

The Relationships Between Instagram Use, Emotional and Behavioural Responses, Self-Esteem, Emotional Investment, and Social Comparison

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Abstract

This study investigates the behavioral and emotional responses to Instagram use and the role of individual difference factors in those responses. Data ($n = 315$) was collected via an online questionnaire in Norway. The mean age was 24.5 years, of whom 230 were women and 81 men. 84.8% of the participants checked Instagram at least daily, and they spent, on average, 56.1 minutes daily on the platform. The data collected was analyzed using multiple factor analyses, five hierarchical regression analyses, and path analysis. Results show that people, on average, present themselves in an enhanced way and that the amount of people that spend time and money to get content on Instagram and use deceptive presentations is generally low. Most people also get a favorable emotional effect from spending time and being active on the platform. The results also indicate that Emotional Investment, Social Comparison Orientation (SCO), and Active Use are the most important variables for determining an individual's behavioral and emotional responses on a group level. Other variables found to be important are Life Satisfaction, Representativity Mismatch in Life, and Passive Use. Interesting moderating factors include Age, Gender, Passive and Active Use, and Self-Esteem.

Keywords

Instagram, social networking sites, social comparison, emotional investment, self-esteem

Introduction

With the rise of smartphones, social media quickly became more and more popular. Estimates show that 80% of Norwegians between the ages of 16 and 79 use social media (Røgeberg, 2018). Out of the users over 18 years, 62% use Instagram every day (Ipsos, 2019). Among these are teenagers and young adults (ages 16–24), the most active users, and 90% of them use social media every day or almost every day (Røgeberg, 2018). There are many types of social networking sites (SNS), all with many similar features but also distinctive features and user bases. Instagram is currently one of the most popular social networking sites globally, with 1,393 million active users in October 2021 (Statista, 2021).

The rising popularity of social networking sites gives us an exciting new research angle in social psychology. Research shows that more time spent on the internet correlates positively with negative emotions and body dissatisfaction (Brown & Tiggemann, 2016; Fioravanti et al., 2021; Guizzo et al., 2021), stress, social overload, lower self-esteem, loneliness, and depression (Adeyanju et al.,

2021; Lup et al., 2015). On the other hand, increased use is found to lead to potential benefits like increased social contact, social capital, and better self-esteem (Lup et al., 2015). Therefore, evidence exists for both negative and positive emotional effects of using social networking sites (Lup et al., 2015). E. P. Meier and Gray (2014) found while researching Facebook (another social networking site) that it was not time spent on Facebook, but the time spent with the photo-function that correlated with body dissatisfaction (E. P. Meier & Gray, 2014; Plieger et al., 2021).

SNS allows users to present their ideal self, compared with face-to-face interactions (Vogel et al., 2014), and findings indicate that people prefer to upload good-looking pictures of themselves (Brown & Tiggemann,

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2016). The sea of profiles and readily available information about others is the perfect place to find people to compare themselves to (Haferkamp & Krämer, 2011; Kim et al., 2021; Pan & Peña, 2021). Therefore, research on how Instagram affects us, in both positive and negative ways, is essential. Because of all the different effects of Instagram use, it is also crucial to determine how someone is more and less affected and what determines this effect (Lowe-Calverley et al., 2019).

Getting likes and comments on pictures are the two main types of feedback someone can get on Instagram. Two types of like-seeking behavior in emerging adults have been identified: normative and deceptive (Dumas et al., 2017, 2020). Normative like-seeking behavior was categorized by socially accepted behaviors, for example, using filters and hashtags. Deceptive behavior was categorized by, for example, changing one's appearance in pictures or buying likes and followers. Concerningly, Dumas et al. (2017) found that 12 to 55% of young adults participated in deceptive behavior on Instagram and that using deceptive methods could lead to negative adjustment and lower well-being (Dumas et al., 2017). Deceptive methods might lead someone to feel that the "fake" version of themselves is accepted and liked and that their real self is not adequate. Reinecke and Trepte (2014) supported this by finding that authenticity online had positive effects on well-being and that those with high well-being were more likely to be authentic online (Reinecke & Trepte, 2014).

The Social Comparison Theory has been thoroughly tested with the social networking angle, and a lot of the findings point to the same results; SNS is an excellent place for people to find others to compare themselves to (Haferkamp & Krämer, 2011). When comparing themselves to the perfect ideal, which for most is unattainable, they end up with negative feelings. Haferkamp and Krämer (2011) found two moderating variables on social comparison: gender and self-esteem. People with high self-esteem are less likely to experience negative emotions after social comparison, both upwards and downwards (Haferkamp & Krämer, 2011). Exposure to upward social comparison on Facebook or Instagram has a significant negative effect on self-esteem (Diefenbach & Anders, 2022; Dumas et al., 2020; Goldstraw & Keegan, 2016; Martinez-Pecino & Garcia-Gavilán, 2019; Shchebetenko, 2019; Vogel et al., 2014). The type of feedback received is essential for how someone experiences Instagram. While positive feedback potentially gives higher self-esteem and well-being, negative feedback might have the opposite effect (Lup et al., 2015). Therefore, it is vital to not only focus on the harmful effects of the social comparison, but it may also have positive effects on the individual. Social comparison on Instagram also has a link to inspiration, which is linked to higher well-being (A. Meier & Schäfer, 2018). The

relationship between social comparison and inspiration was mediated by envy, which could be divided into two types of envy: malicious and benign envy.

Emotional investment in social networking sites is associated with lower self-esteem, anxiety, and depression (Woods & Scott, 2016). It is reasonable to think that different people vary in which degree they give Instagram this value and control over their lives. Lowe-Calverley et al. (2019) investigated emotional investment in Instagram. They found that investment was significantly associated with depression and stress but not anxiety (Lowe-Calverley et al., 2019). Previous research of the effects on subjective well-being as a result of using social networking sites has, in general, given ambiguous results. On the one hand, findings indicate that using social networking sites has a positive effect on subjective well-being and life satisfaction, and positive emotions. On the other hand, findings indicate that using social networking sites is linked to depression, anxiety, and narcissistic behavior (Burnell et al., 2020; Krasnova et al., 2015; Piteo & Ward, 2020; Wang, 2017).

This study uses an exploratory approach to how the use of Instagram affects its users emotionally and behaviorally and which individual factors influence how affected an individual becomes. Since the approach was exploratory, exact research hypotheses were not formulated but the directions of relationships were left to be determined empirically. The main motivation behind the study was the assumption that awareness about the effects of Instagram use might help people to reduce the adverse effects and facilitate the positive effects while using Instagram. The variables measured were gender, age, main personality factors, self-esteem, shyness, life satisfaction, Social Comparison Orientation (SCO), emotional investment, representativity, and different Instagram use measures. The aims of the study were to answer the following research questions (RQ):

RQ1: How does Instagram use effect an individual emotionally and behaviorally

RQ2: What makes some individuals more affected than others?

Methods

Sample

Three hundred fifteen people fully completed the survey ($N = 315$). The mean age was 24.5 years ($SD = 9.066$), of whom 230 were women and 81 men. Four participants did not indicate their gender. The descriptive statistics showed that 57.7% of participants checked Instagram multiple times each day, and 84.8% checked Instagram at least once a day. Most participants (76.6%) had from 0 to 600 followers, and they used, on average, just under

Table 1. Descriptive Statistics.

Variable	<i>M</i>	<i>SD</i>	α
Minutes daily	45.7	38.4	NA
Number of followers	1.9	0.91	NA
How often check pr. day	2.3	1.03	NA
Intentions			
Observation	5.18	0.98	.62
Self-presentation	3.39	1.23	.63
Activity			
Active and self-centered	2.38	0.33	.85
Passive and communicative	3.29	0.42	.80
Emotional responses			
Envy	2.57	0.32	.77
Awaiting feedback	2.26	0.49	.66
Behavioral responses			
Enhanced presentation	2.82	0.49	.80
Money and time	1.42	0.02	.79
Deceptive presentation	1.64	0.17	.70
Representativity			
Life	0.54	1.11	.62
Appearance	0.68	1.20	.63

1 hour (56.13 minutes) daily on the platform ($SD = 38.934$). Descriptive statistics for Instagram use are presented in Table 1 for men and women separately. We can see that women check Instagram more often than men, and they have, on average, more Followers and spend more time on the app.

Procedure

The online questionnaire program SelectSurvey was used for data collection. The participants were volunteers who were assured about anonymity and that no identification information was recorded. The questionnaire was distributed on Facebook and in the university campuses.

Measurements

Gender and age were both measured using one question each. Personality was measured using the BFI-10, a short 10 item version of the Big Five Inventory (BFI-44) (Rammstedt & John, 2007). To measure self-esteem, the 10-item Self-Esteem Scale was used (Rosenberg, 1965). The Satisfaction with Life Scale (SWLS) was used as a measure of life satisfaction (Diener et al., 1985).

Since there is no standardized measure of Instagram use (Stapleton et al., 2017), a combination of different measures was used. At the beginning of the questionnaire, there were three 1-item measures: a question about the minutes spent on the platform every day; a question about how often the participant checks Instagram (from “about once every hour” to “once a week or more rarely”); and a question about the number of followers

the participants had on Instagram (0–300, 301–600, 601–1,000, 1,001–5,000, and 5,001 +).

The Instagram use was also measured with two more extensive measures. First, we used a modified scale inspired by Yang (2016), measuring three types of use; interactive, passive, and active (Yang, 2016). Yang’s (2016)’s measure has six questions; the one used in this study includes 12 questions (Yang, 2016). The new items included were more specific to new features on Instagram, like “stories” and direct messages. We also added a question on editing pictures for Instagram. The new 12 item scale measuring Instagram activity was subjected to exploratory factor analysis (EFA) (maximum likelihood extraction method and direct oblimin rotation) to investigate the scale’s construct validity. The results supported a two-factor solution in which the first factor represented self-focused use and the second factor represented passive and communicative use.

The last measure on Instagram use was the intentions behind using Instagram. The ten intention items were analyzed with EFA (maximum likelihood extraction method and varimax rotation). The analyses yielded two factors: Factor 1 representing self-presentation and wish to have followers, and Factor 2 referring to observing others and entertainment.

Emotional Investment in Instagram was measured with the 10-item Social Media Use Integration Scale (SMUIS) by Jenkins-Guarnieri, Wright, and Johnson (Jenkins-Guarnieri et al., 2013). The phrasing of the questions was changed to focus on investment in Instagram, as done by Woods and Scott (2016) for Facebook among teens (Woods & Scott, 2016).

A modified version of the Iowa-Netherlands Comparison Orientation Measure (INCOM) by Gibbons and Buunk (Gibbons & Buunk, 1999) was used to measure participants’ tendency to engage in social comparison. The measure was modified to measure social comparison on Instagram, as was done earlier for Facebook (Feinstein et al., 2013) and for Instagram (Stapleton et al., 2017). In this study, the first 6 items in the measure were included, in line with the authors’ recommendations on the use of the measure (Gibbons & Buunk, 1999).

Emotional responses to Instagram use were measured using 12 items. A high score (4–5) indicated a more negative effect, a low value (1–2) indicated a positive effect, and a score around 3 indicates no change. The EFA of the 12 items (maximum likelihood modelling, varimax rotation) resulted as two factors, which were labelled as “envy” and “awaiting and getting feedback,” for instance, when having posted a picture or gotten a comment.

Behavioral responses to Instagram use were measured by using 12 questions. For the 12 items in the behavioral

Table 2. Correlations Among Variables Measuring Different Aspects of Instagram Use.

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Minutes	1														
2. Checking	-.57**	1													
3. Followers	.38**	-.38**	1												
4. Int.: obs.	.33**	-.46**	.24**	1											
5. Int.: self-pres.	.14*	-.29**	.22*	.26**	1										
6. Active use	.42**	-.54**	.57**	.27**	.52**	1									
7. Passive use	.52**	-.71**	.44**	.53**	.27**	.59**	1								
8. Emo. invest.	.47**	-.69**	.49**	.42**	.37**	.65**	.66**	1							
9. SCO	.27**	-.42**	.33**	.38**	.41**	.58**	.50**	.54*	1						
10. Feedback	-.17**	.29**	-.16**	-.22**	-.34**	-.41**	-.25**	-.35	-.20**	1					
11. Envy	-.08	.04	-.03	-.00	-.08	-.06	-.04	-.07	.24**	.28**	1				
12. Enhanced pres.	.32**	-.48**	.43**	.38**	.39**	.62**	.51**	.59**	.63**	-.26**	.09	1			
13. Money and time	.25**	-.27**	.39**	.20**	.28**	.47**	.29**	.44**	.42**	-.08	.06	.49**	1		
14. Deceptive pres.	.27**	-.31**	.35**	.27**	.26**	.48**	.44**	.38**	.57**	-.05	.18**	.57**	.51**	1	
15. Rep.: life	.03	-.18**	.08	.15**	.16**	.16**	.13*	.10	.00	-.20**	-.15**	.07	-.07	-.13*	1
16. Rep.: appearance	.06	-.10	.03	.14*	.10	.10	.15*	.05	.05	-.13*	-.10	.01	.04	-.05	.52**

* $p < .05$. ** $p < .01$.

response measure, EFA with maximum likelihood extraction with direct oblimin rotation was conducted, and three factors were obtained. Factor 1 represented a behavioral pattern in which the elevated presentation of themselves was maintained, and only the best pictures were posted. Factor 2 represented spending money or letting picture opportunities affect one's behavior, while Factor 3 represented using deceptive methods to keep the illusion of a better life.

Four items were used to measure Instagram's representativity. The sum variable measures the mismatch between how "authentic" they are online and how authentic they think others are online. A positive value indicates that the participant thinks they are more authentic than others, and a negative value the opposite. People seem to believe that they are more authentic online than others.

Results

Descriptive Statistics

Descriptive statistics (mean and standard deviation and alpha coefficient) for the study variables are presented in Table 1. All alpha coefficients were above 0.60, which can be considered as satisfactory taken into account that many of the scales had only a few items.

Correlation Analyses

Pearson product-moment correlations among variables measuring different aspects of Instagram use are presented in Table 2, and correlations between Instagram use variables and the other (independent) variables are presented in Table 3.

Structural Equation Modelling (SEM): A Path Analysis

Before applying SEM for the data, several regression analyses were conducted. The initial SEM model was created based on the theoretical assumptions and the results from the regression analyses. Due to space constraints and the fact that the SEM model provides a more elaborated presentation of the results, the regression models are not reported here.

The coefficients for the endogenous variables in the structure model are presented in Table 4, while the final model can be seen in Figure 1. For assessing the fit of the SEM model, the following fit indexes were used: standardized root mean squared residuals (SRMR), root mean square error of approximation (RMSEA), and comparative fit index (CFI). The model showed an acceptable fit (RMSEA = 0.014; CFI = 0.99; SRMR = 0.032) (Mehmetoglu & Jakobsen, 2016). The CD (coefficient of determination) for the model was 0.713, which can be

Table 3. Correlations Between Instagram Use Variables and Gender, Age, Personality Factors, Self-esteem, Life Satisfaction, and Shyness.

	Gender	Age	Extroversion	Agreeableness	Conscientiousness	Neuroticism	Openness	Self-esteem	Life satisfaction	Shyness
Minutes	.18**	-.32**	.04	.12*	.05	.02	.00	-.09	.01	-.07
Checking	-.22**	.39**	-.12*	-.08	-.03	-.09	.03	.08	.01	.14*
Followers	.20**	-.30**	.22**	.07	.08	.10	-.04	-.02	-.02	-.19**
Int.: Observation	.31**	-.39**	-.02	.16**	.04	.25**	-.07	-.11	-.04	.04
Int.: Self-presentation	.11*	-.10	.18**	-.02	.07	.13*	.13*	-.01	-.01	-.11*
Active use	.29**	-.21**	.24**	.07	.10	.14*	.08	-.09	.01	-.18**
Passive use	.26**	-.51**	.15**	.05	.02	.19**	.05	.15**	-.07	-.11*
Emotional investment	.25**	-.28**	.12*	.14*	.10	.15**	-.04	.05	-.00	-.09
Social comparison	.21**	-.29**	.04	.09	.01	.39**	-.03	-.34**	-.19**	.00
Feedback	-.08	.05	-.17**	-.04	-.01	-.02	-.07	-.09	-.10	.13*
Envy	.02	-.09	-.12*	.05	-.03	.21**	.02	-.21**	-.13*	.08
Enhanced presentation	.33**	-.29**	.09	.09	.09	.25**	.08	-.16**	-.09	-.05
Money and time	.21**	-.11*	.12*	.07	.01	.15**	.06	-.13*	-.09	-.07
Deceptive presentation	.15**	-.24**	.10	.00	.03	.19**	.07	-.18**	-.18**	-.05
Representativity: Life	.08	-.05	.07	.01	.01	-.03	.06	.02	.01	-.08
Representativity: Looks	-.03	-.14	.07	-.05	-.05	-.05	.10	.04	.01	-.11*

* $p < .05$. ** $p < .01$.

considered high. The R^2 varied considerably between the different endogenous variables: For Emotional Investment R^2 was 0.537, for Social Comparison R^2 was 0.446, for Enhanced Presentation R^2 was 0.514, for Money and Time R^2 was 0.274, for Deceptive Presentation R^2 was 0.372, for Feedback R^2 was 0.178, and for Envy R^2 was 0.124.

Figure 1 shows the final path model (SEM) presenting the direct and mediated effects by emotional investment and social comparison. It should be noted that Figure 1 presents only the statistically significant relationships ($p < .05$). Life satisfaction had a negative effect ($\beta = -.06$, $p = .139$) on deceptive presentation, but this regression path was not statistically significant. Emotional investment had a negative effect on feedback, but the relationship was not statistically significant ($\beta = -.13$, $p = .051$).

Correlations between variables and errors have been omitted for the sake of clarity. Self-esteem correlated with life-satisfaction (0.61), shyness (-0.29), and passive activity level (-0.15). Life-satisfaction correlated with shyness (-0.15). Shyness correlated with active (-0.17) and passive (-0.11) activity level. Activity correlated with passivity (0.59).

The errors of the mediator variables “emotional investment” and “social comparison” had positive inter-correlations (0.23). Dependent variable “enhanced presentation” correlated with time and money (0.20), and deceptive presentation (0.28). Time and money correlated with deceptive presentation (0.34) and feedback (0.14). Deceptive presentation correlated with feedback (0.16) and envy (0.09). Feedback correlated with envy (0.25).

An additional analysis of the indirect effects shows that even though self-esteem did not directly significantly affect the behavioral and emotional responses, it did have an indirect effect. Self-Esteem has a significant indirect effect on Enhanced Presentation ($b = -.133$, $SE = .029$, $p < .001$), Money and Time ($b = -.036$, $SE = .015$, $p = .016$), Deceptive Presentation ($b = -.097$, $SE = .021$, $p < .000$) and Envy ($b = -.103$, $SE = .022$, $p < .000$).

Discussion

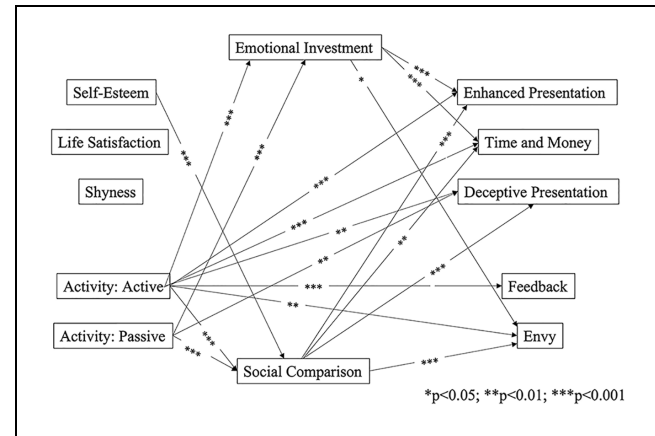
On average, we see that while people present themselves in an enhanced way, the number of people who spend time and money to get content on Instagram and use deceptive presentations is low in general. Most people get a favorable emotional effect from spending time and being active on the platform. The current study results indicate that emotional investment, social comparison orientation, and active use are the most influential factors in an individual's behavioral and emotional responses on a group level. Other variables found to be important are

Table 4. Coefficients for the Endogenous Variables in the Structural Model.

	<i>b</i>	<i>SE b</i>	<i>p</i>	β
Enhanced presentation				
Social comparison	0.369	0.054	.000	.344
Emotional investment	0.333	0.078	.000	.224
Activity: active	0.317	0.065	.000	.271
Constant	0.336	0.156	.032	.330
Time and money				
Social comparison	0.100	0.034	.010	.157
Emotional Investment	0.200	0.056	.000	.226
Activity: Active	0.156	0.047	.001	.225
Constant	0.303	0.113	.007	.502
Deceptive presentation				
Social comparison	0.268	0.041	.000	.370
Life satisfaction	-0.035	0.024	.139	-.062
Activity: Active	0.138	0.048	.004	.176
Activity: Passive	0.122	0.041	.003	.157
Constant	0.439	0.164	.007	.642
Social comparison				
Self-esteem	-0.361	0.054	.000	-.279
Activity: Active	0.468	0.057	.000	.430
Activity: Passive	0.215	0.056	.000	.201
Constant	1.873	0.262	.000	2.557
Emotional investment				
Activity: Active	0.323	0.038	.000	.411
Activity: Passive	0.316	0.037	.000	.410
Constant	0.798	0.100	.000	1.169
Envy				
Social comparison	0.283	0.042	.000	.429
Emotional investment	-0.154	0.065	.018	-.172
Activity: Active	-0.143	0.052	.006	-.204
Constant	2.635	0.128	.000	4.315
Feedback				
Emotional investment	-0.100	0.051	.051	-.131
Activity: Active	-0.192	0.040	.000	-.323
Constant	2.976	0.104	.000	5.743

life satisfaction, representativity mismatch in life, and passive use. Interesting moderating factors include age, gender, passive and active use, and self-esteem.

Gender and age did not have a significant effect in the regression analyses, except for enhanced presentation. The results show that younger users and females were more likely to use enhanced presentation. This might show that gender and age are not as important when it comes to the more “extreme” behavioral and emotional responses. Other variables are more relevant in determining if you are deceptive, spend money and time, or are emotionally affected. Personality was not found to be an essential variable in this study, but it might be that personality has an indirect mediator effect via, for instance, SCO or emotional investment (Shchebetenko, 2019). Shyness was not an important factor, which is in line with the meta-analysis conducted by Appel and Gnambs (2019) who found that there was no direct effect between shyness and SNS.

**Figure 1.** Path model (SEM) presenting the direct and mediated effects by emotional investment and social comparison.

Self-Esteem had an indirect effect on four out of five responses via SCO. The indirect effects were all negative, which indicated that lower self-esteem could yield higher scores on Enhanced Presentation, Time and Money, Deceptive Presentation, and Envy. These findings are in line with previous findings that show a relationship between low self-esteem and higher SCO (Bergagna & Tartaglia, 2018; Yang, 2016), also the theory that high self-esteem can be a protective factor against upward social comparison (Haferkamp & Krämer, 2011). Stapleton et al. found that SCO did not significantly moderate the relationship between Instagram use and self-esteem, which is inconsistent with previous research on SNS (Stapleton et al., 2017). In contrast with Woods and Scott (2016) and Lowe-Calverley et al. (2019), no relationship between emotional investment and self-esteem was found in the current study.

A negative relationship between life satisfaction and deceptive use was found in the regression analysis, but this relationship was not significant in the SEM analysis. This contrasts findings that picture-based SNS are related to more life satisfaction (Lowe-Calverley et al., 2019). On the other hand, Dumas et al. also found that using deceptive methods could lead to negative adjustments and lower well-being (Dumas et al., 2017). Reinecke and Trepte (2014) supported this with research showing that authenticity online had positive effects on well-being and that those scoring high on well-being were more likely to be authentic online. Even though life satisfaction and well-being are different measures, the findings are fascinating because they underline the importance of authenticity in social media.

In general, previous findings on Instagram use indicate that there is support for both positive and negative effects of Instagram use on the individual (Adeyanju

et al., 2021; Lup et al., 2015). This is partly supported in this study by the finding that active use is an essential variable concerning all five dependent variables (emotional and behavioral responses). Other studies on the use of Instagram have also measured Instagram use in multiple ways, which is supported by the fact that active and passive use have different effects. Intentions to use Instagram were generally, in this study, found to be very similar to actual use.

Social comparison has frequently been tested concerning Instagram and is an important factor in the effects of Instagram use. This study supports the vital role of SCO. SCO was an important factor in all behavioral responses, as well as the emotional response of envy. This is in line with what Yang hypothesized; different types of Instagram use could trigger social comparison in different ways (Yang, 2016). Previous research has found SCO to moderate the relationship between self-esteem and Instagram use (Stapleton et al., 2017). This was not tested in this study, but self-esteem was found to have a significant indirect effect on the responses to Instagram use via SCO in the SEM analysis. While Haferkamp and Krämer and Brown and Tiggemann found a negative effect of SCO on the participants' moods while using Instagram, the current study found a positive effect (Brown & Tiggemann, 2016; Haferkamp & Krämer, 2011).

The emotional investment was another factor that was very important for the different responses in this study but has not previously been researched as much as SCO and active use. Woods and Scott and Lowe-Calverley et al. found connections between emotional investment and lower self-esteem, anxiety, stress, and depression (Lowe-Calverley et al., 2019; Woods & Scott, 2016). The emotional investment was not found to be significantly affected by self-esteem in the SEM analysis in this study. The emotional investment was found to have a significant negative effect on the emotional responses: envy and feedback. This means that higher scores on emotional investment can lead to a more negative effect on the measures of envy and feedback. More research on the role of emotional investment is needed.

According to our knowledge, the representativity mismatch has not previously been investigated in the context of SNS and Instagram. The means of the variables show that people, on average, think they are more authentic online than others. The finding that representativity mismatch for life significantly affected deceptive presentation in the regression analysis supported this claim. This shows that people are more likely to be deceptive on Instagram if they believe others are more authentic than they are. This might lead to a negative circle. This is an interesting new finding that should be examined further in future research.

Limitations

In this study, as in a lot of psychological and behavioral research, the participants are from a WEIRD country; this means that they are western, industrialized, rich, and democratic (Henrich et al., 2010). There were no questions asked about these factors. With the recruiting being mostly done through Facebook and with university students in Norway, it is safe to assume that a lot of the participants are from WEIRD context. It is important to remember this when evaluating the generalizability of this research (Henrich et al., 2010). In addition to limitation related to the sample, it should be noted that every theoretical model such as tested here and presented in Figure 1 is based on certain assumptions about relationships. The path model presented in the present study should be taken only as one possible theoretical model explaining the relationships among variables. While the model fitted well to the empirical data, numerous alternative models could be formed and tested.

Implications and Future Research

This study contributes to the field of research on Instagram (and SNS in general) with the findings that SCO, emotional investment, and active use are potentially the essential variables to determine an individual's behavioral and emotional effect. Other important factors are gender, age, passive use, self-esteem, followers, life satisfaction, and the perceived representativity of Instagram, but their role is uncertain. More research is needed to be able to conclude on these findings.

It is important to remember the difference between a statistical reality and a psychological reality (Richardson et al., 2011). Future research should also look into what determines a person's level of SCO and emotional investment as these are psychological traits found to be important for the effect of Instagram use on the individual user. More research efforts should also be directed towards making more standardized Instagram use measures since there are none available to date.

Conclusions

This study aimed to look at the behavioral and emotional responses to Instagram use and what individual psychological traits determine an individual's effect through an online survey. Emotional investment, social comparison orientation (SCO), and active use were the most important for determining an individual's behavioral and emotional responses. Other variables found to be significant were life satisfaction, representativity mismatch in life, and passive use. Interesting moderating factors include age, gender, passive and active use, and self-esteem. The results also show that people, on

average, present themselves in an enhanced way and that the amount of people that spend time and money to get content on Instagram and use deceptive presentations is generally low. Most people also get a favorable emotional effect from spending time and being active on the platform.

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Both authors contributed to all stages in the study.

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