



Research Article

Why Selfie? Gender Invariance in Motives for Taking and Posting Selfies

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Abstract

The study of motivation to engage in media-related behavioral addictions requires more research attention. Studies had identified generic motives across different types of media-related behavioral addictions, while other studies have revealed unique motives that are only applicable in specific media-related behavioral addictions. The current study aims to evaluate the psychometric properties of the Motives for Taking and Posting Selfies Scale (MTPSS). A total of 207 university students in Malaysia were recruited to participate in this study, with 98 males (47.3%) and 109 females (52.7%), aged between 19 and 24 years old ($M = 20.92$, $SD = 1.23$). The results support the original four-factor structure of the MTPSS, namely appraisal-seeking self-presentation, entertainment, status-updating self-presentation, and documentation. In terms of reliability, the MTPSS demonstrated good internal consistency. The gender invariance of MTPSS was tested in configural, metric, scalar, and residual invariance models, supporting the notion that males and females responded similarly to the items of the MTPSS. Overall, the psychometric evidence suggests that the MTPSS is a valid and reliable tool for identifying motives of taking and posting selfies. With evidence of reliability, validity, and gender invariance, the MTPSS is found to be effective in understanding the motivational drivers of selfie-taking and posting behaviors.

Keywords: selfie; motives; psychometrics; confirmatory factor analysis; gender invariance.

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Media-related behavioral addictions have received large research attention in recent years. The media-related behavioral addictions have been expanded to encompass a wider range of media, including internet gaming disorder ([American Psychiatric Association, 2013](#)), internet addiction ([Shaw & Black, 2008](#)), social media addiction ([Sun & Zhang, 2020](#)), sedentary behaviors ([Hadgraft et al., 2018](#)), and problematic smartphone use ([Panova & Carbonell, 2018](#)). Furthermore, studies have delved into more specific functions or platforms of media use, such as binge-watching ([Flayelle et al., 2020](#)), Instagram addiction ([Ponnusamy et al., 2020](#)), and *mukbang* addiction ([Kircaburun et al., 2020](#)).

Earlier studies tend to adopt a compulsive view of media-related behavioral addictions ([van Rooij et al., 2010](#)), whereby the individuals were expected to experience a loss of control over their behavior. More recently, there has been an increased emphasis on the motivational drivers of media-related behavioral addictions ([Karddefelt-Winther, 2014](#)). In contrast to the compulsive perspective, this line of research suggests that individuals engage in media-related behavioral addictions for compensatory purposes. In other words, media-related behavioral addiction is hypothesized to be a conscious choice of the individuals to solve unmet needs, rather than being an automated unconscious act. For example, if an individual experiences poor social support in real life, the individual might turn to selfie-taking and posting to gain social support on social media (e.g., through likes and shares). For this reason, much research has been placed on exploring the potential motives for engaging in media-related behavioral addictions ([Chen et al., 2017](#); [Demetrovics et al., 2011](#); [Yee, 2006](#)).

On the one hand, studies have identified some motives that are generic and common across different types of media-related behavioral addictions. For example, [American Psychiatric Association \(2013, p. 795\)](#) proposed the “use of Internet games to escape or relieve a negative mood (e.g., feelings of helplessness, guilt, anxiety)” as a criterion for internet gaming disorder.

Similarly, the escapism motive has been observed in other media-related activities as well, which include Pokémon Go (e.g., to take my mind off work and other worries; Yang & Liu, 2017), Instagram (e.g., to escape from reality; Lee et al., 2015), and watching TV series (e.g., I watch TV series to escape reality and seek shelter in fictional worlds; Flayelle et al., 2020). Other generic motives include social motives (e.g., to socialize with others in the virtual world) and achievement motives (e.g., being recognized in a specific field).

On the other hand, studies found some motives that are unique to a specific media-related behavioral addiction. For example, individuals may be motivated to shop online due to its convenience (Adaji et al., 2020). Individuals might use Instagram for archiving (e.g., to record daily events through photos) and peeking motives (e.g., to browse daily lives of people all over the world; Lee et al., 2015), which may not be relevant to other forms of media-related behavioral addictions. Similarly, Flayelle et al. (2020) revealed enrichment as one unique motive of watching TV series (e.g., I watch TV series to develop my personality and broaden my views). Clearly, individuals engage in different types of media-related behavioral addictions for different motives.

The identification of unique motives is essential in the development of interventions to reduce media-related behavioral addiction. However, the current literature largely focuses on gaming motives (e.g., Ballabio et al., 2017; Kuss et al., 2012; Wu et al., 2016). Similar to gaming, many individuals engage in regular selfie-taking and posting (Dutta et al., 2016; Gawade, 2019). However, it is important to note that gaming typically involve immersive experience in virtual worlds (Cheah et al., 2022), while selfie-taking and posting are primarily driven by self-expression and self-presentation (Al-Kandari & Abdelaziz, 2018). Considering the different natures of gaming and selfie-taking, the motives that drive individuals to play games might not necessarily apply to selfie-taking and posting.

While the act of taking a self-portrait might seem harmless, some individuals are willing to engage in dangerous selfies to create interesting and exciting selfies (Behera et al., 2020). Studies demonstrated that selfie-taking and posting have become an important source of self-esteem for many individuals (Pounders et al., 2016; Shin et al., 2017; Wang et al., 2020). In the longer term, excessive reliance on selfie-taking and posting for self-esteem needs might be problematic. Studies have documented that selfie-taking and posting are associated with potential negative psychological and behavioral outcomes, such as self-objectification (Veldhuis et al., 2020), worsened body image (Mills et al., 2018), and restrained eating (Niu et al., 2020).

Additionally, frequent selfie-taking and posting might expose individuals to cyber-risks (Krämer & Schäwel, 2020).

Recognizing the importance to understand the motives that drive individuals' selfie-taking and posting, the Motives for Taking and Posting Selfies Scale (MTPSS) appears to be an appropriate measure to serve this research need. The MTPSS was designed as a short and easy-to-use questionnaire that can serve across various research settings. It assesses the four unique motives associated with selfie-taking and posting: appraisal-seeking self-presentation (e.g., the selfie provides me with more self-esteem about the way I look), entertainment (e.g., it is fun to take selfies), status-updating self-presentation (e.g., I like to inform people about my life activities and the things I do), and documentation (e.g., I like to record my memories). Exploratory factor analysis provided support for the four-factor structure of the MTPSS in a sample of 404 university students (Al-Kandari & Abdelaziz, 2018).

However, there are no further psychometric evaluations of the MTPSS, including an assessment of gender invariance. Gender differences have frequently been raised in studies investigating motives for engaging in different media-related activities (Huang & Su, 2018; Jansz et al., 2010). Similarly, Al-Kandari and Abdelaziz (2018) revealed a significant gender difference in the appraisal-seeking self-presentation subscale of the MTPSS. However, there remains a possibility that both genders might respond differently to the items of the MTPSS, highlighting the necessity of evaluating gender invariance in the MTPSS to facilitate a more meaningful interpretation of gender differences.

Thus, more psychometric evidence is needed to support MTPSS as a reliable and valid tool. The present study aimed to further evaluate the psychometric properties of the MTPSS, which include factorial validity, gender invariance, and internal consistency.

Method

Participants and Procedures

A total of 207 university students participated in the current study. The respondents consist of 98 males (47.3%) and 109 females (52.7%), aged between 19 and 24 years old ($M = 20.92$, $SD = 1.23$). The current study was approved by the university's research ethics committee. With the permission from related authority and lecturers, four classes were randomly selected from a university. All university students who attended the selected classes were invited to participate

in this study voluntarily. University students who agreed to participate were provided with an informed consent form. The university students were reminded of their right to withdraw themselves from the current study without penalty, and not to discuss the items with each other. With the informed consent, the university students were provided with a set of questionnaire.

Measures

Motives for Taking and Posting Selfies Scale (MTPSS). The MTPSS (Al-Kandari & Abdelaziz, 2018) was designed as a self-report measure comprised of motives for taking and posting selfies, namely appraisal-seeking self-presentation (4 items), entertainment (3 items), status-updating self-presentation (3 items), and documentation (3 items). The item response was designed as a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The MTPSS demonstrated good internal consistency in a sample of 404 university students (Al-Kandari & Abdelaziz, 2018), with Cronbach's alphas ranged between .80 and .87.

Statistical Procedures

All data were subjected to psychometric tests using SPSS 23 and Amos 22. First, SPSS was utilized to examine basic descriptive statistics. Second, confirmatory factor analysis (CFA) was conducted to examine the four-factor structure of the MTPSS. The model was evaluated with a set of fit indices as recommended by El-Den et al. (2020). Specifically, the model demonstrates a good fit if: (i) TLI and CFI higher than .9, (ii) RMSEA lower than .08, and (iii) χ^2/df below 5. Third, four invariance models with increasing constraints were developed to evaluate the gender invariance of MTPSS, which include configural, metric, scalar, and residual invariance models. The gender invariance was evaluated with a set of fit indices as recommended by Chen (2007), with a change of $\geq -.010$ in CFI, supplemented by a change of $\geq .015$ in RMSEA would indicate non-invariance. Fourth, an independent *t*-test was conducted to compare the gender difference in MTPSS scores.

Results

Descriptive Analysis

Table 1 presents the descriptive analysis for MTPSS at the item level. The values of skewness and kurtosis are within the acceptable range of ± 2 , indicating that the assumption of normality was met.

Table 1.

Descriptive statistics of Motives for Taking and Posting Selfies Scale

Item	Mean	SD	Skewness	Kurtosis
Item 1	2.77	1.049	-0.109	-0.636
Item 2	2.83	1.051	-0.102	-0.657
Item 3	2.98	1.125	-0.138	-0.787
Item 4	2.94	1.113	-0.034	-0.634
Item 5	3.12	1.147	-0.327	-0.695
Item 6	2.89	1.053	-0.153	-0.533
Item 7	2.54	1.064	0.001	-0.858
Item 8	2.75	1.143	0.052	-0.888
Item 9	2.61	1.105	0.169	-0.627
Item 10	2.67	1.182	0.092	-0.969
Item 11	3.78	1.130	-1.009	0.481
Item 12	3.72	1.135	-0.911	0.186
Item 13	3.34	1.224	-0.425	-0.706

Factorial Validity

CFA was performed to examine the original four-factor structure of MTPSS (see Table 2). The original four-factor structure demonstrates slightly mixed findings, with $TLI = .918$, $CFI = .938$, $RMSEA = .091$, $\chi^2/df = 2.691$. In reviewing for the modification indices, it is notable that Item 1 (I like to boost my self-appreciation) is correlates highly with Item 2 (The selfie provides me with more self-esteem about the way I look). Considering that the two items consist of an element of self-esteem, incorporating a covariance path between both items seemed reasonable.

Table 2.

Goodness of fit statistics for Motives for Taking and Posting Selfies Scale

Model	TLI	CFI	RMSEA	χ^2	χ^2/df
Model 1	.918	.938	.091	158.755	2.691
Model 2	.958	.968	.065	108.552	1.872

As the result from the addition of the covariance path, the Model 2 demonstrates a good fit to the data, with $TLI = .958$, $CFI = .968$, $RMSEA = .065$, $\chi^2/df = 1.872$. All items load well to the intended factor, with standardized factor loadings ranged between .701 and .922 (see table 3). Additionally, the Model 2 was further tested with 5000 bootstrap samples. The four-factor structure does not contain zero in the 95% bias-corrected confidence interval. Hence, the CFA supports the factorial validity of the four-factor structure MTPSS.

Table 3.*Confirmatory factor analysis for Motives for Taking and Posting Selfies Scale*

Construct	Item	Standardized Factor Loadings [95% BC CI]	
		Model 1	Model 2
ASSP	Item 1	.824 [.716, .891]	.713 [.618, .789]
	Item 2	.834 [.732, .902]	.726 [.638, .801]
	Item 3	.840 [.721, .910]	.905 [.838, .954]
	Item 4	.657 [.507, .779]	.701 [.571, .798]
Entertainment	Item 5	.894 [.836, .937]	.896 [.838, .938]
	Item 6	.873 [.817, .913]	.868 [.812, .909]
	Item 7	.728 [.621, .809]	.730 [.629, .809]
SUSP	Item 8	.710 [.604, .798]	.716 [.613, .802]
	Item 9	.832 [.740, .914]	.828 [.735, .912]
	Item 10	.717 [.583, .820]	.716 [.583, .820]
Documentation	Item 11	.891 [.824, .938]	.892 [.824, .939]
	Item 12	.923 [.856, .969]	.922 [.856, .969]
	Item 13	.701 [.586, .795]	.701 [.587, .796]

Note. All standardized factor loadings are significant at the level of $p < .01$. BC CI = bias-corrected confidence interval; ASSP = appraisal-seeking self-presentation; SUSP = status-updating self-presentation

Gender Invariance

Configural, metric, and scalar invariance were supported, with insignificant $\Delta\chi^2$, and all the change of fit indices within an acceptable range (see Table 4). Although the $\Delta\chi^2$ for residual invariance was significant ($\Delta\chi^2 = 22.839$, $p < .05$), other fit indices did not surpass the recommended cut-off values ($\Delta TLI = -.003$, $\Delta CFI = -.007$, $\Delta RMSEA = .001$), supporting the residual invariance for MTPSS. Overall, the current findings support that males and females respond similarly to the items of the MTPSS.

Table 4.*Gender invariance of the Motives for Taking and Posting Selfies Scale*

Model	TLI	CFI	RMSEA	χ^2	χ^2/df	$\Delta\chi^2$	ΔTLI	ΔCFI	$\Delta RMSEA$
Configural invariance	.940	.956	.053	184.006	1.586	-	-	-	-
Metric invariance	.944	.955	.052	193.421	1.547	9.415	.004	-.001	-.001
Scalar invariance	.950	.957	.049	200.123	1.493	6.702	.006	.002	-.003
Residual invariance	.947	.950	.050	222.862	1.517	22.839*	-.003	-.007	.001

* $p < .05$

Gender Difference in Scores of MTPSS

Results of the independent t-test revealed a significant gender difference in motives for taking and posting selfies (Table 5). More specifically, females score significantly higher in all motives

for taking and posting selfies, with moderate-to-high effect sizes (Cohen’s *d* ranged between 0.352 and 0.633).

Table 5.

Gender difference in scores of Motives for Taking and Posting Selfies Scale

Motives	Mean (SD)		<i>t</i>	Cohen’s <i>d</i>
	Male	Female		
ASSP	10.82 (3.456)	12.14 (3.738)	-2.631**	0.367
Entertainment	7.69 (2.749)	9.31 (2.831)	-4.163***	0.581
SUSP	7.50 (2.668)	8.50 (2.999)	-2.535*	0.352
Documentation	9.86 (3.090)	11.74 (2.849)	-4.569***	0.633

* *p* < .05; ** *p* < .01; *** *p* < .001; ASSP = appraisal-seeking self-presentation; SUSP = status-updating self-presentation

Internal consistency

Cronbach’s alpha was evaluated as an indicator of reliability. Appraisal-seeking self-presentation (4 items; $\alpha = .864$), entertainment (3 items; $\alpha = .866$), status-updating self-presentation (3 items; $\alpha = .793$), and documentation (3 items; $\alpha = .868$) demonstrated good internal consistency in the current study. Hence, the current findings support the reliability of MTPSS.

Discussion

In a sample of university students, the current study examines the factorial validity, gender invariance, gender difference, and internal consistency of the MTPSS. Overall, the MTPSS demonstrated excellent psychometric properties as a valid measure that captures the motives for taking and posting selfies.

The CFA results support the four-factor structure of the MTPSS as proposed by [Al-Kandari and Abdelaziz \(2018\)](#). Individuals engage in selfie-taking and posting for four primary reasons, namely appraisal-seeking self-presentation, entertainment, status-updating self-presentation, and documentation. The current findings support the motivational hypothesis that individuals consciously engage in media-related activities for specific purposes. Regardless of the motive is positive or negative, individuals might develop an increasing dependent on media-related activities to fulfil their unmet needs ([Kardefelt-Winther, 2014](#)). For example, [Kaczmarek and Drażkowski \(2014\)](#) found that MMORPG players with escapism motives reported increase

online support but decrease offline social support, implying the increasing reliance on media-related activities in fulfilling social needs. Hence, it is plausible that both positive motives (e.g., to document memorable life events) and negative motives (e.g., for conspicuous expression) could potentially contribute to media-related behavioral addictions over the long terms. Future studies should further examine the relationship between the identified motives and selfie addiction. Such investigations could potentially aid in more accurate screening and identification of at-risk groups.

Furthermore, it is noteworthy that individuals may engage in different media-related activities for different motives. Individuals interested in physical activity might choose to play Pokémon Go (Yang & Liu, 2017); while individuals seeking to archive their daily lives might engage in selfie-taking and posting. In light of this consideration, past literature that focused on gaming motives (e.g., Yee, 2006) may not necessarily be relevant to other forms of media-related behavioral addictions. It is crucial to identify the unique motives to fully understand media-related behavioral addictions and advance the research line.

Gender invariance of the MTPSS emerged from the analysis of configural, metric, scalar, and residual invariance, indicating that both genders respond similarly to the items of the MTPSS. Gender invariance is an important aspect of research as it helps ensure that the measure is equally valid and reliable for both males and females. By establishing gender invariance, future studies can confidently make meaningful comparisons between genders and draw accurate conclusions from their findings. Having support for gender invariance of the MTPSS, it is safe to compare scores of MTPSS between both genders without concerns about measurement bias.

Consistent with the original validation study (Al-Kandari & Abdelaziz, 2018), the current study revealed significant gender differences in the motives of taking and posting selfies. However, it is important to note that females reported higher scores than males in all four motives. This suggests the possibility that the motives of males are not fully captured by MTPSS. Further investigation is needed to confirm the gender difference in the motives of taking and posting selfies. Alternatively, it is also possible that males and females are motivated to engage in different types of media-related activities. For example, one meta-analysis revealed a higher prevalence of internet gaming disorder among males as compared to females (Fam, 2018). Similarly, Dhir et al. (2016) found that females engage more in a series of selfie-related

behaviors than males, which include taking personal and group selfies, posting personal selfies, cropping photos, and using photographic filters. Thus, the disparity between gender might be the result of the difference in preference of media use. Future studies could consider to compare and contrast motives to engage into different media-related activities between both genders.

Regarding reliability, all four subscales of MTPSS demonstrated good internal consistency in this study, echoing the findings from [Al-Kandari and Abdelaziz \(2018\)](#). Thus, the four-factor structure of MTPSS was found to be valid and reliable in the current sample. The strong psychometric properties of MTPSS should encourage more research to strengthen this research line.

Limitations and future research suggestions

There are a few limitations that are worth noting in this study. First, the current study was designed as a cross-sectional study. For this reason, the reliability of MTPSS is evaluated with Cronbach's alpha only. Future psychometric tests in longitudinal design should shed light on the test-retest reliability of MTPSS. Second, modification to the original four-factor structure is needed to significantly improve the fit indices (i.e., incorporation of a covariance path between Item 1 and Item 2). Although the additional path is theoretically reasonable, the four-factor structure of MTPSS deserves further psychometric evaluations. Third, it is regrettable that the current study did not examine how the motives of taking and posting selfies will be associated with other selfie-related behaviors, such as frequency of selfie and photo editing. Having supported the psychometric properties of MTPSS in this study, future studies could incorporate the motives into the model explaining the development of selfie addiction.

Conclusion

Despite the limitations, this study provides evidence for MTPSS as a reliable and valid tool to measure motives of taking and posting selfies among university students. Consistent with the original study, the current study confirms the four-factor structure of MTPSS, which consist of four unique motives of taking and posting selfies. Results from gender invariance indicate that both genders respond similarly to the MTPSS. Additional findings from independent *t*-tests revealed females score higher than males in all motives of taking and posting selfies. The

current study provides a structure for researchers to understand the motivational drivers of media-related behaviors.

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Competing Interests

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