The Design of Social Media Platforms – Initial Evidence on Relations between Personality, Fear of Missing Out, Design Element-Driven Increased Social Media Use, and Problematic Social Media Use

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Data Cleaning

Of the data collected from N = 550 individuals (initial sample), data from n = 16 individuals were removed because they did not use any social media platform. This exclusion criterion was not mentioned in the preregistration but it must be considered when investigating problematic social media use. Next, data from n = 58 individuals were deleted due to missing data in sociodemographic variables (single item measures; n = 1) and/or the newly developed scale to assess tendencies to Design Element-Driven Increased Social Media Use (DED-ISMU; n = 57). Because the factorial structure of this scale needed to be tested in the present work, we aimed at preventing potential biases due to missing or imputed data. Moreover, data from n = 1 additional participant were excluded because this person provided more than 63% (28 items) of missing data in the Big Five Inventory (BFI). All other participants provided missing data to at most two items (i.e., 20% of a 10-item scale) in one single scale and were not excluded, accordingly. These missing data in questionnaires were imputed by predictive mean matching using the mice package in the statistical software R later on (van Buuren & Groothuis-Oudshoorn, 2011). Data from an additional n = 18 participants were excluded from final analyses because of being suspected of careless responding: they responded with the same response option to all items of the BFI, and/or the DED-ISMU scale, and/or the Barratt-Impulsiveness-Scale – 15 (BIS-15); for the analyses in careless responding, the *careless* package was used (Yentes & Wilhelm, 2021). Providing the same response to all items of the Fear of Missing Out (FoMO) scale or the Bergen Social Media Addiction Scale (BSMAS) was not seen as indication of careless responding because of the brevity of these scales and lack of reverse (negatively) formulated items in these scales. Finally, data from n = 11 participants were removed before final analyses because they were younger than 18 years. This led to a final sample consisting of N = 446 participants.

Factorial Structure of the Scale to Assess Tendencies to Design Element-Driven Increased Social Media Use (DED-ISMU)

The Kaiser-Meyer-Olkin factor adequacy was 0.91 across the 22 items and the Bartlett's χ^2-test on whether a correlation matrix is an identity matrix was significant ($\chi^2(231) = 5103.38$, $p < 0.001$) in the present sample ($N = 446$), indicating that it was acceptable to proceed with preparations for an exploratory factorial analysis (EFA).

In more detail and as described in the preregistration, the analyses on the factorial structure of the DED-ISMU scale were started by examining how many factors to retain. For this, parallel analysis (using the *psych* package (Revelle, 2021)) and sequential χ^2-tests (using the *EFA.dimensions* package (O'Connor, 2021)) were applied (Auerswald & Moshagen, 2019). For the parallel analysis, the maximum likelihood estimator and Pearson correlations were used. The result was that 6 factors were suggested to be retained. The sequential χ^2-tests using Pearson correlations led to the result of 11 factors to be retained. Not only that the number of 11 factors seemed like a lot of factors for a 22-item scale, this result also differed vastly from the result of the parallel analysis. Thus, we additionally investigated the screeplot and eigenvalues. The screeplot pointed to a 1- or 2-factorial structure and 5 eigenvalues were above 1. These very different results across analyses led us to change the procedure.

More specifically, it was decided to conduct (bootstrapped) exploratory graph analysis (EGA) in order to examine the relations between and structure of the 22 items. This approach (EGA) combines the network analytic approach with community detection. Thus, EGA provides the possibility to detect the multivariate associations between variables (here: items) by means of a network analytic approach. It has several advantages compared to more traditional analyses like EFA: not only is the visualization of associations between variables in a network graph easily interpretable (Bringmann & Eronen, 2018; Golino et al., 2020). Additionally, the EGA approach is completely data-driven (Christensen & Golino, 2021; Golino et al., 2020) and only a one-step instead of a two-step approach is applied in order to examine the structure between variables. Thus, EGA limits researchers' degrees of freedom (Golino et al., 2020). Moreover, it has been observed that EGA results are at least as accurate as results of more traditional methods (Golino et al., 2020).

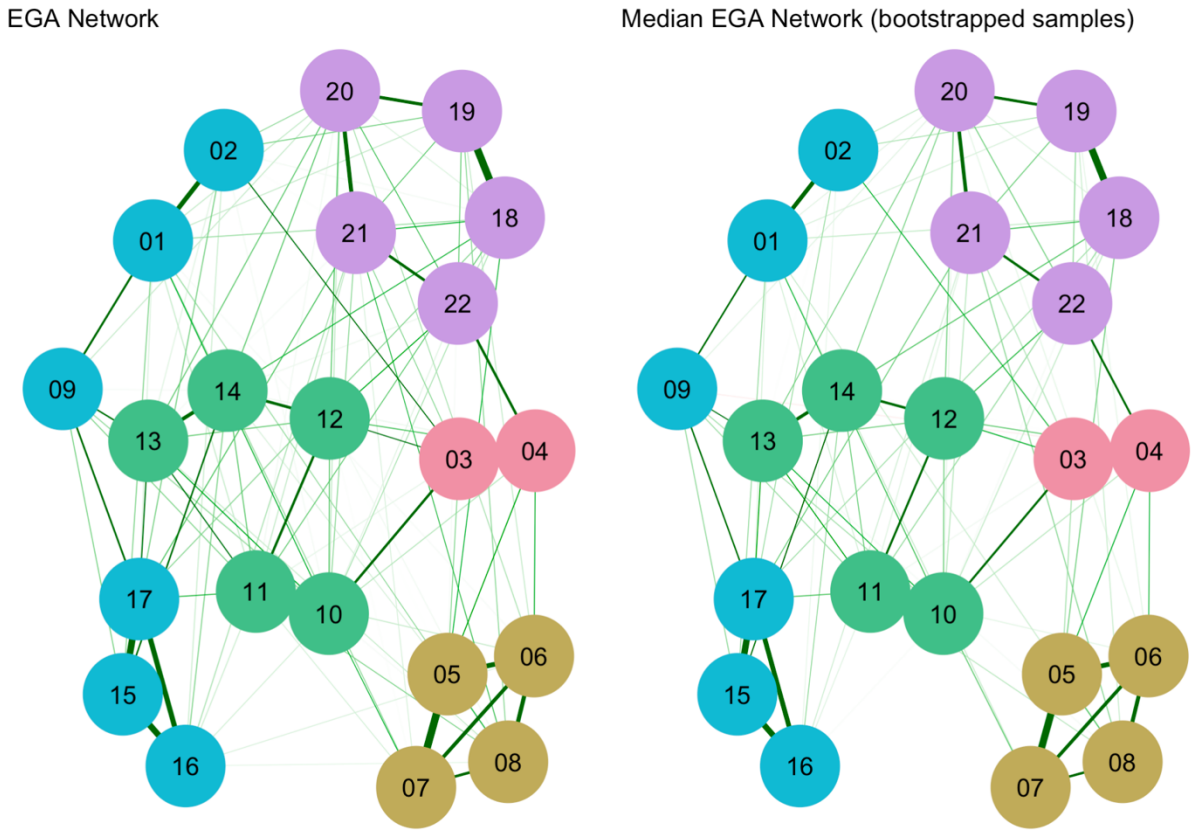
Within the EGA, relations between observed variables were estimated based on the Gaussian Graphical Model (GGM) (Golino & Christensen, 2021; Golino & Epskamp, 2017). This enables the interpretation of relations between two variables in the network as partial correlation coefficients (when standardized) after conditioning on all other variables (Golino and Epskamp 2017). Additionally, and to prevent overfitting of the network model and spurious correlations, penalized maximum likelihood estimation was used. More specifically, the graphical least absolute shrinkage and selection operator (GLASSO) was applied (Christensen & Golino, 2021; Golino & Christensen, 2021; Golino & Epskamp, 2017). For

community/cluster detection, the Louvain walktrap algorithm was used. The whole analysis procedure was bootstrapped across 1,000 samples. For the EGA, most prominently the *EGAnet* package was used (Golino & Christensen, 2021) and results were visualized using the *qgraph* package (Epskamp et al., 2012).

The results of (bootstrapped) EGA are graphically depicted in Supplementary Figure 1. As can be seen in this figure, the analyses revealed five communities. More specifically, five communities were detected in 62% of bootstrapped samples; 4 (18%) or 6 (20%) communities were observed much less frequently. Aside from three items, all items were put onto the same community in at least 75% of the bootstrap analyses (three items with lower replicability: items 01: "… I endlessly "scroll down" to see more content.", item 02: "… when I watch videos, new videos are automatically started when the previous one ended.", and item 09: "… the content provided in my news feed fits to my interests.").

Supplementary Figure 1

Results of the EGA and bootstrapped EGA on relations between items of the Design Element-Driven Increased Social Media Use (DED-ISMU) scale



Note. The relations (green = positive relations; thicker lines indicate stronger associations) between variables of the DED-ISMU scale are presented based on EGA on the present sample and bootstrapped EGA. The same color of dots around items indicates that items belong to the same cluster according to (bootstrapped) EGA.

After the (bootstrapped) EGA, the 5-community structure was tested in a confirmatory factor analysis (CFA) using the maximum likelihood estimator. More specifically, each community was modeled as a factor (i.e., 5 interrelated factors), which based on the items belonging to the same community according to (bootstrapped) EGA results. This model showed non-satisfactory fit values (Comparative Fit Index (CFI) = 0.90, Tucker-Lewis Index (TLI) = 0.88, Root Mean Square Error of Approximation (RMSEA) = 0.08, Standardized Root Mean Square Residual (SRMR) = 0.07).

After checking the loadings of all items, it was decided to exclude items 01 and 02, because they loaded on their factor < 0.500 (when both latent and manifest observed variables are standardized; all other items loaded on the respective factor > 0.500) and because these items were two of the three items which already showed a low replicability in the bootstrapped EGA. Moreover, it was decided to delete items 03 ("… I already put a lot of effort in creation of my profile, my network, etc.") and 04 ("… of my followers.") from the model. This was because these two items on their own built one factor, which was not interpretable. The new model (excluding the aforementioned four items) consisting of 4 factors revealed better, but still non-satisfactory, fit values (CFI = 0.93, TLI = 0.92, RMSEA = 0.07, SRMR = 0.05).

Thus, modification indices were checked. The modification indices with highest effects indicated that residual covariances between item 18 ("… while I am on a social media platform, I receive messages/notifications when new content or content that might be of interest to me is available; and these notifications make me check out this content.") and item 19 ("… push notifications are sent to my device when I am not currently on social media, which makes me check social media.") and between item 10 ("… I check the reactions (likes, shares, etc.) to my posts.") and item 14 ("… I see content that my friends liked.") should be modeled. Because both items 18 and 19 were about the reaction to notifications and because both items 10 and 14 were about behaviors of others, we decided to allow these residual covariances. This model revealed satisfactory fit values (CFI = 0.95, TLI = 0.94, RMSEA = 0.06, SRMR = 0.05).

Given that the factors were interrelated (all standardized (both latent and observed variables) covariance estimates ranged from 0.37 to 0.75), it was decided to also model a higher order factor model. Estimation of this model with an additional higher order factor (instead of interrelations between the four factors) revealed very similar results regarding the fit values (the same, when rounded to two decimal places: CFI = 0.95, TLI = 0.94, RMSEA = 0.06, SRMR = 0.05), indicating that a higher-order factor can be extracted. The items and their respective factors and factor loadings are presented in Supplementary Table 1.

Supplementary Table 1

Items of the scale to assess tendencies to Design Element-Driven Increased Social Media Use (DED-ISMU)

Please indicate how often it happens that you spend more time on social media than you initially intended due to the following reasons. Please note that for these questions "more time on social media" includes spending a longer period of time on social media when you are already on a platform as well as visiting social media more frequently. Social media includes any messaging app, such as WhatsApp and Signal, as well as social networking platforms like Facebook and Snapchat.
I spend more time on social media and/or check social media more often than intended because …

Item nr.	Wording	Factor	Factor loading (interrelated factors / higher-order factor)
01	… I endlessly "scroll down" to see more content.	-	-
02	… when I watch videos, new videos are automatically started when the previous one ended.	-	-
03	… I already put a lot of effort in creation of my profile, my network, etc.	-	-
04	… of my followers.	-	-
05	… I check when others receive my messages.	Social pressure	0.872 / 0.871
06	… I check my messages because I know that others can see when I receive their messages.	Social pressure	0.832 / 0.832
07	… I check when others have read my messages.	Social pressure	0.866 / 0.868
08	… I reply to messages because I know that others can see when I read their messages.	Social pressure	0.711 / 0.711
09	… the content provided in my news feed fits to my interests.	Content-related elements	0.537 / 0.535
10	… I check the reactions (likes, shares, etc.) to my posts.	Social elements	0.735 / 0.739
11	… I react (like, share, etc.) to others' posts.	Social elements	0.743 / 0.744
12	… I receive valuable friend suggestions.	Social elements	0.674 / 0.677
13	… I follow my friends.	Social elements	0.671 / 0.668
14	… I see content that my friends liked.	Social elements	0.711 / 0.706
15	… I am (often) presented videos.	Content-related elements	0.845 / 0.845

16	… I am (often) presented short texts.	Content-related elements	0.811 / 0.813
17	… I am (often) presented pictures.	Content-related elements	0.884 / 0.883
18	… while I am on a social media platform, I receive messages/notifications when new content or content that might be of interest to me is available; and these notifications make me check out this content.	Attention prompts and rewards	0.640 / 0.635
19	… push notifications are sent to my device when I am not currently on social media, which makes me check social media.	Attention prompts and rewards	0.611 / 0.604
20	… I watch new posts (stories etc.) from my friends, because they are colorfully highlighted.	Attention prompts and rewards	0.710 / 0.715
21	… some content is only shortly available.	Attention prompts and rewards	0.724 / 0.727
22	… I receive rewards (e.g., Snapchat points) for being on social media.	Attention prompts and rewards	0.537 / 0.535

Note. We suggest to present the items in randomized order when applying the DED-ISMU scale. Response options were: 1 = “never”, 2 = “very rarely”, 3 = “rarely”, 4 = “sometimes”, 5 = “often”, 6 = “very often”, 7 = “always”. The loadings present standardized loadings (Std.all = observed and latent variables standardized).

The results of an EFA extracting five interrelated factors (oblimin rotation) and using the maximum likelihood estimator and Pearson correlations are presented in Supplementary Table 2. These results are presented for reasons of transparency and because in the preregistration it was stated that an EFA approach would be used. As can be seen from Supplementary Table 2, results are in parts similar to the EGA and CFA results with similar groups of items loading on the same factor.

Supplementary Table 2

Standardized loadings of items on each of five factors extracted in the Exploratory Factor Analysis

	Factor 01	Factor 02	Factor 03	Factor 04	Factor 05
Item nr.					
01	0.14	0.25	0.03	0.19	0.07
02	-0.04	0.19	0.17	0.23	0.08
03	0.01	0.06	0.76	0.01	0.11
04	0.07	0.01	0.86	0.01	-0.05
05	0.83	-0.02	0.09	0.02	-0.03
06	0.82	0.01	0.04	0.03	-0.06
07	0.90	-0.01	-0.03	-0.05	0.05
08	0.67	0.05	-0.11	0.08	0.08
09	0.02	0.32	-0.11	0.11	0.33
10	0.04	0.03	0.27	0.12	0.45
11	0.11	0.08	0.10	0.09	0.54
12	0.05	-0.05	0.28	-0.03	0.56
13	0.09	0.10	-0.10	0.01	0.66
14	0.05	0.25	0.08	0.07	0.39
15	-0.01	0.92	0.01	-0.03	-0.06
16	0.04	0.80	0.05	0.01	-0.05
17	-0.01	0.79	-0.03	0.03	0.14
18	0.08	0.11	0.00	0.61	0.07
19	0.01	-0.04	-0.01	0.89	-0.07
20	-0.02	-0.01	0.08	0.48	0.29
21	0.04	0.13	0.10	0.39	0.18
22	0.00	-0.01	0.33	0.27	0.06

Correlational Analyses – (Sub)Scale Level

Supplementary Table 3

Zero-order Pearson correlations between all scales and subscales related to the variables of main interest (N = 440)

			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	BFI Openness																
2	BFI Conscientiousness	r	0.05														
		p	0.278														
3	BFI Extraversion	r	0.14	0.14													
		p	0.004	0.003													
4	BFI Agreeableness	r	0.08	**0.37**	0.15												
		p	0.077	**< 0.001**	0.001												
5	BFI Neuroticism	r	0.06	**-0.24**	**-0.18**	**-0.28**											
		p	0.236	**< 0.001**	**< 0.001**	**< 0.001**											
6	BIS-15 Nonplanning	r	-0.16	**-0.56**	-0.03	**-0.22**	0.11										
		p	< 0.001	**< 0.001**	0.522	**< 0.001**	0.025										
7	BIS-15 Motor impulsivity	r	0.10	**-0.30**	**0.22**	-0.16	**0.26**	**0.20**									
		p	0.032	**< 0.001**	**< 0.001**	< 0.001	**< 0.001**	**< 0.001**									
8	BIS-15 Attention impulsivity	r	-0.13	**-0.37**	-0.10	**-0.30**	**0.32**	**0.26**	**0.42**								
		p	0.006	**< 0.001**	0.034	**< 0.001**	**< 0.001**	**< 0.001**	**< 0.001**								
9	BIS-15 Total	r	-0.08	**-0.56**	0.05	**-0.31**	**0.32**	**0.66**	**0.75**	**0.77**							
		p	0.078	**< 0.001**	0.342	**< 0.001**	**< 0.001**	**< 0.001**	**< 0.001**	**< 0.001**							
10	FoMO scale	r	0.08	-0.16	0.04	-0.15	**0.39**	0.03	**0.28**	**0.22**	**0.24**						
		p	0.080	0.001	0.389	0.002	**< 0.001**	0.566	**< 0.001**	**< 0.001**	**< 0.001**						
11	DED-ISMU Social pressure	r	0.01	-0.09	0.10	0.02	**0.22**	0.02	**0.28**	0.09	**0.18**	**0.42**					
		p	0.825	0.048	0.036	0.676	**< 0.001**	0.664	**< 0.001**	0.074	**< 0.001**	**< 0.001**					
12	DED-ISMU Content-related elements	r	0.14	0.02	0.06	0.10	0.15	-0.09	**0.23**	0.08	0.10	**0.26**	**0.36**				
		p	0.003	0.641	0.241	0.043	0.002	0.050	**< 0.001**	0.088	0.035	**< 0.001**	**< 0.001**				
13	DED-ISMU Social elements	r	0.04	0.03	**0.21**	0.15	0.11	-0.12	**0.27**	0.07	0.11	**0.31**	**0.51**	**0.61**			
		p	0.429	0.502	**< 0.001**	0.002	0.022	0.013	**< 0.001**	0.132	0.026	**< 0.001**	**< 0.001**	**< 0.001**			

14	DED-ISMU Attention prompts and rewards	r	-0.01	-0.05	0.12	0.06	0.14	-0.05	**0.27**	0.13	0.17	**0.31**	**0.53**	**0.44**	**0.59**		
		p	0.908	0.319	0.010	0.250	0.004	0.299	**< 0.001**	0.005	< 0.001	**< 0.001**	**< 0.001**	**< 0.001**	**< 0.001**		
15	DED-ISMU Total	r	0.05	-0.03	0.16	0.10	**0.19**	-0.08	**0.33**	0.12	**0.17**	**0.41**	**0.76**	**0.74**	**0.86**	**0.82**	
		p	0.273	0.553	< 0.001	0.036	**< 0.001**	0.115	**< 0.001**	0.014	**< 0.001**	**< 0.001**	**< 0.001**	**< 0.001**	**< 0.001**	**< 0.001**	
16	BSMAS	r	0.01	**-0.32**	0.00	**-0.17**	**0.37**	0.14	**0.35**	**0.26**	**0.35**	**0.49**	**0.49**	**0.35**	**0.39**	**0.48**	**0.54**
		p	0.912	**< 0.001**	0.936	**< 0.001**	**< 0.001**	0.003	**< 0.001**	**< 0.001**	**< 0.001**	< 0.001	**< 0.001**	**< 0.001**	**< 0.001**	**< 0.001**	**< 0.001**

Note. BFI = Big Five Inventory; BIS-15 = Barratt Impulsiveness Scale – 15; FoMO scale = Fear of Missing Out scale; DED-ISMU scale = Design Element-Driven Increased Social Media Use scale; BSMAS = Bergen Social Media Addiction Scale. All p-values are raw p-values not corrected for multiple testing. Given the multiple tests, adjusting the alpha level to 0.0004 (0.05/120; Bonferroni correction) instead of 0.05 seems advisable. Numbers in bold indicate correlations which are significant after this correction. A strict (Bonferroni) correction was chosen because of the high number of correlational tests not only in this table but across the whole work.

Correlational Analyses – Design-Element-Driven Increased Social Media Use Scale – Item Level

Supplementary Table 4

Zero-order Spearman correlations of items of the DED-ISMU scale items with other scales of main interest in the present work (N = 440)

		BFI Openness	BFI Conscientiousness	BFI Extraversion	BFI Agreeableness	BFI Neuroticism	BIS-15 Nonplanning	BIS-15 Motor impulsivity	BIS-15 Attention impulsivity	BIS-15 Total	FoMO scale	BSMAS
Item nr.												
05	ρ	0.00	-0.11	0.08	-0.05	0.16	0.05	**0.25**	0.03	0.16	**0.35**	**0.44**
	p	0.984	0.025	0.083	0.259	< 0.001	0.284	**< 0.001**	0.487	< 0.001	**< 0.001**	**< 0.001**
06	ρ	-0.02	-0.10	0.12	-0.01	0.17	0.05	**0.23**	0.05	0.17	**0.32**	**0.38**
	p	0.707	0.029	0.014	0.767	< 0.001	0.328	**< 0.001**	0.278	< 0.001	**< 0.001**	**< 0.001**
07	ρ	0.01	-0.11	0.05	-0.01	**0.21**	0.02	**0.25**	0.07	0.16	**0.37**	**0.41**
	p	0.854	0.025	0.303	0.795	**< 0.001**	0.613	**< 0.001**	0.129	0.001	**< 0.001**	**< 0.001**
08	ρ	0.05	-0.04	0.06	0.05	**0.18**	-0.02	**0.20**	0.13	0.16	**0.35**	**0.41**
	p	0.302	0.369	0.223	0.306	**< 0.001**	0.631	**< 0.001**	0.009	< 0.001	**< 0.001**	**< 0.001**
09	ρ	0.09	0.07	0.02	0.13	0.06	-0.10	0.10	-0.03	-0.02	0.14	**0.25**
	p	0.055	0.139	0.691	0.007	0.223	0.035	0.029	0.512	0.701	0.004	**< 0.001**
10	ρ	0.00	-0.03	0.11	0.07	0.12	-0.06	**0.22**	0.11	0.12	**0.23**	**0.39**
	p	0.949	0.511	0.023	0.128	0.013	0.235	**< 0.001**	0.020	0.013	**< 0.001**	**< 0.001**
11	ρ	0.11	0.01	0.17	0.12	0.12	-0.09	**0.21**	0.07	0.10	**0.24**	**0.40**
	p	0.023	0.817	< 0.001	0.010	0.012	0.066	**< 0.001**	0.163	0.034	**< 0.001**	**< 0.001**
12	ρ	0.02	-0.04	**0.26**	0.08	0.01	-0.08	**0.19**	-0.02	0.04	**0.23**	**0.29**
	p	0.737	0.407	**< 0.001**	0.103	0.911	0.104	**< 0.001**	0.698	0.395	**< 0.001**	**< 0.001**
13	ρ	0.02	0.07	0.13	**0.19**	0.06	-0.10	**0.18**	0.08	0.09	**0.23**	0.17
	p	0.725	0.118	0.008	**< 0.001**	0.206	0.042	**< 0.001**	0.079	0.056	**< 0.001**	< 0.001
14	ρ	0.05	0.07	0.12	0.12	0.03	-0.13	**0.20**	0.01	0.04	**0.18**	**0.21**
	p	0.266	0.123	0.013	0.009	0.518	0.008	**< 0.001**	0.913	0.375	**< 0.001**	**< 0.001**
15	ρ	0.16	0.03	0.01	0.08	0.15	-0.09	**0.19**	0.06	0.06	**0.23**	**0.26**
	p	< 0.001	0.567	0.894	0.077	0.002	0.065	**< 0.001**	0.180	0.220	**< 0.001**	**< 0.001**

16	ρ	0.14	-0.02	0.04	0.05	0.13	-0.01	**0.22**	0.07	0.12	**0.24**	**0.27**
	p	0.003	0.639	0.406	0.256	0.005	0.779	**< 0.001**	0.131	0.010	**< 0.001**	**< 0.001**
17	ρ	**0.18**	0.05	0.10	0.07	0.14	-0.13	**0.21**	0.12	0.09	**0.23**	**0.27**
	p	**< 0.001**	0.287	0.044	0.133	0.004	0.006	**< 0.001**	0.013	0.054	**< 0.001**	**< 0.001**
18	ρ	0.01	0.03	0.10	0.12	0.07	-0.10	**0.22**	0.06	0.09	**0.20**	**0.32**
	p	0.830	0.512	0.042	0.013	0.145	0.034	**< 0.001**	0.244	0.071	**< 0.001**	**< 0.001**
19	ρ	0.01	-0.01	0.12	0.06	0.10	-0.04	**0.20**	0.12	0.13	**0.20**	**0.33**
	p	0.826	0.904	0.013	0.208	0.044	0.458	**< 0.001**	0.013	0.007	**< 0.001**	**< 0.001**
20	ρ	-0.03	-0.04	0.08	0.10	0.11	-0.05	0.16	0.06	0.08	**0.23**	**0.41**
	p	0.468	0.383	0.081	0.028	0.022	0.321	< 0.001	0.239	0.116	**< 0.001**	**< 0.001**
21	ρ	0.01	-0.07	0.01	0.02	0.17	-0.04	**0.20**	0.14	0.14	**0.32**	**0.40**
	p	0.877	0.155	0.915	0.724	< 0.001	0.396	**< 0.001**	0.002	0.003	**< 0.001**	**< 0.001**
22	ρ	-0.05	-0.15	0.13	-0.08	0.01	0.03	0.16	0.10	0.12	**0.19**	**0.30**
	p	0.269	0.002	0.008	0.080	0.785	0.488	0.001	0.044	0.010	**< 0.001**	**< 0.001**

Note. DED-ISMU scale = Design Element-Driven Increased Social Media Use scale; BFI = Big Five Inventory; BIS-15 = Barratt Impulsiveness Scale – 15; FoMO scale = Fear of Missing Out scale; BSMAS = Bergen Social Media Addiction Scale. All p-values are raw p-values not corrected for multiple testing. Given the multiple tests, adjusting the alpha level to 0.0003 (0.05/(18*11); Bonferroni correction) instead of 0.05 seems advisable. Numbers in bold indicate correlations which are significant after this correction. A strict (Bonferroni) correction was chosen because of the high number of correlational tests not only in this table but across the whole work.

Supplementary Table 5

Zero-order Pearson correlations of variables of main interest in the present work with scales on problematic social media use specifically for certain platforms

		BYAS (N = 382)	BFAS (N = 277)	BTwAS (N = 198)	BSAS (N = 403)	BIAS (N = 399)	BTTAS (N = 349)
BFI Openness	r	0.07	0.00	0.08	-0.03	-0.06	0.05
	p	0.180	0.943	0.246	0.613	0.236	0.350
BFI Conscientiousness	r	**-0.25**	-0.13	-0.09	-0.15	**-0.20**	**-0.21**
	p	**< 0.001**	0.025	0.225	0.003	**< 0.001**	**< 0.001**
BFI Extraversion	r	**-0.17**	-0.09	-0.09	**0.21**	0.03	0.01
	p	**0.001**	0.122	0.198	**< 0.001**	0.492	0.849
BFI Agreeableness	r	**-0.16**	-0.13	-0.06	-0.09	**-0.15**	-0.14
	p	**0.002**	0.035	0.386	0.061	**0.002**	0.007
BFI Neuroticism	r	**0.23**	**0.19**	0.12	**0.30**	**0.20**	**0.34**
	p	**< 0.001**	**0.002**	0.100	**< 0.001**	**< 0.001**	**< 0.001**
BIS-15 Nonplanning	r	0.08	0.02	0.06	0.09	0.10	0.03
	p	0.136	0.758	0.406	0.069	0.046	0.616
BIS-15 Motor impulsivity	r	**0.19**	**0.19**	0.15	**0.31**	**0.23**	**0.28**
	p	**< 0.001**	**0.001**	0.033	**< 0.001**	**< 0.001**	**< 0.001**
BIS-15 Attention impulsivity	r	0.11	0.09	0.07	**0.20**	0.13	**0.20**
	p	0.025	0.134	0.354	**< 0.001**	0.008	**< 0.001**
BIS-15 Total	r	**0.17**	0.14	0.12	**0.28**	**0.22**	**0.23**
	p	**< 0.001**	0.019	0.085	**< 0.001**	**< 0.001**	**< 0.001**
FoMO scale	r	**0.23**	**0.22**	0.17	**0.40**	**0.25**	**0.38**
	p	**< 0.001**	**< 0.001**	0.019	**< 0.001**	**< 0.001**	**< 0.001**
DED-ISMU Social pressure	r	**0.19**	**0.23**	0.18	**0.47**	**0.37**	**0.37**
	p	**< 0.001**	**< 0.001**	0.013	**< 0.001**	**< 0.001**	**< 0.001**
DED-ISMU Content-related elements	r	**0.18**	**0.23**	0.19	**0.31**	**0.18**	**0.37**
	p	**< 0.001**	**< 0.001**	0.008	**< 0.001**	**< 0.001**	**< 0.001**
DED-ISMU Social elements	r	0.11	**0.30**	0.20	**0.45**	**0.35**	**0.38**
	p	0.040	**< 0.001**	0.004	**< 0.001**	**< 0.001**	**< 0.001**
DED-ISMU Attention prompts and rewards	r	**0.18**	**0.31**	**0.23**	**0.50**	**0.37**	**0.37**
	p	**< 0.001**	**< 0.001**	**0.001**	**< 0.001**	**< 0.001**	**< 0.001**
DED-ISMU Total	r	**0.20**	**0.33**	**0.25**	**0.56**	**0.42**	**0.47**
	p	**< 0.001**	**< 0.001**	**< 0.001**	**< 0.001**	**< 0.001**	**< 0.001**
BSMAS	r	**0.43**	**0.45**	**0.24**	**0.63**	**0.64**	**0.68**
	p	**< 0.001**	**< 0.001**	**< 0.001**	**< 0.001**	**< 0.001**	**< 0.001**

Note. BFI = Big Five Inventory; BIS-15 = Barratt Impulsiveness Scale – 15; FoMO scale = Fear of Missing Out scale; DED-ISMU scale = Design Element-Driven Increased Social Media Use scale; BSMAS = Bergen Social Media Addiction Scale; BYAS = Bergen Youtube Addiction Scale; BFAS = Bergen Facebook Addiction Scale; BTwAS = Bergen Twitter Addiction Scale; BSAS = Bergen Snapchat Addiction Scale; BIAS = Bergen Instagram Addiction Scale; BTTAS = Bergen TikTok Addiction Scale. Only participants are included who provided responses to all items of the BYAS, BFAS, BTwAS, BSAS, BIAS, BTTAS, respectively. All p-values are raw p-values not corrected for multiple testing. Given the multiple tests, adjusting the alpha level to 0.0031 (0.05/16; Bonferroni correction) instead of 0.05 seems advisable. Numbers in bold indicate correlations which are significant after this correction. A strict (Bonferroni) correction was chosen because of the high number of correlational tests not only in this table but across the whole work.

Supplementary Table 6

Zero-order Spearman correlations of items of the DED-ISMU scale items with scales on problematic social media use specifically for certain platforms

		BYAS (N = 382)	BFAS (N = 277)	BTwAS (N = 198)	BSAS (N = 403)	BIAS (N = 399)	BTTAS (N = 349)
Item nr.							
05	ρ	**0.15**	**0.23**	0.17	**0.42**	**0.36**	**0.32**
	p	**0.002**	**< 0.001**	0.015	**< 0.001**	**< 0.001**	**< 0.001**
06	ρ	0.12	0.16	0.13	**0.40**	**0.32**	**0.30**
	p	0.015	0.008	0.079	**< 0.001**	**< 0.001**	**< 0.001**
07	ρ	0.12	**0.22**	0.19	**0.40**	**0.29**	**0.33**
	p	0.020	**< 0.001**	0.006	**< 0.001**	**< 0.001**	**< 0.001**
08	ρ	0.12	0.09	0.20	**0.35**	**0.22**	**0.28**
	p	0.023	0.116	0.004	**< 0.001**	**< 0.001**	**< 0.001**
09	ρ	0.08	0.14	0.10	**0.17**	0.12	**0.29**
	p	0.101	0.017	0.171	**< 0.001**	0.015	**< 0.001**
10	ρ	0.03	**0.29**	0.21	**0.40**	**0.34**	**0.39**
	p	0.589	**< 0.001**	0.004	**< 0.001**	**< 0.001**	**< 0.001**
11	ρ	0.09	**0.20**	0.11	**0.39**	**0.26**	**0.34**
	p	0.074	**0.001**	0.138	**< 0.001**	**< 0.001**	**< 0.001**
12	ρ	0.08	**0.24**	**0.24**	**0.37**	**0.32**	**0.28**
	p	0.116	**< 0.001**	**< 0.001**	**< 0.001**	**< 0.001**	**< 0.001**
13	ρ	-0.03	0.07	0.08	**0.29**	0.14	**0.20**
	p	0.621	0.280	0.292	**< 0.001**	0.005	**< 0.001**
14	ρ	0.10	**0.25**	0.13	**0.22**	0.14	**0.19**
	p	0.061	**< 0.001**	0.078	**< 0.001**	0.004	**< 0.001**
15	ρ	**0.20**	**0.21**	0.20	**0.17**	0.08	**0.30**
	p	**< 0.001**	**< 0.001**	0.004	**< 0.001**	0.107	**< 0.001**
16	ρ	0.12	0.15	0.19	**0.26**	0.08	**0.29**
	p	0.022	0.013	0.008	**< 0.001**	0.103	**< 0.001**
17	ρ	0.12	0.14	0.11	**0.29**	0.11	**0.30**
	p	0.022	0.023	0.117	**< 0.001**	0.031	**< 0.001**
18	ρ	0.07	**0.22**	0.12	**0.34**	**0.21**	**0.21**
	p	0.169	**< 0.001**	0.105	**< 0.001**	**< 0.001**	**< 0.001**
19	ρ	0.03	0.13	0.13	**0.33**	**0.17**	**0.25**
	p	0.564	0.029	0.077	**< 0.001**	**< 0.001**	**< 0.001**
20	ρ	**0.16**	**0.23**	0.15	**0.42**	**0.37**	**0.37**
	p	**0.002**	**< 0.001**	0.032	**< 0.001**	**< 0.001**	**< 0.001**
21	ρ	0.13	**0.31**	**0.24**	**0.47**	**0.30**	**0.36**
	p	0.010	**< 0.001**	**< 0.001**	**< 0.001**	**< 0.001**	**< 0.001**
22	ρ	0.14	**0.29**	0.20	**0.35**	**0.29**	0.16
	p	0.006	**< 0.001**	0.005	**< 0.001**	**< 0.001**	0.003

Note. BFI = Big Five Inventory; BIS-15 = Barratt Impulsiveness Scale – 15; FoMO scale = Fear of Missing Out scale; DED-ISMU scale = Design Element-Driven Increased Social Media Use scale; BSMAS = Bergen Social Media Addiction Scale; BYAS = Bergen Youtube Addiction Scale; BFAS = Bergen Facebook Addiction Scale; BTwAS = Bergen Twitter Addiction Scale; BSAS = Bergen Snapchat Addiction Scale; BIAS = Bergen Instagram Addiction Scale; BTTAS = Bergen TikTok Addiction Scale. Only participants are included who provided responses to all items of the BYAS, BFAS, BTwAS, BSAS, BIAS, BTTAS, respectively. All p-values are raw p-values not corrected for multiple testing. Given the multiple tests, adjusting the alpha level to 0.0028 (0.05/18; Bonferroni correction) instead of 0.05 seems advisable. Numbers in bold indicate correlations which are

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