.61, p: .00, RMSEA: .075, SRMR: .084, NFI: .91, NNFI: .97, CFI: .97, GFI: .73, and AGFI: .69 values were obtained. As a result of the analysis, X^2/df, CFI, NNFI values of the SAS showed excellent compatibility while its RMSEA and NFI values showed good compatibility. The t-values obtained by the CFA for the items in the SAS ranged from 4.41 to 9.89 ($p < .05$). However, since the SRMR value indicated moderate compatibility of the model and the GFI and AGFI values were not within acceptable limits, the modification proposals were examined, and it was decided to combine the error variances of item 2 and item 14 of the same factor (the second factor).

According to the results obtained after the modification process, the factor loads of the scale ranged from .42 to .80, and the error variances ranged from .35 to .82. When the fit indices were examined, X^2/df: 1.46, p: .00, RMSEA: .065, SRMR: .080, NFI: .92, NNFI: .97, CFI: .98, GFI: .75, and AGFI: .71 values were obtained. The t-values calculated by the CFA for the items in the SAS ranged from 4.41 to 9.89 ($p < .05$). As a result of the analysis, X^2/df, CFI, NNFI values of the SAS showed excellent compatibility while its RMSEA, SRMR, and NFI values showed good compatibility. Although the GFI and AGFI values increased after modification, they were not found to be at a good level. However, when all the values are analyzed together, it can be said that the two-factor structure of the SAS showed compatibility.

Figure 1: The SAS' path diagram



When the correlations between the subscales and the total scores of the SAS were examined, it was found that the correlation values of the two subscales calculated by the total score of the scale were .87. The correlation value of the subscales with each other was .52 ($p < .05$).

3.1.3. Criterion-Related Validity

The first criterion-related validity study of the scale was conducted by examining the relationships between the data collected from a sample of 148 students and the scores of the SAS and PIUS-A. Negative significant correlation values were found to be between -.16 and -.39 with the SAS total scores and the PIUS-A total and subscale scores ($p < .05$). The correlation values were calculated to be between -.21 and -.32 in the negative direction between the SAS-NEP and the PIUS-A total and subscale scores ($p < .05$). The correlation values of the SAS-NEP subscale scores with the PIUS-A total and other subscale scores, apart from the PIUS-A-SB/SC subscale (r: -.08; $p > .05$), were similarly between -.25 and -. 36 in the negative direction ($p < .05$).

Table 3: Correlation values of the SAS and PIUS-A

	SAS -PES	SAS –NEP	SAS Total
PIUS-A-NCI	-.25**	-.30**	-.31**
PIUS-A-SB/SC	-.08	-.21**	-.16*
PIUS-A-EU	-.36**	-.31**	-.39**
PIUS-A Total	-.25**	-.32**	-.33**

*p < .05; **p < .01; SAS Selfie Attitude Scale; SAS-PES Positive Experiences on Selfie; SAS-NEP Negative Experiences on Prevention; PIUS-A Problematic Internet Usage Scale-Adolescent; PIUS-A-NCI Negative Consequences of the Internet; PIUS-A-SB/SC Social Benefit/Social Comfort; PIUS-A-EU Excessive Usage.

The other criterion-related validity study of the SAS was conducted with the group in which the CFA was conducted. In this study, the selfie-taking frequency of students was taken as a criterion. Arithmetic means of the scores of these participants were compared by calling those taking selfies once a day at most "those taking fewer selfies" and those taking selfies two times a day and more "those taking more selfies" (See Table 4). As a result, a statistically significant difference was found between the SAS total and subscale scores arithmetic means of high school students who took more selfies and who took fewer selfies in favor of those who took more selfies ($p < .05$).

Table 4: The t-test results of groups taking more selfies and taking fewer selfies

	Groups		$\bar{x}$	Sd	t
SAS-PES	Fewer	47	33,62	10,92	-5,66*
	More	60	46,13	11,68	
SAS-NEP	Fewer	47	27,32	11,83	-2,91*
	More	60	34,37	12,92	
SAS Total	Fewer	47	60,94	20,45	-4,93*
	More	60	80,50	20,35	

*p < .05; SAS Selfie Attitude Scale; SAS-PES Positive Experiences on Selfie; SAS- NEP Negative Experiences on Prevention.

3.2. Reliability Results

The internal consistency coefficient (α) of the total score calculated for the 28 items of the scale was found to be .94 (N=110). This value was calculated to be .91 for the SAS-PES and .93 for the SAS-NEP ($p < .05$). To determine the test-retest reliability of the SAS, the correlation value between the total scores of the scale applied to 88 high school students twice at four-week intervals was .78. ($p < .05$). The correlation coefficients of the subscales of the SAS were found to be .76 for the SAS-PES and .72 for the SAS-NEP ($p < .05$).

3.3. Item Analysis Results

Item analysis was carried out by examining the item-total score relationship and comparing the end groups (N=110). The correlation values between high school students' scores obtained from each item of the scale and the subscale corrected total scores were calculated, and the values ranged from .44 to .79 for the SAS-PES and from .50 to .82 for the SAS-NEP ($p < .05$). In the comparison of the end groups, the scores of the students obtained from the scale were sorted from large to small, and the upper and lower 27% groups were taken, and the arithmetic means of the scores obtained from each item of the scale by these groups were compared. As a result of the analysis, the t-values calculated for all items in the scale ranged between 10.50 and 30.77 ($p < .05$). It was observed that those who obtained higher scores from the total of the scale had higher mean scores in all items than those who obtained lower scores.

4. Discussion

In this study, which aimed to develop a scale to measure the attitude of high school students toward selfie, the validity and reliability studies of the SAS were carried out. During the study process, first of all, a pool of questions was created, and the content validity was ensured. Afterward, a two-factor structure explaining 46.09% of the total variance emerged with EFA. This value is consistent with the information that the total variance ratio expected to be explained in multidimensional scales in the literature is from 40% to 60% (Tavşancıl, 2014). The obtained structure was tested with CFA, and as a result, the fit indices of the scale were found to be at the good and excellent levels. However, the GFI and AGFI values were below the acceptance limits. In the literature, there is information explaining this result, that the GFI and AGFI values are affected by the sample size (Çokluk, Şekercioğlu and Büyüköztürk, 2016; Karagöz, 2016; Meydan and Şeşen, 2015; Seçer, 2015). Although the critical N is 94.70 in this study, it may be thought that the small sample size may have played a role in this. Therefore, when evaluating the findings, especially in cases when the sample is small, it is useful to evaluate all the fit indices together by taking into account the CFI, NFI, and NNFI values that work very well (Çelik and Yılmaz, 2013; Çokluk, Şekercioğlu and Büyüköztürk, 2016; Karagöz, 2016; Meydan and Şeşen, 2015; Seçer, 2015). Based on this information in the literature, the findings obtained in the study can be considered as evidence that the construct validity of the scale was confirmed. This result shows that the SAS consists of a simple and stable structure of two factors.

Furthermore, within the scope of criterion-related validity studies, the correlations of the SAS and subscale scores to the PIUS-A total and subscale scores were examined. The fact that the scores obtained from the PIUS-A and its subscales were low indicated problematic internet use, whereas the increase in the scores obtained from the SAS and its subscales indicated that attitudes toward selfie were strong, and a negative correlation between both scales and subscale scores indicated that the results were in the expected direction. It is not surprising that a significant negative correlation was found between the PIUS-A-SB/SC subscale and the SAS-NEP subscale. This result can be explained by the fact that social benefit is closely related to positive experiences. Negative experiences on prevention also mean the prevention of social benefit. There is information in the literature that individuals take and share selfies in order to make friends, develop self-confidence, and communicate (Cedillo and Ocampo, 2016; Charoensukmongkol, 2016; Edwards, 2017; Mullai, Macaj and Kotherja, 2017, Nagalingam and Arumugam, 2015). In addition, a statistically significant difference between the mean scores of those taking "fewer" selfies and those taking "more" selfies indicates that the SAS has a distinctive quality. In other words, the developed measurement tool distinguishes high school students' selfie attitudes at the expected level and in the expected direction. This is evidence for the validity of the SAS.

The internal consistency of the scores obtained from the scale was calculated, and test-retest reliability was evaluated. The fact that all the coefficients obtained for the total score and subscale scores regarding reliability were above .70 indicates that the scale was highly consistent and time-sensitive in terms of measurement. The findings of the item analysis were in parallel with the validity and reliability findings of the measurement tool and supported the psychometric properties of the tool.

5. Recommendations

When the findings obtained in the construct validity study of the scale are evaluated together, it is accepted that the tool has the appropriate construct validity. However, as the GFI and AGFI values are lower than expected, especially as a result of CFA, it is recommended that this structure should be re-confirmed with similar samples. In this study, a scale was developed to measure the selfie attitudes of high school students. In other studies, the validity and reliability of the SAS in younger and older age groups can be examined.

6. Conclusion

As a result of this study, it can be said that the SAS is a valid and reliable measurement tool that can be used to measure the selfie attitudes of high school students by considering its limitations.

About the Authors
The first author's research interests include poetry therapy, aggressiveness, violence and bullying, leisure time, social skill education, school counselling, qualitative analysis and statistics. The second author's research interests include school counselling and supervision, transactional analysis, psychoeducation, communication skill training, interpersonal problem solving, research methods and statistics.

Conflict of Interest
There is no conflict of interest among the authors of this study.

References

Alblooshi A. (2015). Self-esteem levels and selfies: The relationships between self-esteem levels and the number of selfies people take and post, and the uses and gratifications of taking and posting selfies. Master thesis, Middle Tennessee State University.

Al-Menayes J. (2015). Psychometric Properties and Validation of the Arabic Social Media Addiction Scale. Journal of Addiction. doi: 10.1155/2015/291743

APA, n.d. Selfitis. https://www.psychiatry.org/home/search-results?g=fefceb94-27f9-47d2-85f8-9854cb9c28a3&Page=1. Accessed 19.10.2019.

Balakrishnan J., Griffiths M. D. (2017). An Exploratory Study of "Selfitis" and the Development of the Selfitis Behavior Scale. International Journal of Mental Health Addiction 36 1: 3-6. doi: 10.1007/s11469-017-9844-x.

Büyüköztürk Ş. (2011). Handbook of data analysis for the social sciences, Ankara, Turkey

Cedillo M. J., Ocampo R., (2016). Levels of Self-Monitoring, Self-Expression and Selfie Behavior Among Selected Filipino Youth. The Bedan Journal of Psychology 1: 45-52.

Ceyhan A. A., Ceyhan E. (2014). The Validity and Reliability Study of Problematic Internet Usage Scale for Adolescent. Journal of Dependence 15: 56-64.

Charoensukmongkol P., (2016). Exploring Personal Characteristics Associated with Selfie-Liking. Cyberpsychology: Journal of Psychosocial Research and Cyberspace 10. doi: 10.5817/CP2016-2-7.

Çelik H. E., Yılmaz V. (2013). Structural equality modeling with LISREL 9.1, Ankara, Turkey.

Çokluk Ö., Şekercioğlu G., Büyüköztürk Ş. (2016). Multivariate statistics for the social sciences: SPSS and LISREL applications, Ankara, Turkey.

Edwards F. (2017). An Investigation of Attention-Seeking Behavior Through Social Media Post Framing. Athens Journal of Mass Media and Communications 3 1: 25-44

Erkuş A. (2014). Measurement and scale development in psychology Vol. 1, Ankara, Turkey.

Griffiths M. D., Balakrishnan J. (2018). The Psychosocial Impact of Excessive Selfie-Taking in Youth: A Brief Overview. Education and Health 36 1: 3-6.

Hingerton H. (2016). Social media selfies: Exploring relationships between gender, narcissism, self-esteem, body image and problematic internet use. Dublin Business School.

Karagöz Y. (2016). SPSS and AMOS 23 applied statistical analyses, Ankara, Turkey

Marcial D. V. (2015). What's on Your Mind? Measuring Self-Promotional and Anti-Social Behaviors on Facebook among Tertiary Students. Information Technologies and Learning Tools 48: 199-208.

Meydan C. H., Şeşen H. (2015). Structural equality modeling: AMOS applications, Ankara, Turkey.

Mullai E., Macaj O., Kotherja O. (2017). Selfie-Mania Influence on Adolescent Self-Esteem. Interdisciplinary Journal of Research and Development 4: 95-100.

Nagalingam S., Arumugam B. (2015). Self-Impetus to Self Portraits. International Journal of Healthcare Sciences 3: 223-224.

Safna H. M. F. (2017). Negative Impact of Selfies on Youth. International Journal of Computer Science and Information Technology Research 5 3: 68-73.

Saroshe S., Banseria R., Dixit S., Patidar A. (2016). Assessment of Selfie Syndrome among the Professional Students of a Cosmopolitan City of Central India: A Cross-Sectional Study. International Journal of Preventive and Public Health Sciences 2: 1-4. doi: 10-17354/ijpphs/2016/25.

Senft T. M., Baym N. K., (2015). What Does the Selfie Say? Investigating a Global Phenomenon. International Journal of Communication 9: 1588-1606.

Seyfi M., Arpacı İ., (2016). The Relationships Between Appearance Concerns and Selfie Sharing on Social Medya. Istanbul University Faculty of Communication Journal 2: 143-154.

Seçer İ., 2015. Psychological test development and adaptation process: SPSS and LISREL applications, Ankara, Turkey.

Solanki A. P. S. (2017). Selfie Addiction Scale. 16th World Congress on Psychiatry and Psychological Syndromes April 24-25, Las Vegas, USA.

Som N., Manjusha N. Anju G., Ajay B. (2017). Assessment of Selfie Addiction Among Professional Medical Students of Rama Medical College Hospital and Research Centre, Mandhana, Kanpur. Indian Journal of Forensic and Community Medicine 4 4: 261-266. doi: 10.18231/2394-6776.2017.0057.

Tavşancıl E. (2014). Measurement of attitudes and data analysis with SPSS, Ankara, Turkey

Vats M. (2015). Selfie Syndrome: An Infectious Gift of IT to Health Care. Journal of Lung, Pulmonary and Respiratory Rese 2: 1-2.