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A SCALE DEVELOPMENT STUDY

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The Social Network Addiction Scale: A Scale Development Study

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Abstract

The aim of this study is to develop a scale to determine attitudes towards social networks. During the development phase of the scale, 55 items were created and presented to experts. Experts demand that 2 items be removed from the scale. The 53 item draft scale was applied to 270 persons as a preliminary experiment group in the age range of 18-53 years. In order to determine the validity of the structure of the scale, exploratory factor analysis was carried out by analysis of basic components. As a result of these analyzes, a scale consisting of 40 items which explains 56.650% of total variance with 6 factors (request, preference, communication, affection, socialization, friendship) was obtained. The reliability coefficient of all the scales was Cronbach α = .95. As a result of the preliminary test, it was revealed that the items were understandable and that a few expressions were required. By making the necessary changes ,the data collection device has the final structure .The scale's average was calculated as 3.13, median 3.20 and standard deviation .72. Having the KMO value above .90 , datas are considered to be so convenient for factor analysis. Moreover, after Barlett's test X^2 value 7164.145 (p <.001) indicates that the scale is convenient for factor analysis. The results obtained prove scale to be valid and reliable.

Keywords: internet, addiction, FOMO, social networks, smart phone, communication.

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Introduction

Nowadays Internet is one of the essential requirements of people. It offers various advantages facilitating the searching process and supporting the daily life. As it is both fast and affordable, it has become an integral part of the modern human life. The usage of internet is accessed not only by computers but also by mobile phones as they are practical in daily life. People use mobile phones not only for the interpersonal communication but also for performing on-line smart phone activities such as search, news, entertainment and multimedia use and other applications (Leung, 2007). The concept of FOMO can be assumed to be a mean to access to social networks and other communication applications on mobile phones and to provide social communication. Thus, we assume that people are motivated for controlling their mobile phones in fear of such social interactions and lack of knowledge (Przybylski *et al.*, 2013).

Understanding the developments and effects of the social media is of critical importance for understanding the fear of missing out, hence FOMO, as well as discovering the personal, psychological and situational characteristics of it. Previous researches have indicated that FOMO is formed by the feelings of nervousness, anxiety and inadequacy; Feelings of nervousness, anxiety and inadequacy of an individual are deepened when come across with people or incidents of value in social media. Self respect can affect the level of FOMO. Psychological characteristics, situations and factors presented while using social media are the basic cornerstones helping us to understand FOMO (Wortham, 2011).

The pressure of keeping up with information, busy schedules and frequent deadlines is assumed to be the reason for media multitasking and this has made smartphone use during face-to-face interactions very popular (Onochie & Obono, 2019). Individuals using smart phones spend a good part of their time on such networks brings to mind the question of to what extend they have the fear of missing the developments (FOMO) is. There is a need for a scale primarily to determine the attitudes of individuals towards social networks. As there is no scale generated for this purpose in Turkey, it has been aimed with reference to this necessity to develop a scale compatible with the conditions of Turkey and measuring up the attitudes of individuals using smart phones towards social networks. It is hoped that it will provide contribution to people by uncovering the existing situation regarding individuals' fear of missing out social networks and offering recommendations about the measures to be taken on this issue with the "Social Network Addiction Scale" (SNAS). Besides, there is hardly any study in the body of literature under the name of the fear of missing out or FOMO relating to the detection of the psychological conditions of individuals using social networks regularly. Detecting individuals' intended use of social networks and their level of adoption is of significance as it will determine their perspectives on these platforms. Additionally, it is estimated that the research will contribute

to the similar researches to be conducted on examining the relationship between psychological factors and social networks.

Methods

The study was granted ethical approval on 03.05.2018 by the Educational Ethics Committee of the Ethical Review Board, Near East University. Written informed consent of the participants were also taken in advance. 5-point Likert scale was preferred for the Social Network addiction Scale (SNAS). Participants were asked to determine answers for each item of the scale according to the categories of strongly disagree – disagree – undecided – agree – strongly agree. In order to acquire a total point for each participant, the answers collected were scored from 1 to 5, the most positive category being 5 and the most negative being 1. Quantitative research method was used for the research.

Sample

Sample of this research includes individuals between the ages of 18 and 53 who wereborn between 1965 and 2000. As the size of the sample was specified as at least five times higher than the developed number of items which is 53, it was applied on 270 people located in Nicosia, Turkish Republic of Northern Cyprus (TRNC). The sample is limited only to the residents of Nicosia, TRNC.

Scale Development

The aim of the study is to analyse the intergenerational levels of the fear of missing out (FOMO) via the Social Network addiction Scale (SNAS). Therefore we prepared the scale about social network addiction. The data to be collected with this SNAS will help us understand to what extent people develop addictions related to the fear of missing out and whether the addiction is connected to the variables detected or not. Hence, 20 people were asked to write a composition on their feelings, thoughts and behaviours about the addiction to social networks while the items of the scale were in the making. 55 items were written as a result of a literature survey about the addiction to social networks and the content analysis conducted on the compositions.

The social network addiction scale, which was prepared accordingly, was analysed by a language expert with regards to the language. Opinions of 10 university lecturers were asked for the content and appearance validity of the scale. 2 items were removed from the scale at the request of experts. Experimental form of the data collection tool developed for the addiction to social networks took its final shape after applying the necessary corrections in accordance with experts' opinions. Considering the processes such as the size of group factor analyses

and item analyses it is recommended to make the item number at least two times more (Kline, 1994). The experimental form of the data collection tool prepared in order to perform the validity and reliability analysis of the data collection tool was applied to 270 people as a preliminary experiment group. However, 3 questionnaires were not evaluated as they were not fully filled in and 267 questionnaires were used to assess the validity of the construct.5-point Likert scale was used in the research for the social network addiction scale. Participants were asked to determine an answer for each item of the scale according to the categories of strongly disagrees – disagree – undecided – agree – strongly agree. In order to acquire a total point for each participant, the answers collected were scored from 1 to 5, the most positive category being 5 and the most negative being 1.

In order to determine the items of the scale, arithmetic average, standard deviation and total item correlation of each item were calculated on the data collected from the said people during the preliminary experiment. Selection of the items of the scale was based on the criterion requiring the total item correlation coefficient to be above 30. Averages of the items of the scale are between 2.40 – 3.91 and standard deviation between 1.19 - 1.04. When we examine the results of the item analysis conducted to evaluate the distinctiveness of the items, it is observed that total item correlations of two of the items are below 30 and the remainders are above 30, varying between 44 and 73. The expressions with a value below 30 were removed from the scale. The reliability coefficient of all the scale was Cronbach α = .95. As a result of a pre-experiment, it was revealed that the items were understandable and that changes in expressions were required in several items. The data collection tool took its final form with the application of the necessary changes.

Implementation

The scales implemented on the preliminary experiment group and taken its final shape were delivered to the researchers who then were given questionnaires and asked to implement the scales. Explanations needed were provided after handing out the scales which were collected after 2 weeks.

Results

 After entering the data of individuals addiction to social network on SPSS 24 programme, total score distribution of the scale was observed. The scale's average was calculated as 3.13, median 3.20 and standard deviation 72. As a result of the Kolmogorov-Smirnov test, it was found as p> .05.These findings show that the data obtained from 267 individuals have normal distribution.

Validity

Exploratory factor analysis (EFA) was conducted in order to test the validity of the scale's construct. EFA is considered as the most powerful method by many researchers (Kahn, 2006). KMO and Barlett Sphericity tests were applied to calculate the suitability of the data and number of samples with factor analysis.. To have convenient data for factor analysis it is required to have KMO higher than 60 and a significant Barlett test (Buyukozturk, 2017). In this study, KMO sampling suitability coefficient was calculated as .89. KMO being above .90 can be interpreted as the data's suitability for the factor analysis is quite favourable (Hutcheson & Sofroniou, 1999; Namlu & Odabasi, 2007). In addition, Bartlett's test results indicate that X^2 value is 7164.145 (p <.001), which proves that the scale issuitable for the factor analysis. Varimax rotations were applied to show the basic components (subscales) of the scale. The criterion requiring the factor load acquired as a result of the Varimax rotation analysis to be at least 0.30 and collected under a single factor (the difference should be at least 0.10 in case the item obtains high factor load under two different factors) was used as the base in determining the items forming the scale. This value presents variations in the literature and .30 and .40 are generally considered as the limit values (Tuan *et al.*, 2000; Tsai & Liu, 2005).

Six factors were found in the social network addiction scales of people. Total variance explained with three factors is 61.22%. As reaching very high values in social sciences are relatively difficult, numerous sources state that the values higher than 40% - 60% are acceptable (Namlu & Odabasi, 2007). The value higher than % 60 obtained in this research is considered to be within the accepted level. Variance percentages of the 6 factors obtained after the application of the varimax rotation explains the first variance as 16.89%, the second as 14.63%, the third as 7.99%, the fourth as 7.96% , the fifth as 7.40% and the sixth as 6.41% *Table 1* shows the items remained after the application of the Varimax rotation.

Additionally, screen plot was also examined. As seen in the Scree Plot graphic (*Figure 1*), the slope hit a plateau after the first point and then fractures are experienced in five dimensions.
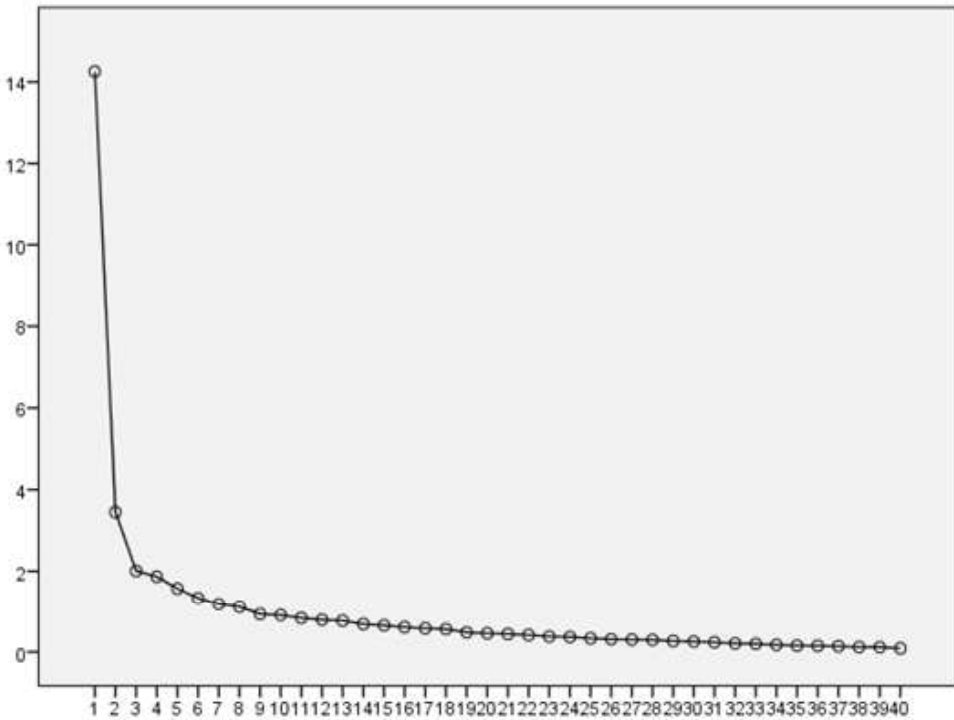
Figure 1: The scree plot about SNAS

Table 1: Factor Loadings from Principal Axis Factor Analysis with Varimax Rotation for a Six-Factor Solutionfor SNAS (N =267)

Items	Factorloading					
	1	2	3	4	5	6
27	.797					
28	.755					
29	.722					
37	.677					
26	.658					
30	.650					
32	.633					
36	.621					
24	.591					
23	.567					
45	.565					
22	.517					
5	.474					
42		.781				

40		.735				
39		.699				
44		.696				
35		.684				
31		.631				
41		.629				
34		.619				
51		.545				
4			.769			
3			.717			
7			.661			
11			.618			
10			.612			
50				.764		
49				.736		
48				.721		
47				.681		
52				.570		
17					.733	
14					.700	
18					.649	
16					.565	
9						.634
8						.598
13						.591
12						.586
Eigenvalue	14.26	3.45	2.01	1.87	1.57	1.34
% of variance	35.64	8.63	5.02	4.67	3.93	3.34
Varimax rotation	6.73	5.85	3.20	3.19	2.96	2.57
% of variance	16.82	14.63	7.99	7.97	7.40	6.41

Note. Loadings < .30 are omitted.

The break point for the factor number has been determined as 6 (Buyukozturk, 2017). Based on these results, it was decided that SNAS should be six-dimensional. The content of the items collected from the factors and their suitability to the theoretic structure were taken into account while entitling the dimensions. Thus, subscales were entitled as desire, preference, communication, affection, socializing and friendship (*Table 2*).

Table 2: The results of average, standart deviation and cronbach alpha values of SNAS

	ve.	d.	lpha
27. I feel anxious without my mobile phone.	3.29	1.38	
28. I have to carry my smart phone with me in order to feel good.	3.02	1.31	
29. I want my smart phone with me while sleeping.	3.42	1.27	
37. I constantly find myself checking my smart phone.	3.33	1.29	
26. I feel safe when I have my smart phone is with me.	3.21	1.33	
30. I check my phone first thing in the morning.	3.72	1.27	
32. I use my smart phone even when I'm performing my daily tasks.	3.33	1.28	.93
36. I Exceed my planned time for mobile phone usage	3.32	1.33	
24. I generally do not go beyond the coveragehone.	2.93	1.31	
23. I want my smart phone with me in the toilet.	3.29	1.45	
45. I want to use my smart phone again shortly after I stop using it.	2.90	1.23	
22. I constantly check my smart phone while studying.	3.16	1.24	
5. I feel bad when I stay away from social networks.	3.15	1.21	
Total of the Factor I "DESIRE"	3.24	.95	
42. I prefer texting my friends with my smart phone rather than meeting face to face	2.51	1.23	
40. I speak to my friends through my smart phone rather than meeting face to face.	2.38	1.23	
39. I prefer using my smart phone rather than paying attention to people around me.	2.43	1.23	
44. I prefer maintaining my friendships through my smart phone rather than the real life.	2.41	1.20	
35. Spending less time with the people around me than my spart phone do not make me uncomfortable.	2.76	1.36	.90
31. I do not need my friends when my smart phone is with me.	2.59	1.41	
41. I cannot stop myself from using my smart phone.	2.74	1.27	
34. I do not feel tired even if I sleep little because of using my smart phone frequently	2.72	1.32	
51. It is important for me to share the details of my quality times online.	2.96	1.31	
Total of the Factor II "PREFERENCE"	2.61	.97	

4. I initially use social networks in order to communicate with someone.	3.71	1.21	
3. I use social networks in order to search for everything I do not know.	3.91	1.05	
7. I use social networks in order to get in touch with my friends.	3.72	1.15	.79
11. I have cominication with people by messaging through social networks.	3.75	1.07	
10. I use social networks in order to make video calls with people.	3.90	1.09	
Total of the Factor III "COMMUNICATION"	3.80	.82	
50. I get angry if I miss the chance of meeting my friends.	3.06	1.37	
49. It is important for me to know what my friends are going through in their lives.	2.82	1.25	
48. I worry when I do not know what my friends are doing.	2.63	1.37	
47. I worry when I find out that my friends have fun without my knowledge.	2.64	1.29	.83
52. I continue checking up what my friends are doing even if I am on holiday.	2.90	1.31	
Total of Factor IV "FEELING"	2.80	1.02	
17. I use social networks for capturing my moments and uploading their videos.	2.94	1.30	
14. I use social networks for taking the photos of everything I do and sharing them.	2.90	1.22	
18. I follow social networks not to miss out the personal videos shared.	3.07	1.26	.93
16. I use social networks in order to create photo albums for everything I do.	2.94	1.21	
Total of Factor V "SOCIALISING"	2.96	1.06	
9. I use social networks in order to chat with my friends.	3.63	1.12	
8. I think I socialize with social networks.	2.96	1.18	
13. I use social networks in order to chat with my friends.	3.61	1.10	
12. I use social networks inr oder to find all of my childhood friends.	3.55	1.18	.72
Total of Factor VI "FRIENDSHIP"	3.44	.84	
Total			.95

Conclusion

55 item scale were prepared in this research with the purpose of analysing the intergenerational levels of the fear of missing out (FOMO), understanding to what extent people develop addictions related to the fear of missing out and whether the addiction is connected to the variables detected or not. Hence, 20 people were asked to write a composition on their feelings, thoughts and behaviours about the addiction to social networks while the items of the scale were in the making.55 items were written as a result of a literature survey about the addiction to social networks and the content analysis conducted on the compositions. The social network addiction scale, which was prepared accordingly, was analysed by a

language expert with regards to the language. Opinions of 10 university lecturers were asked for the content and appearance validity of the scale. 2 items were removed from the scale at the request of experts. Experimental form of the data collection tool developed for the addiction to social networks took its final shape after the necessary corrections were applied in accordance with the opinions of experts.

The experimental form of the data collection tool prepared in order to perform the validity and reliability analysis of the data collection tool was applied to 270 people as a preliminary experiment group. However, 3 questionnaires were not evaluated because they were not fully filled in and 267 questionnaires were used to assess the validity of the construct. 5-pointLikert scale was used in the research for the social network addiction scale. Participants were asked to determine an answer for each item of the scale according to the categories of strongly disagrees - disagree - undecided - agree - strongly agree. In order to acquire a total point for each participant, the answers collected were scored from 1 to 5, the most positive category being 5 and the most negative being 1.Scale data collected by hardcopy.

With the purpose of determining the items of the scale, arithmetic average, standard deviation and total item correlation of each item were calculated on the data collected from the subject people during the preliminary experiment. Selection of the items of the scale was based on the criterion requiring the total item correlation coefficient to be above .30.

When choosing the items of the scale, it is decided to use the scale Varimax rotation analysis at least .30 and place it under one single factor (in case that the factor has a higher factor under two different items, the variation be at least .10). This usually shows variation in the literature and it is taken as .30 and .40 as limit values.

Averages of the items of the scale are between 2.40 – 3.91 and standard deviation between 1.04 - 1.19. Examining the results of the item analysis conducted in order to evaluate the distinctiveness of the items, it is observed that total item correlations of two of the items are below .30 and the remainders are above .30, varying between .44 and .73. The observations with a value below .30 were removed from the scale. The reliability coefficient of all the subscales was calculated as .95. As a result of the preliminary experiment, it was revealed that the items were understandable and that changes in expressions were required in few of the items. The data collection tool took its final shape with the application of the necessary changes.

The scale is formed with the datas collected to evaluate individuals' addiction to social networks via smart phone.Addiction to social networks accounts for talkingon the phone about the comments made continously, texting for the comments and following what the friends on the page are going through. Being on the internet no to miss what others doing is considered to be an indication of this. Therefore, this scale will help analysing wheater people showbehaviours of addiction to the

fear of missing developments or not and to understand if the addiction is related to the deteremined variables.

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