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An Exploratory Study of the Relationships between Instagram Use, Emotional- and Behavioral Responses, Self-Esteem, Emotional Investment, and Social Comparison.

Master's thesis in Psychology, specialization in learning – brain, behavior, environment

Supervisor: Timo Juhani Lajunen

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Faculty of Social and Educational Sciences
Department of Psychology



Sammendrag

Denne studien vil undersøke ulike atferdsmessige og emosjonelle effekter av Instagrambruk, og hvilke individuelle psykologiske trekk som er knyttet til denne effekten hos individet. Dataene ble samlet inn via et elektronisk spørreskjema i Norge ($N=315$), og gjennomsnittlig alder var 24.5 år ($SD=9.066$), hvor av 230 var kvinner og 81 men. Av deltakerne sjekket i snitt 84.8% Instagram minst en gang daglig, og tilbrakte akkurat under en time (56.13 minutter) hver dag på plattformen ($SD=38.934$). Dataen som ble innsamlet ble analysert ved hjelp av flere faktoranalyser (Stata, JASP), fem hierarkiske regresjonsanalyser (SPSS) og en SEM-analyse (Stata), og mange moderasjonsanalyser via Hayes prosedyre (SPSS).

Resultatene viser at folk som regel bruker en Forbedret Presentasjon (Enhanced Presentation) av seg selv på Instagram, og generelt få bruker Misdledende Presentasjon (Deceptive Presentation) eller Tid og Penger (Time and Money) for å skape innhold til Instagram. De fleste fikk også en positiv emosjonell effekt av å tilbringe tid på Instagram og å aktivt bruke plattformen. Resultatene indikerer også at Emosjonell Investering, Sosial Sammenlignings Orientering (SCO) og Aktiv Bruk er de mest avgjørende variablene for de atferdsmessige og emosjonelle responsene for et individ, på gruppenivå. Andre variabler som ble funnet å være viktige var Livstilfredshet, Representativitet Mismatch og Passiv Bruk. Interessante moderasjonsfaktorer inkluderer Alder, Kjønn, Selvtillit, Passiv og Aktiv Bruk.

Nøkkelord: Instagram, Sosiale nettverk, Sosial Sammenligning, Emosjonell Investering, Selvtillit.

Abstract

This study aims to investigate the behavioral and emotional responses to Instagram use, and to study which individual psychological traits are related to the effect on an individual. Data was collected via an online questionnaire in Norway ($N=315$). The mean age was 24.5 years ($SD=9.066$), of whom 230 were women and 81 men. Of the participants 84.8% checked Instagram at least daily, and they spent, on average, just under one hour (56.13 Minutes) daily on the platform ($SD=38.934$). The data collected was analyzed using multiple factor analyses (Stata, JASP), five hierarchical regression analyses (SPSS), a SEM path analysis (Stata), and multiple moderation analyses using Hayes procedure (SPSS).

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 Presentation is generally low. Most people also get a favorable emotional affect 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 the behavioral and emotional responses for an individual 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.

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The last months of my master's degree did not end as I envisioned at all. COVID-19 took my workspace, social connections, and the celebration of finishing my education. I am grateful that my work could still be finished from home. If I were to do it again knowing everything I have learned this last year, there are things I would have changed. Despite this, I am happy and proud of the result. This is a sign that I have learned and evolved in this process.

May, 2020

Inga Sofie Olsen Haug

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EXPLORING THE EMOTIONAL- AND BEHAVIORAL RESPONSES TO INSTAGRAM USE.

With the rise of smartphones, social media quickly became more and more popular. Most people today have the opportunity to check social media multiple times daily, not only at home as was the case when computers were the only way to log on. Estimates show that 80% of Norwegians between the ages of 16 and 79 use social media (Røgeberg, 2018), where 59% of Instagram users in Norway are female (Ipsos, 2019). 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 over 1 billion active users in June 2018 (Statista, 2018).

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 was positively correlated with negative emotions and body dissatisfaction (Brown & Tiggemann, 2016), stress, social overload, lower self-esteem, loneliness, and depression (Lup, Trub, & Rosenthal, 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). 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. Other findings have found that picture-based SNS (E.g., Snapchat, and Instagram) are related to less loneliness, more happiness, and higher life satisfaction. However, this effect is not found for text-based SNS (Lowe-Calverley, Grieve, & Padgett, 2019). Instagram is a primarily picture-based SNS, so it is interesting to have a closer look at its effects on its users.

With photo sharing being the main focus of Instagram, it separates itself from other social networking sites. Instagram is such a big part of everyday life for so many people, and there are no indications that the use of Instagram might slow down, it is therefore interesting to find out what impact it may have on us. The findings on how social networking sites (SNS) affect us are ambiguous, showing both negative and positive effects on subjective well-being (Buxmann, Krasnova, Wenninger, Widjaja, & Benbasat, 2015). SNS allows users to present

their ideal self, compared with face to face interactions (Vogel, Rose, Roberts, & Eckles, 2014), and findings indicate that people preferer to upload good-looking pictures of themselves (Brown & Tiggemann, 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). 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 find out how someone is more and less affected, and what determines this effect (Lowe-Calverley et al., 2019). Even if the future of social networking sites may not lie with Instagram, there will probably be another photo-based social platform that will take its place.

On Instagram, the user has a personal profile other people can follow, and there they can share pictures or short videos that are visible on their profile. There is also a feature where people can post a “story” that is viewable for 24 hours before disappearing unless the user actively saves it to the “highlights” on their profile. Instagram provides a variety of filters and editing tools for pictures, but it is also common to use third-party editing apps. Third-party editing apps give users more editing tools. Additional features, when posting a picture on Instagram, are the options to tag other people, adding hashtags (#), and adding a geotag (picture location). The Instagram feed shows the user the pictures posted by all the people they follow, and the users can like and comment on pictures.

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. Awareness about this might help people affected by their Instagram use to reduce the adverse effects and facilitate the positive. The theoretical background for this study is Social Comparison theory and social desirability. Data collection was done by using an electronic questionnaire in Norway. The variables measured are gender, age, personality, self-esteem, shyness, life satisfaction, social comparison orientation (SCO), Emotional Investment, representativity, and different measures of Instagram use.

Theoretical and empirical Background

In all cultures, it is found that people are concerned with the impressions others have of them (Aronson, Wilson, & Akert, 2014). Krämer and Winter (2008) found that impression management was a large motive for using social networking sites; this is in line with the finding that people use Instagram mainly for self-promoting pictures (Dumas, Maxwell-Smith, Davis, & Giuliatti, 2017). Self-promoting pictures are, for instance: “selfies”,

documenting their life, showcasing creativity, increasing popularity, but also monitoring friends and other peers (Dumas et al., 2017).

Paulhus and Hogan (1984) divide social desirability into impression management and self-deception. Social desirability is the tendency to exaggerate “good” behaviors and traits, as well as lying about or underreporting “bad” behaviors and traits (Aronson et al., 2014). Impression management occurs when someone attempts to get others to see them as they want to be seen, we try to manage other people’s impressions of us all the time in our everyday lives (Aronson et al., 2014). Self-deception, on the other hand, is seeing oneself in the exaggerated positive light that one expresses (Paulhus & Hogan, 1984). Both impression management and self-deception are relevant in the world of SNS, considering the finding that people prefer to upload pictures where they look good (Brown & Tiggemann, 2016).

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). Normative like-seeking behavior was categorized by socially accepted behaviors, e.g., using filters and hashtags (Dumas et al., 2017). Deceptive behavior was categorized by, e.g., changing one’s appearance in pictures or buying likes and Followers (Dumas et al., 2017). Deceptive like-seeking behavior predicted higher scores of narcissism and a lower sense of peer belonging and had the opposite effect for those with high peer-belonging (Dumas et al., 2017). Concerningly, Dumas et al. (2017) found that 12-55% of young adults participated in deceptive behavior on Instagram.

Dumas et al. (2017) also found that using deceptive methods could lead to negative adjustments 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, Trepte, and Reinecke (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. Finding out if deceptive behavior (not displaying their true self) is the cause or a symptom would also be an interesting research question. On one side, someone with, for instance, low self-esteem might feel the need to edit or change their appearance in pictures before feeling good enough to post a picture. On the other hand, it can be argued that someone who uses deceptive behavior is not displaying their true self, and might feel that their real self is not the one getting the likes and confirmation from their peers, which can lead to lower self-esteem. Most likely, it is not either-or, but both.

Boley, Jordan, Kline, and Knollenberg (2018) investigated the role of “social return” in SNS when deciding where to go on vacation. “Social Return” is, in this context, the positive

social feedback one might get for posting about this trip on SNS (Boley et al., 2018). The results indicated that social return is a fundamental factor in the selection of a vacation destination (Boley et al., 2018). This research indicates that people change their behavior to get social rewards in the form of likes and comments. It is, based on the research by Boley et al. (2018), not farfetched to think that people in a similar fashion are affected by the social return in other aspects of their social media use. For instance: other shorter trips, the clothes purchased and used, the things brought with them, where and what they eat, hobbies, and other activities.

Social Comparison theory suggests that people learn about their abilities and attitudes by comparing themselves to the people around them (Aronson et al., 2014). Two essential aspects of the theory are whom people compare themselves to and when do they do it. People usually compare themselves to others in situations where there are no objective standards or ambiguous signals on how to behave or act (Aronson et al., 2014). When it comes to whom we compare ourselves to, the answer is not as straight forward. Most of the time, we compare ourselves to those most similar to us and have the same background in the area of comparison (Aronson et al., 2014).

There are two additional types of social comparison in addition to comparing oneself with someone similar (Aronson et al., 2014). The first is upward social comparison; this is when someone compares themselves to the “elite” on a particular trait or ability (Aronson et al., 2014). The problem with this is that it can make people feel inadequate compared to this “expert”. On the other hand, people might make a downward comparison, which is when people compare themselves to someone worse on that particular ability or task (Aronson et al., 2014). This type of comparison generally makes individuals feel more good about themselves and their abilities in that area (Aronson et al., 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 the perfect place for people to find others to compare themselves to (Haferkamp & Krämer, 2011). Social Comparison is so integrated into the human mind that we cannot escape it (Haferkamp & Krämer, 2011). Haferkamp and Krämer (2011) found that those exposed to more attractive profiles showed more negative emotions and were less satisfied with their bodies than those exposed to unattractive users. It has been consistently reported that exposure to the thin body ideal in media affects women’s body image and mood negatively (Brown & Tiggemann, 2016). When comparing themselves to the perfect ideal, which for most women is unattainable, they end up with negative feelings and a worse body image (Brown & Tiggemann, 2016). Therefore, we

know that social comparison is not only relevant for face-to-face situations but also very relevant for social networking sites.

Yang (2016) looked at Instagram use, loneliness, and Social Comparison by distributing a questionnaire to students at a public college in the USA. The researchers divided Instagram use into three categories; passive, active, and interactive use. To measure social comparison orientation (SCO), a modified version of The Iowa-Netherlands Comparison Orientation Measure (INCOME) was used (Yang, 2016). SCO is the tendency of an individual to compare himself/herself to others. Three characteristics characterize high SCO; high public and private self-consciousnesses, socially-oriented and negative emotions, and insecurity against the self (Yang, 2016). People with high SCO often score low on Self-Esteem and high on narcissism. The results showed that SCO moderated the relationship between active use and loneliness, but did not moderate the effect of passive or interactive use on loneliness (Yang, 2016). Yang (2016) hypothesized that different types of Instagram use could trigger Social Comparison in different ways.

Appel and Gnambs (2019) did a meta-analysis on the relationship between social networking sites (SNS) and Shyness. They divided SNS use into three types; general use (e.g., number of contacts), Active Use, and Passive Use. They found that there was no direct effect between Shyness and SNS. However, they found a small positive relationship between Shyness and general use (for instance, amounts of times the participants checked the app) (Appel & Gnambs, 2019). No relationship between Passive Use and Shyness was found, but the opposite is the trend in previous studies (Appel & Gnambs, 2019).

Stapleton, Luiz, and Chatwin (2017) explored the relationship between Self-Esteem, Social Comparison orientation (INCOM), Instagram use, and self-worth in emerging adults. They found that SCO did not significantly moderate the relationship between Instagram use and Self-Esteem. These findings are inconsistent with previous research on SNS, which might be because Instagram is different from other SNS, e.g., Facebook (Stapleton et al., 2017). SCO did significantly moderate the relationship between Instagram use and self-worth. Feedback from peers is essential for identity development, and in the age of emerging adults, the identity is still under development. Therefore, a psychological vulnerability, like low self-esteem, can affect this developmental process (Stapleton et al., 2017). On SNS, users can present themselves in an ideal way and enhance the traits they want others to see to explore their emerging identities (Stapleton et al., 2017).

Haferkamp and Krämer (2011) found two moderating variables on Social Comparison: Gender and Self-Esteem. Self-Esteem is defined by Aronson et al. (2014) as people's

evaluations of their self-worth, to which they tend to view themselves as good, competent, and decent. Low self-esteem is associated with depression and a person not feeling in control of their life. While high self-esteem acts as a buffer to protect their mood in trying times (Aronson et al., 2014), 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 has a significant negative effect on Self-Esteem (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).

It is therefore vital to not only focus on the harmful effects of the Social Comparison, but it may also have positive effects on the individual (Meier & Schäfer, 2018). SCO on Instagram also has a link to inspiration, which again is linked to higher well-being (Meier & Schäfer, 2018). The relationship between SCO and inspiration was found to be mediated by envy. In the study by Meier and Schäfer (2018), they operated with two types of envy; malicious and benign envy. Malicious envy is the type of hostile envy where the individual focuses on tearing the other person down. In contrast, benign envy has a more positive focus on self-evolving and bettering oneself. If Social Comparison is activated by the latter rather than the former, a person might be inspired by what they see on Instagram. This inspiration might make the person want to improve themselves, and therefore contribute to higher well-being. Higher inspiration gave the participants, on average, a more positive affect (PANAS) (Meier & Schäfer, 2018). These findings indicate that the right type of Social Comparison has positive effects on the individual and that the type of content they are exposed to is essential.

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. If someone does not measure their value in likes and comments, then likes and comments will probably not have a large influence on them. Low Emotional Investment is not to be confused with low activity on Instagram, as someone can care about likes and comments without exposing himself/herself to these people. The fear of the results, and not living up to expectations, might be what prohibits them from posting pictures.

Lowe-Calverley et al. (2019) also looked at Emotional Investment in Instagram. They found that Investment was significantly associated with depression and stress, but not anxiety. They hypothesized that the reason Followers might matter is if an individual has many people “watching them” the pressure on what to post might feel larger (Lowe-Calverley

et al., 2019). Investment significantly mediated the effect of the number of Followers and Self-Esteem. They also found a significant relationship between Investment and Self-Esteem, and between Followers and Investment. Lowe-Calverley et al. (2019) concluded that people with high Investment in Instagram might be more vulnerable to the psychological effects of Instagram use. Lowe-Calverley et al. (2019) also hypothesized, but did not test, that SCO might affect the relationship between Investment and use.

Extroverts have been found to use SNS for keeping existing relationships secure, while introverts use SNS as compensation for lack of relationships (Kircaburun & Griffiths, 2018). Based on the finding that different personalities use SNS differently, it is also a possibility that different personalities are affected differently by their Instagram consumption and use. It is important to note that this is not a one-way street; it does not either affect someone or not. The persons' personality affects how they use SNS, but personality also affects how their use of SNS affects them. Personality, therefore, might make understanding the effect of Instagram far more complicated.

Previous research of the effects on subjective well-being as a result of using social networking sites has, in general, given ambiguous results (Buxmann et al., 2015). The definition of subjective well-being is a universal measure of the quality of life of an individual (Buxmann et al., 2015). On the one hand, findings indicate that using social networking sites has a positive effect on subjective well-being, as well as Life Satisfaction and positive emotions. On the other hand, findings indicate that using social networking sites is linked to depression, anxiety, and narcissistic behavior (Buxmann et al., 2015). Because of these contradictory findings of increased use, it is fascinating to find out why someone gets a negative effect and others a positive effect. Posting pictures and getting likes might be an essential tool to help young and emerging adults to get feedback on their developing identities (Dumas et al., 2017) and navigating the social environment (Sherman, Greenfield, Hernandez, & Dapretto, 2018).

Research questions

I will use an exploratory approach to the data to investigate the relationships in this large and complex topic. There are two main research questions based on previous research. Therefore, in this study survey data will be used to answer the following questions:

RQ1: How does Instagram use affect an individual emotionally and behaviorally?

RQ2: What makes some individuals more affected than others?

Method

Participants

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 fill out 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 between 0-600 Followers, and they used, on average, just under one hour (56.13 Minutes) daily on the platform ($SD=38.934$). See Table 1 for more in-depth information about the participants' Instagram use and Table 2 for descriptive information about the other variables.

Table 1

<i>Descriptive statistics by Gender</i>	Men		Women		<i>t</i>	<i>DF</i>	<i>Sig</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Age	24.86	9.335	24.30	8.986	.481	309	.466
Minutes daily	33.85	35.980	49.87	39.189	-3.15	285	.722
Number of Followers	1.60	.832	2.02	.937	-4.54	309	.992
How often check pr. day	2.74	1.263	2.21	.948	21.73	309	.000

Note: Both Followers and how often they check Instagram is measured on a likert scale from 1 to 5. Followers: 1=0-300, 2=301-600, 3=601-1000, 4=1001-5000, 5=5000+. Checking: 1=every hour, 2=multiple times pr. day, 3=every day, 4=once a week, 5=less than once a week.

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. However, only the gender difference in how often they check Instagram pr. day was statistically significant ($p=<.001$).

Data collection and design

The online questionnaire program SelectSurvey was used for data collection. The questionnaire was distributed on Facebook and the university campuses of the Norwegian University of Science and Technology (NTNU). Also, the survey was distributed among some teenagers in the Age 18-19 on two high schools (“videregående skoler”) in Trondheim, Norway. This approach was chosen to get as many different participants in many different Age groups. The questionnaire was in Norwegian, and the full questionnaire is in the

appendix. Questions are translated into English when presented in this study in addition to the Norwegian formulation in parenthesis. Sample size calculation with G*Power indicated that a sample size of 300 was needed.

The data was collected between November 10th to December 19th in 2019. At the beginning of December 2019, Instagram started a trial for some of its users. This trial is an attempt to lower the pressure people feel around likes on Instagram. With this new function the user can no longer see the number of likes others have received on their pictures, only the likes on their pictures. Instagram announced that the function soon will be implemented for all its users. This data will potentially be the last data collected that investigates the use of Instagram, where likes have a possible influence on the individual.

SelectSurvey has the option for full anonymity, where neither the researcher nor SelectSurvey has access to participant's IP-addresses. This, combined with the fact that the questions cannot be traced to the participant, means that participation in this study was completely anonymous. This anonymity is in line with the guidelines from the Norwegian center for research data (NSD). All participants were also informed about this, and that participation was voluntary. There were no advantages or disadvantages obtained by participating.

Variables and measurements

Table 2

Descriptive statistics

Variable	<i>M</i>	<i>SD</i>	α
Self-Esteem	3.5583	.73293	.898
Extroversion	4.6746	1.49457	.785
Neuroticism	3.6286	1.42548	.614
Openness	5.0794	1.02751	.288
Agreeableness	5.1206	1.10862	.414
Conscientiousness	5.1429	1.26513	.617
Shyness	2.6889	.91570	.778
Life Satisfaction	4.4644	1.22311	.859
Social Comparison	2.3812	.94455	.881
Emotional Investment	2.5732	.68401	.857

Gender and Age. Gender and Age were both measured using one question each. Concerning Gender, the participant had to check either man, woman, or other. Age was measured by using an open question.

Personality. Personality was measured using the BFI-10, a short 10 item version of the Big Five Inventory (BFI-44) developed by Rammstedt and John (2007). The BFI-10 was found to have sufficient levels of validity and reliability, and is ideal when using a questionnaire of limited length (Rammstedt & John, 2007). This study used a Norwegian translation for the BFI-10. Rammstedt and John (2007) found a convergent validity (mean over many studies) for the Extroversion as $\alpha=.57$, Neuroticism $\alpha=.37$, Openness as $\alpha=.45$, Agreeableness as $\alpha=.40$, and Conscientiousness as $\alpha=.38$. The values obtained in this study are in Table 2, and only Openness was found to have a lower α compared with Rammstedt and John (2007). Low reliabilities are also to be expected due to the small number of items in the scale. All factors consisted of one positively worded and one negatively worded item, and the negatively worded items were reversed before sum scores were calculated. Personality was measured on a Likert scale from 1-7, from “strongly agree” to “strongly disagree”.

Self-Esteem. To measure Self-Esteem the 10-item Rosenberg (1965) Self-Esteem scale was used, with a Norwegian translation. Participants answered on a Likert scale of 1-5, from “strongly agree” to “strongly disagree”. A higher score means better Self-Esteem. Self-Esteem is defined by Aronson et al. (2014) as “people’s evaluations of their self-worth, to which extent they view themselves as good, competent, and decent”. Previous studies have shown internal consistency of $\alpha = 0.91$ (Stapleton et al., 2017), and in the present study, it was $\alpha = 0.90$.

Shyness. A modified version of the SHY measurement used in McCroskey and Richmond (1982) measure Shyness in this questionnaire. The SHY measure is originally a 14-item measure, but in this study, four items were included. The reason for this was the space limitation. The four items selected were “I am shy” (“jeg er sjenert”), “others perceive me as shy” (“andre syns jeg er sjenert”), “most people are shyer than me” (“de fleste er mer sjenert enn meg”), and “I am very talkative” (“jeg er veldig pratsom”). The Cronbach’s alpha for all four items was .176, which is very low (Field, 2013). The analysis also showed that by removing the item about being talkative, the alpha would increase to $\alpha=.780$. Therefore, this item was removed, and the measure ended up having three items in the end. Previously the internal consistency has been measured to $\alpha = 0.92$ (McCroskey & Richmond, 1982). The

item “most people are shyer than me” (“de fleste er mer sjenert enn meg”) was reversed before making the sum score.

Life Satisfaction. In this study, the Satisfaction with Life Scale (SWLS) was used (Diener, Emmons, Larsen, & Griffin, 1985). The SWLS is based on the participants’ judgment of their life now compared to their ideal (Diener et al., 1985). This comparison is based on their own standard for their ideal life, not an externally set ideal. The measure consists of five items, and items are, for instance, “In most ways, my life is close to my ideal” (“På de fleste måter er livet mitt nær idealet mitt”) and “I am satisfied with my life” (“Jeg er fornøyd med livet mitt”). This measure shows adequate correlations with Life Satisfaction measured in interviews. It also has high temporal reliability and internal consistency (Diener et al., 1985). All items were positively worded, and therefore no items needed to be reversed.

Instagram use. To date, there is no standardized measure of Instagram use (Stapleton et al., 2017). Therefore, a combination of different measures was used. At the beginning of the questionnaire, there were three one-item measures. First, the number of Minutes spent on the platform every day; this was inspired by Lup et al. (2015), who also asked about the amount of time spent on the app. Lup et al. (2015) used a Likert scale, while in this study, the participants were to write the number themselves. Secondly, there was a question about how often the participant checks Instagram on a Likert scale from “about once every hour” to “once a week or more rarely”. In the end there was a question about the number of Followers the participants had on Instagram; 0-300, 301-600, 601-1000, 1001-5000, and 5001+. The reason for including the question about Followers is the thought that more Followers might affect the effects of Instagram and the time they invest in the platform.

Also, there were two more extensive measures used. First, a modified scale inspired by Yang (2016) that looked at three different types of use; interactive, passive, and active use. The measure by Yang (2016) had six questions; the one used in this study has 12. The new items included were more specific to new features on Instagram, like “stories” and direct messages. Also included is a question on editing pictures for Instagram. A Likert scale from 1 “very rarely” to 5 “very often” was used for this measurement. The last measure on Instagram use was included based on a personal impression that people have different Intentions for using Instagram and that their Intentions behind using it might influence the effect. The Intentions included are: “to share the special happenings in life” (“Dele de spesielle hendelsene i livet mitt”), “to share everyday life” (“Dele hverdagen min med følgerne mine”), “to follow friends and others” (“Følge med på hva venner og bekjente deler”), “to follow

celebrities (“Få innblikk i livet til kjendiser ved å følge de “), “entertainment» (“underholdning”), “and to get a large following (“få flest mulig følgere “). These Intentions were measured on a Likert scale from 1 “strongly disagree” to 7 “strongly agree”. No items on these measures are phrased negatively.

Intentions for use. An exploratory factor analysis (EFA) with maximum likelihood modeling with varimax rotation was used on the ten items measuring Intentions for using Instagram. Varimax rotation was used because the correlations between the factors were low ($r=.282$)($r<.40$) (Field, 2013). The KMO was .647, which is acceptable (Field, 2013), and Bartlett’s test was significant ($p<.000$). There were extracted two factors based on eigenvalues, parallel analysis, and scree plot. The factors extracted explained 60.2% of the variance in the measure. The items included in each factor indicate that Factor 1 represents self-presentation and wanting Followers. Factor 2 represents observing others and entertainment. Both factors had low reliability, but this is still considered acceptable because the factors only have three items each and they are new measures (Field, 2013).

Table 3

Descriptive statistics Intentions

Variable	<i>M</i>	<i>SD</i>	α
Observation	5.182	.978	.621
Self-presentation	3.393	1.230	.630

Instagram activity. On the 12 items measuring activity on Instagram, EFA with maximum likelihood modeling and direct oblimin rotation was used. The KMO was .900, which is excellent (Field, 2013), and Bartlett’s test was significant ($p<.000$). Two factors were extracted based on the parallel analysis and the scree plot. The factors extracted explained 57.1% of the measured variance. The items included in each factor indicate that Factor 1 represents active, self-focused use, and Factor 2 represents passive and communicative use. Both factors had high reliability with a Chronbach $\alpha >.796$.

Table 4

Descriptive statistics Activity

Variable	<i>M</i>	<i>SD</i>	α
Active and self-centered	2.375	.327	.850
Passive and communicative	3.291	.417	.796

Emotional Investment. Emotional Investment in Instagram was measured with the 10-item Social media use integration scale (SMUIS) made by Jenkins-Guarnieri, Wright, and Johnson (2013). SMUIS is created to be adapted to different social media platforms. The phrasing of the questions was changed to specify Investment in Instagram, as done by Woods and Scott (2016) for Facebook among teens. For instance, the question “I wish everyone used social media” was changed to “I wish everyone used Instagram” (“jeg skulle ønske alle brukte Instagram”). The higher the score someone has, the more emotionally invested they are on Instagram. Jenkins-Guarnieri et al. (2013) found that Emotional Investment was separate from actual use (Minutes). One item was negatively worded and was reversed, “I do not like to use Instagram” (“jeg liker ikke å bruke Instagram”). Jenkins-Guarnieri et al. (2013) measured a $\alpha=.92$, and in this study $\alpha=.86$.

Social Comparison Orientation. A modified version of the Iowa-Netherlands Comparison Orientation Measure (INCOM) by Gibbons and Buunk (1999) was used to measure the tendency of participants to engage in Social Comparison. The INCOM is an 11-item Likert scale that ranges from “agree strongly” to “disagree strongly” (Gibbons & Buunk, 1999). The measure was modified to measure Social Comparison on Instagram, as was done by Feinstein et al. (2013)(for Facebook) and Stapleton et al. (2017)(for Instagram). This modification took the form of changing the measures from “I am not the type of person that compares myself to others” to “I am not the type of person that compare myself with others on Instagram” (“Jeg er ikke den typen menneske som sammenligner meg med andre på Instagram”). The INCOM measure has shown internal consistencies (α) ranging from .78 to .84 on a 3-4 week test-retest reliability, and significant convergent and divergent validity across many measures (Feinstein et al., 2013). The internal consistency in this study was $\alpha = 0.82$. In this study, the first six items in the measure were included, in line with the recommendations by the authors on the measure (Gibbons & Buunk, 1999). All items were positively worded, except one (the example used over), which was reversed before making the sum scores. The sum scores give a score on Social Comparison Orientation (SCO).

Emotional responses. Emotional responses to Instagram use was measured using 12 items. The questions are based on discussions and experiences in my personal and academic life. The introduction to the questions was, “how do the following situations affect your mood. A negative effect might be sadness or envy, and a positive effect can be happiness or motivation.” (“Hvordan påvirker disse ulike situasjonene humøret ditt på en generell basis? Positiv effekt kan for eksempel være glede eller motivasjon. Negativ effekt kan for eksempel være tristhet eller sjalusi.”), on a Likert scale from “only positive” to “only negative”. This means a high score (4-5) indicated a more negative affect, and a low value (1-2) indicated a positive effect, a score around 3 indicates no change. Questions about different situations that I believed could activate feelings in the individual were asked. Questions were, for instance, that someone has posted a picture of them, right after they have posted, getting comments, considering posting a picture or that someone else has posted a nice picture, an idyllic trip, and them getting something they have wanted.

On the 12 items measuring Emotional responses to Instagram EFA using maximum likelihood modeling, varimax rotation was used. Varimax rotation was used based on that the correlations between the factors were below .40 (Field, 2013). The KMO was .760, which is good (Field, 2013), and Bartlett’s test was significant ($p < .000$). Four factors were extracted with eigenvalues above Kaiser’s criterion, but by using parallel analysis and scree plot, there could also be 2-3 factors. When looking at items included, it was clear that the logical number of factors was two, and that three items should be excluded. The factors extracted explained 43.0% of the variance in the measure. The items included in each factor indicate that Factor 1 represents Envy and Factor 2 represents awaiting and getting feedback, for instance, when they have posted a picture or gotten a comment. Envy is defined as an uncomfortable or painful mix of emotions, usually characterized by feelings of inferiority, hostility, and resentment created by comparison to other people or groups that have something we want (Meier & Schäfer, 2018). Therefore, this factor was named Envy, based that the items in this factor fit well with this definition. Factor 1 had high reliability with a Chronbach $\alpha = .768$ and Factor 2 had a Chronbach $\alpha = .661$.

Table 5

Descriptive statistics Emotional Responses

Variable	<i>M</i>	<i>SD</i>	α
Envy	2.574	.320	.768
Awaiting Feedback	2.261	.485	.661

Behavioral responses. Behavioral responses to Instagram use was measured by using 12 questions. This measure is inspired by the study by Boley et al. (2018), they investigated the role of social return when deciding where to go on vacation and “experiences from my life”. The results showed that social return was an important factor in selecting a vacation destination (Boley et al., 2018). Therefore, this measure includes a question about choosing a vacation, but also choosing restaurants, staging pictures, deleting unpopular pictures, editing pictures, manipulating their appearance, buying something because it would look good on Instagram, and only uploading pictures where they look good.

For the 12 items in the behavioral response measure, EFA with maximum likelihood modeling with direct oblimin rotation was conducted. The Kaiser-Mayer-Okin (KMO) was .891, which is very good (Field, 2013), and Bartlett’s test was significant ($p < .000$). There were extracted three factors based on eigenvalues (>1), supported by the scree plot and parallel analysis. The factors extracted explained 61.6% of the variance in the measure. The items included in each factor indicates that Factor 1 represents only posting the best and maintain this elevated presentation of themselves. Factor 2 represents spending money or letting picture opportunities affect their behavior. Factor 3 represents using deceptive methods to keep the illusion of a better life. All factors had high reliability with a Cronbach $\alpha > .703$.

Table 6

Descriptive statistics Behavioral Responses

Variable	<i>M</i>	<i>SD</i>	α
Enhanced Presentation	2.822	.494	.795
Money and time	1.420	.015	.787
Deceptive Presentation	1.642	.168	.703

Representativity. Four items were used to measure Instagram’s representativity. First, participants rated on a Likert scale from 1 “strongly agree” to 5 “strongly disagree” about

how representative of what they post on Instagram is for their everyday life and appearance. Then they were asked about how well Instagram represents other people's everyday life and appearance. Then there was made a variable that measures the Mismatch between these two types of representability. Therefore, the variable shows 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. As seen in Table 7, people seem to believe they are more authentic online compared to others.

Table 7

Descriptive statistics Representativity

Variable	<i>M</i>	<i>SD</i>	α
Life	.5367	1.10626	.621
Appearance	.6784	1.19835	.629

Analysis

For all analyses, SPSS 20, JASP, and Stata 16 for Macintosh was used. First, mean scores for all standardized measures were calculated; this includes personality, Self-Esteem, Life Satisfaction, Shyness, Emotional Investment, and Social Comparison. They were all made according to instructions by the researchers that made the measures. See "measures and variables". Exploratory factor analysis (EFA)(maximum likelihood) was conducted for all self-made measures for this study; this includes Intentions for using Instagram, Types of activity on Instagram, Emotional responses, and behavioral responses to Instagram use. EFA was used with the intent to identify the structure of these latent variables (Field, 2013), by using SPSS 20. Factors were extracted based on eigenvalues above Kaiser's criterion of 1. Factor extraction evaluation was based on the scree plot and parallel analysis (using JASP). Tables with factor loadings on all EFA can be found in the appendix.

There was conducted a correlation analysis between all factors to get familiar with the data, see Table 8. Secondly, hierarchical multiple regression analyses on all five dependent variables, behavioral responses (Enhancement, money and time and deceptive), and emotional responses (Envy and Feedback) were conducted. In these regressions, all independent variables were entered blockwise. Block one included Age and Gender; block 2 contained the five personality factors; block 3 included Self-Esteem, Life Satisfaction, and Shyness; block 4

Instagram use (Minutes, Followers, how often the participant checked Instagram, active and Passive Use, Intentions to self-present and observe and Representativity Mismatch both for life and appearance). Full tables for these analyses can be found in the appendix. In this results section, only the final model and factors with significant relationships with dependent variables are included.

Unless otherwise stated, the assumptions of regression analyses were not violated. All analyses were tested for multicollinearity (VIF), heteroscedasticity, linearity (Zpred* vs. Zresid*), normality (Histogram and P-P Plots), collinearity, and independent errors (Durbin-Watson) (Field, 2013). While there were small indications of multicollinearity, no individual VIF values were over 10, not tolerance values were over 0.2, and there were no correlations between variables over .600. The average VIF was between 1.000 and 3.000, which is slightly elevated, but still acceptable (Field, 2013).

Moderation analyses using Hayes Macro Process (version 3.4) for SPSS 20 (Hayes, 2012) were conducted. Moderations tested were based on theory and correlations (Field, 2013). The significant moderations are presented under either the behavioral or emotional response in question, except for active and Passive Use. Activity (passive and active) moderated Social Comparison and Emotional Investment similarly on multiple responses and are therefore presented together. The following variables were checked for potential moderations on Social Comparison and Emotional Investment: active and Passive Use, Minutes, Age, Gender, Self-Esteem, Life Satisfaction, Shyness, representativity of life, and looks. Moderation between Social Comparison and Emotional Investment were also investigated.

Behavioral response: Enhanced Presentation on Instagram

The significant variables explained 58.2% of the variance in Enhanced Presentation and are presented in Table 9. There were only small differences between the $R^2=.582$ and $R^2_{adj}=.548$, both being large values (Mehmetoglu & Jakobsen, 2017). The F_{change} was significant ($p=.004$) which means that model 4 is significantly better at predicting Enhanced Presentation compared to model 3. Durbin-Watson =1.775, which is relatively close to 2, so the assumption of independent errors is met. These results indicate that people are more likely to use the Enhanced Presentation if they are female, younger, emotionally invested in Instagram, high on Social Comparison, use Instagram actively, and score high on the personality trait Openness. According to Mehmetoglu and Jakobsen (2017) the standardized beta coefficients (β) are all of medium size, except Social Comparison which has a large effect on Enhanced Presentation.

Table 9

Significant coefficients from the hierarchical multiple regression analyses for Enhanced Presentation

Variables	<i>b</i>	<i>SE b</i>	<i>p</i>	β
Gender	.303	.107	.005	.132
Age	-.014	.006	.021	-.117
Emotional Investment	.207	.101	.042	.138
Social Comparison	.365	.064	.000	.336
Openness	.111	.041	.008	.113
Activity: Self-centered	.212	.085	.013	.181

Note: R^2 = Step 1; .212, Step 2; .526, Step 3; .542, Step 4; .582. $\text{adj}R^2$ = Step 1; .206, Step 2; .514, Step 3; .522, Step 4; .548. ΔR^2 = Step 1; .212 ($p < .000$), Step 2; .314 ($p < .000$), Step 3; .016 ($p = .094$), Step 4; .040 ($p < .004$).

Moderations. The effect of Social Comparison on Enhanced Presentation was moderated by Minutes spent on Instagram ($p < .001$) (Table 10) and Emotional Investment ($p < .001$) (Table 11). Hayes Process macro operates with standardized values and standard deviations (SD). When Minutes were low (1SD below the mean = -38.99), there was a significant positive relationship between Enhanced Presentation and Social Comparison, $b = .759$, $t = 10.564$, $p < .001$. When Minutes were at the mean (mean=0), there was a significant positive relationship between Enhanced Presentation and Social Comparison, $b = .631$, $t = 12.583$, $p < .001$. When Minutes were high (1SD above mean= 38.99), there was a significant positive relationship between Enhanced Presentation and Social Comparison, $b = .503$, $t = 6.842$, $p < .001$. Figure 1 shows these values in a graph. This indicated that the number of Minutes someone spends on Instagram each day matters more in regards to Enhanced Presentation if they score low on Social Comparison, compared to if they score high on Social Comparison.

Table 10

The Moderating Effect of Minutes on Social Comparison and Enhanced Presentation

	<i>b</i>	<i>SE b</i>	<i>t</i>	<i>p</i>
Constant	2.845	.048	59.963	.000
Social Comparison	.631	.050	12.583	.000
Minutes	.004	.001	3.457	.006
Social Comparison*Minutes	-.003	.001	-2.423	.016

Note. $R^2=.65778$, $\Delta R^2=.0117$

When Emotional Investment was low (1SD below the mean = -0.68), there was a significant positive relationship between Enhanced Presentation and Social Comparison, $b=.576$, $t=7.863$, $p<.001$. When Emotional Investment was at the mean (mean=0), there was a significant positive relationship between Enhanced Presentation and Social Comparison, $b=.479$, $t=9.113$, $p<.001$. When Emotional Investment was high (1SD above mean= 0.68), there was a significant positive relationship between Enhanced Presentation and Social Comparison, $b=.383$, $t=5.672$, $p<.001$. Figure 2 shows these values in a graph. This results indicated that Emotional Investment matters more regarding Enhanced Presentation when someone scores low on Social Comparison, compared to if they score high on Social Comparison.

Table 11

The Moderating Effect of Emotional Investment on Social Comparison and Enhanced Presentation

	<i>b</i>	<i>SE b</i>	<i>t</i>	<i>p</i>
Constant	2.873	.048	59.867	.000
Social Comparison	.479	.053	9.113	.000
Emotional Investment	.479	.074	6.492	.000
Social Comparison* Emotional Investment	-.141	.069	-2.052	.041

Note. $R^2=.6934$, $\Delta R^2=.0070$

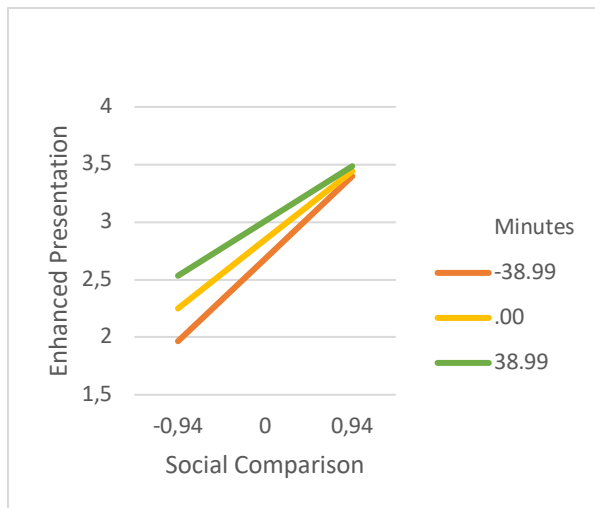


Figure 1

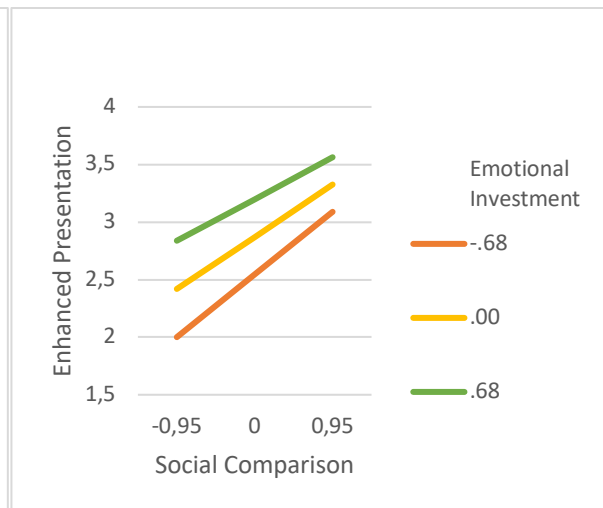


Figure 2

Behavioral response: Time and Money

Model 4 (all variables) explained 32.1% of the variance in spending Time and Money. There was a small difference between the $R^2=.321$ and $R^2_{adj}=.266$, which is medium to large values (Mehmetoglu & Jakobsen, 2017). The F_{change} was significant ($p=.014$), which means that model 4 is significantly better at predicting Enhanced Presentation compared to model 3. Durbin-Watson =1.928. The significant coefficients in model 4 can be found in Table 12. These findings indicated that if someone scores higher on Emotional Investment, Social Comparison, and have more Followers, they are more likely to spend money and time on materialistic things to make content for Instagram. Standardized beta coefficients (β) show that Social Comparison and Followers both have medium effects on Time and Money, while Emotional Investment has a large effect (Mehmetoglu & Jakobsen, 2017).

Table 12

Significant coefficients from hierarchical multiple regression analyses for spending Time and Money

Variables	<i>b</i>	<i>SE b</i>	<i>p</i>	β
Emotional Investment	.229	.076	.003	.258
Social Comparison	.104	.049	.034	.161
Followers	.110	.047	.021	.159

Note: R^2 = Step 1; .064, Step 2; .259, Step 3; .266, Step 4; .321. $adjR^2$ = Step 1; .058, Step 2; .241, Step 3; .233, Step 4; .266. ΔR^2 = Step 1; .064 ($p<.000$), Step 2; .185 ($p<.000$), Step 3; .006 ($p=.804$), Step 4; .055 ($p<.014$).

Moderations. The effect of Emotional Investment on Time and Money was moderated by Minutes ($p<.001$) (Table 13) and Gender ($p<.001$) (Table 14). In addition, Emotional Investment ($p<.001$) (Table 15) moderated the relationship between Social Comparison had on Time and Money.

The effect of Emotional Investment on Time and Money was moderated by Minutes spent on Instagram ($p<.001$). When Minutes were low (1SD below the mean = -38.99), there was a significant positive relationship between Time and Money and Emotional Investment, $b=.288$, $t=4.649$, $p<.001$. When Minutes were at the mean (mean=0), there was a significant positive relationship between Emotional Investment, $b=.405$, $t=7.366$, $p<.001$. When Minutes were high (1SD above mean= 38.99), there was a significant positive relationship between Emotional Investment, $b=.522$, $t=6.216$, $p<.001$. Figure 3 shows these values in a graph. This indicated that if an individual scores high on Emotional Investment and spends more Minutes on Instagram daily, it made him/her more likely to spend Time and Money on Instagram. This shows the opposite effect when the person scores low on Emotional Investment. If someone scores averagely in Emotional Investment, the Minutes spent on Instagram do not matter.

Table 13

The Moderating Effect of Minutes on Emotional Investment and Time and Money

	<i>b</i>	<i>SE b</i>	<i>t</i>	<i>p</i>
Constant	1.385	.036	38.954	.000
Emotional Investment	.405	.055	7.366	.000
Minutes	.000	.001	.060	.953
Emotional Investment*Minutes	.030	.001	2.383	.018

Note. $R^2=.4583$, $\Delta R^2=.0157$

The effect of Emotional Investment on Time and Money was also moderated by Gender ($p<.001$). For men (value 0), there was a significant positive relationship between Time and Money and Emotional Investment, $b=.228$, $t=2.619$, $p=.009$. For women (value 1), there was a significant positive relationship between Time and Money and Emotional Investment, $b=.431$, $t=7.930$, $p<.001$. Figure 4 shows these values in a graph. These findings indicate that women are more likely to spend Time and Money when they score high on

Emotional Investment, compared to men. When Emotional Investment is low, the Gender effect is low.

Table 14

The Moderating Effect of Gender on Emotional Investment and Time and Money

	<i>b</i>	<i>SE b</i>	<i>t</i>	<i>p</i>
Constant	1.385	.036	38.954	.000
Emotional Investment	.405	.055	7.366	.000
Gender	.000	.001	.060	.953
Emotional Investment*Gender	.030	.001	2.383	.019

Note. $R^2=.4583$, $\Delta R^2=.0157$

When Emotional Investment was low (1SD below the mean = -0.68), there was a non-significant positive relationship between Enhanced Presentation and Social Comparison, $b=.088$, $t=1.692$, $p=.092$. When Emotional Investment was at the mean (mean=0), there was a significant positive relationship between Enhanced Presentation and Social Comparison, $b=.157$, $t=4.208$, $p<.001$. When Emotional Investment was high (1SD above mean= 0.68), there was a significant positive relationship between Enhanced Presentation and Social Comparison, $b=.226$, $t=4.717$, $p<.001$. Figure 5 shows these values in a graph. These results indicate that Emotional Investment matters less when someone scores low on Social Comparison than if they score high on Social Comparison.

Table 15

The Moderating Effect of Emotional Investment on Social Comparison and Time and Money

	<i>b</i>	<i>SE b</i>	<i>t</i>	<i>p</i>
Constant	1.389	.034	40.895	.000
Social Comparison	.157	.037	4.208	.000
Emotional Investment	.289	.052	5.516	.000
Social Comparison*	.101	.049	2.080	.038
Emotional Investment				

Note. $R^2=.5036$, $\Delta R^2=.0104$

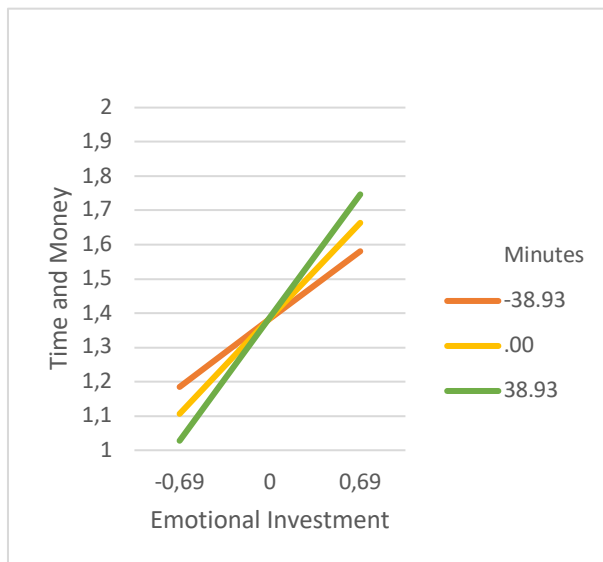


Figure 3

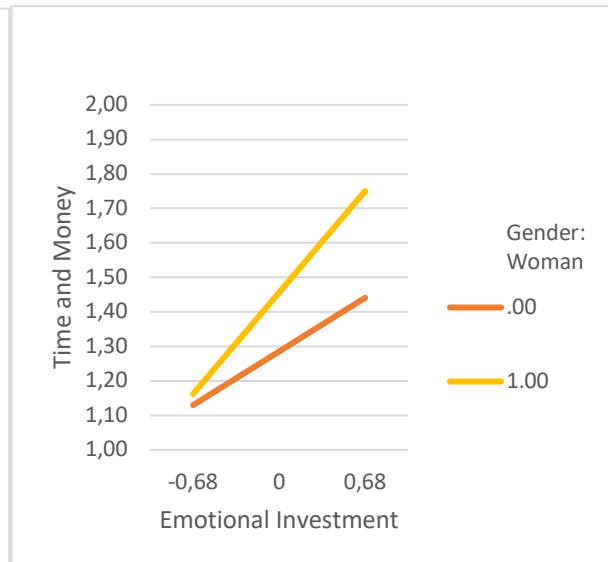


Figure 4

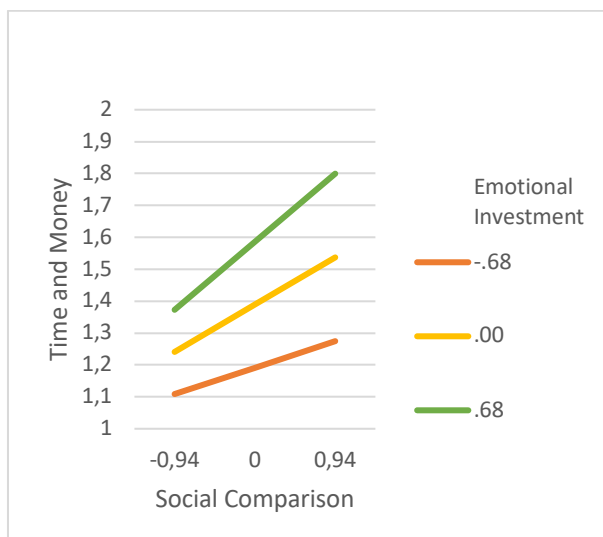


Figure 5

Behavioral response: Deceptive Presentation on Instagram

Model 4 (all variables) explained 42.2% of the variance in Deceptive Presentation. There was little difference between the $R^2=.422$ and $R^2_{adj}=.376$. The F_{change} was significant ($p<.001$), which means that model 4 is significantly better at predicting Enhanced Presentation compared to model 3. Durbin-Watson =2.105. The significant coefficients in model 4 are in Table 16. The standardized beta coefficients (β) indicate that Representativity Mismatch of their life on Instagram has a small effect. In contrast, Life Satisfaction and self-centered activity has a medium effect, and Social Comparison has a large effect (Mehmetoglu & Jakobsen, 2017). This indicates that an individual is more likely to use Deceptive

Presentation if they are less satisfied with their life, higher on Social Comparison, use Instagram actively, and believe others are more authentic than them on Instagram.

Table 16

Significant coefficients from hierarchical multiple regression analyses for Deceptive Presentation

Variables	<i>b</i>	<i>SE b</i>	<i>p</i>	β
Life Satisfaction	-.076	.034	.029	-.134
Social Comparison	.304	.050	.000	.427
Activity: Self-centered	.153	.066	.020	.200
Representativity Mismatch: life	-.095	.036	.008	.008

Note: R^2 = Step 1; .069, Step 2; .336, Step 3; .350, Step 4; .422. $\text{adj}R^2$ = Step 1; .062, Step 2; .319, Step 3; .321, Step 4; .376. ΔR^2 = Step 1; .069 ($p < .000$), Step 2; .267 ($p < .000$), Step 3; .014 ($p = .327$), Step 4; .055 ($p < .000$).

Emotional response: Envy

Model 4 (all variables) explained only 20.0% of the variance in Envy. There was a difference between the $R^2 = .200$ and $R^2_{\text{adj}} = .136$. The F_{change} was significant ($p = .036$). Durbin-Watson = 1.902. The significant coefficients in model 4 are in Table 17. The standardized beta coefficients (β) indicate that Emotional Investment has a medium effect, and Social Comparison has a large effect (Mehmetoglu & Jakobsen, 2017). This indicates that someone is more negatively affected if they score high on Social Comparison and if they score lower on Emotional Investment.

Table 17

Significant coefficients from hierarchical multiple regression analyses for Envy

Variables	<i>b</i>	<i>SE b</i>	<i>p</i>	β
Social Comparison	.266	.052	.000	.415
Emotional Investment	-.169	.082	.041	-.192

Note: R^2 = Step 1; .003, Step 2; .120, Step 3; .144, Step 4; .200. $\text{adj}R^2$ = Step 1; -.004, Step 2; .098, Step 3; .106, Step 4; .136. ΔR^2 = Step 1; .003 ($p = .620$), Step 2; .117 ($p < .000$), Step 3; .024 ($p = .189$), Step 4; .056 ($p = .036$).

Moderations. Age significantly moderated the relationship between Envy and Social Comparison ($p < .001$). When Age was low (1SD below the mean = -8.46), there was a significant positive relationship between Envy and Social Comparison, $b = .226$, $t = 4.404$, $p < .001$. When Age was at the mean (mean = 0), there was a significant positive relationship between Envy and Social Comparison, $b = .138$, $t = 3.612$, $p < .004$. When Age was high (1SD above mean = 9.08), there was a non-significant positive relationship between Envy and Social Comparison, $b = .044$, $t = .694$, $p = .489$. The *SD* values are different for -1SD and +1SD because -1SD is below the youngest participant in the data set. Figure 6 shows these values in a graph. This indicates that younger participants were more envious when scoring high on Social Comparison, compared to the older participants. Age had a small effect when Social Comparison was low.

Table 18

The Moderating Effect of Age on Social Comparison and Envy

	<i>b</i>	<i>SE b</i>	<i>t</i>	<i>p</i>
Constant	2.547	.036	70.760	.000
Social Comparison	.138	.038	3.612	.000
Age	-.007	.005	-1.507	.133
Social Comparison*Age	-.010	.005	-2.150	.032

Note. $R^2 = .2652$, $\Delta R^2 = .0140$

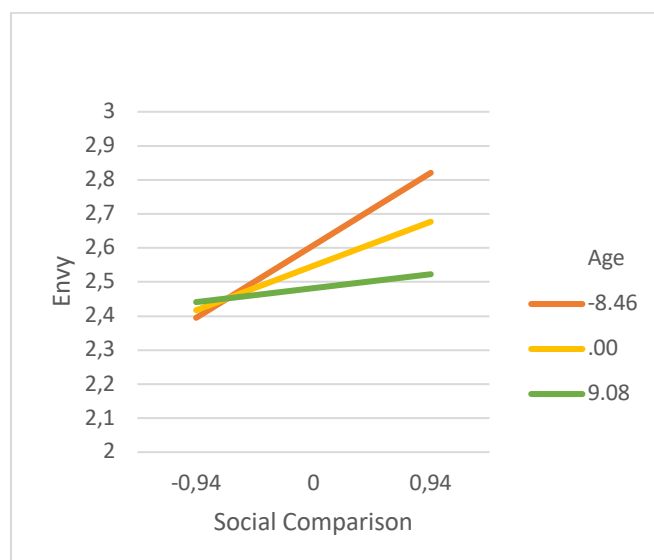


Figure 6

Emotional response: Feedback

Model 4 (all variables) explained 28.1% of the variance in Feedback. There was a slight difference between the $R^2=.281$ and $R^2_{adj}=.224$. The F_{change} was significant ($p<.001$) and the Durbin-Watson =2.074. The significant coefficients in model 4 are presented in Table 19. Standardized beta coefficients (β) shows that Emotional Investment and Intentions to self-presentation both have medium effects on Time and Money, while self-centered activity has a large effect (Mehmetoglu & Jakobsen, 2017). These results might indicate that people are more negatively affected by Feedback if they score low on Social Comparison and Emotional Investment but score higher on Active Use.

Table 19

Significant coefficients from hierarchical multiple regression analyses for Feedback

Variables	<i>b</i>	<i>SE b</i>	<i>p</i>	β
Emotional Investment	-.140	.067	.038	-.185
Intentions: Self-presentation	-.191	.056	.045	-.134
Activity: Self-centered	.061	.054	.001	-.323

Note: $R^2 =$ Step 1; .010, Step 2; .168, Step 3; .180, Step 4; .281. $adjR^2 =$ Step 1; .003, Step 2; .147, Step 3; .144, Step 4; .224. $\Delta R^2 =$ Step 1; .010 ($p=.245$), Step 2; .158 ($p<.000$), Step 3; .012 ($p=.550$), Step 4; .101 ($p<.000$).

Moderations: Activity

For many dependent variables, Active and Passive Use was a significant moderator. The effect of activity had similar patterns in all analyses and are therefore presented collectively here. Active and Passive Use moderated the relationship between Deceptive Presentation and Social Comparison, time/money and Social Comparison, time/money, and Emotional Investment. The moderating effect of Active Users has a moderating effect (b) between .131 to .232. Passive Use has a moderating effect (b) of between .114 to .166. These results indicate that the more active someone is, the stronger the effect of either Social Comparison or Emotional Investment on the behavioral responses (deceptive and time/money) will be, and that Active Use has a slightly stronger effect than Passive Use. Figure 7 displays the effect of Active Use on Deceptive Presentation and Social Comparison. The method used is Hayes Process; therefore, the values are standardized. The different values on activity and Social Comparison are -1SD, the standardized mean ($M=0$), and +1SD. For all graphs and tables, see the appendix.

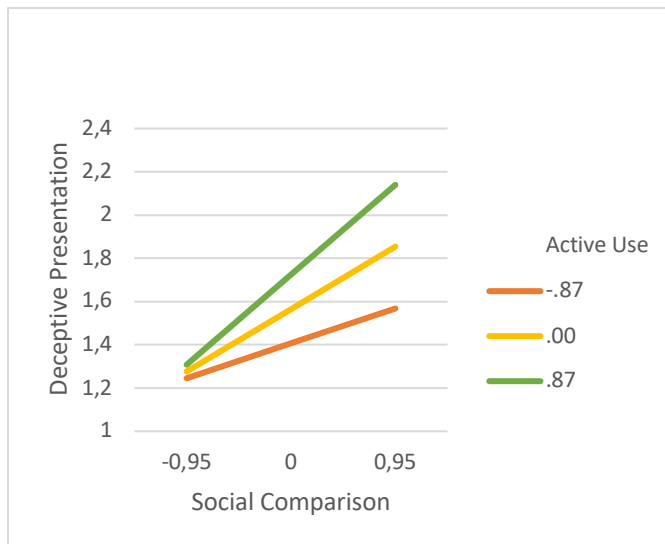


Figure 7

Structural Equation Modeling (SEM): a path analysis

To confirm and visualize the models found through the regression analyses, a structural equation model (SEM) was conducted. The initial model was created based on the results from the regressions and theory on the field, and then fitted to find the best SEM model. The sum scores for all variables are used in order to avoid having too many estimates in relation to sample size; therefore, there is no measurement model to report or interpret. The fact that confirmatory factor analysis was not used can be a limitation for the model.

See figure 8 for the final model. Two missing values were excluded, $N=313$. Log-likelihood = -3689.77. For assessing the fit of the SEM model, multiple measures were used. In this model, the RMSEA (Root Mean Square Error of Approximation) = 0.014, which is acceptable (Mehmetoglu & Jakobsen, 2017). The comparative fit index (CFI) showed a good fit with a value of 0.999. When looking at the size of residuals, the SRMR (standardized root mean squared residuals) = 0.032, which is below the recommended limit of $<.05$. All these measures indicated that the model had a good fit. This good fit is also supported by the covariance of the residuals, all of which were close to 0.0. The structure model is summarized in Table 20.

The R^2 varies a lot between the different endogenous values, and the overall R^2 (Coefficient of Determination) is .713. Emotional Investment $R^2=.537$, Social Comparison $R^2=.446$, Enhanced Presentation $R^2=.514$, Money and Time $R^2=.274$, Deceptive Presentation $R^2=.372$, Feedback $R^2=.178$, and Envy $R^2=.124$. The total variance explained is medium for Envy, Feedback, and Money and Time, while it is large for Emotional Investment, Social Comparison, Enhanced Presentation, and Deceptive Presentation (Field, 2013).

Table 20

Coefficients for the endogenous variables in the structure model

		<i>b</i>	<i>SE b</i>	<i>p</i>	β
Enhanced	Social Comparison	.369	.054	.000	.344
Presentation	Emotional Investment	.333	.078	.000	.224
	Activity: Active	.317	.065	.000	.271
	Constant	.336	.156	.032	.330
Time and Money	Social Comparison	.100	.034	.010	.157
	Emotional Investment	.200	.056	.000	.226
	Activity: Active	.156	.047	.001	.225
	Constant	.303	.113	.007	.502
Deceptive Presentation	Social Comparison	.268	.041	.000	.370
	Life Satisfaction	-.035	.024	.139	-.062
	Activity: Active	.138	.048	.004	.176
	Activity: Passive	.122	.041	.003	.157
	Constant	.439	.164	.007	.642
Social Comparison	Self-Esteem	-.361	.054	.000	-.279
	Activity: Active	.468	.057	.000	.430
	Activity: Passive	.215	.056	.000	.201
	Constant	1.873	.262	.000	2.557
Emotional Investment	Activity: Active	.323	.038	.000	.411
	Activity: Passive	.316	.037	.000	.410
	Constant	.798	.100	.000	1.169
Envy	Social Comparison	.283	.042	.000	.429
	Emotional Investment	-.154	.065	.018	-.172
	Activity: Active	-.143	.052	.006	-.204
	Constant	2.635	.128	.000	4.315
Feedback	Emotional Investment	-.100	.051	.051	-.131
	Activity: Active	-.192	.040	.000	-.323
	Constant	2.976	.104	.000	5.743

Note. *RMSEA* = 0.014, *CFI* = 0.999, *SRMR* = 0.032, *CD* = .713.

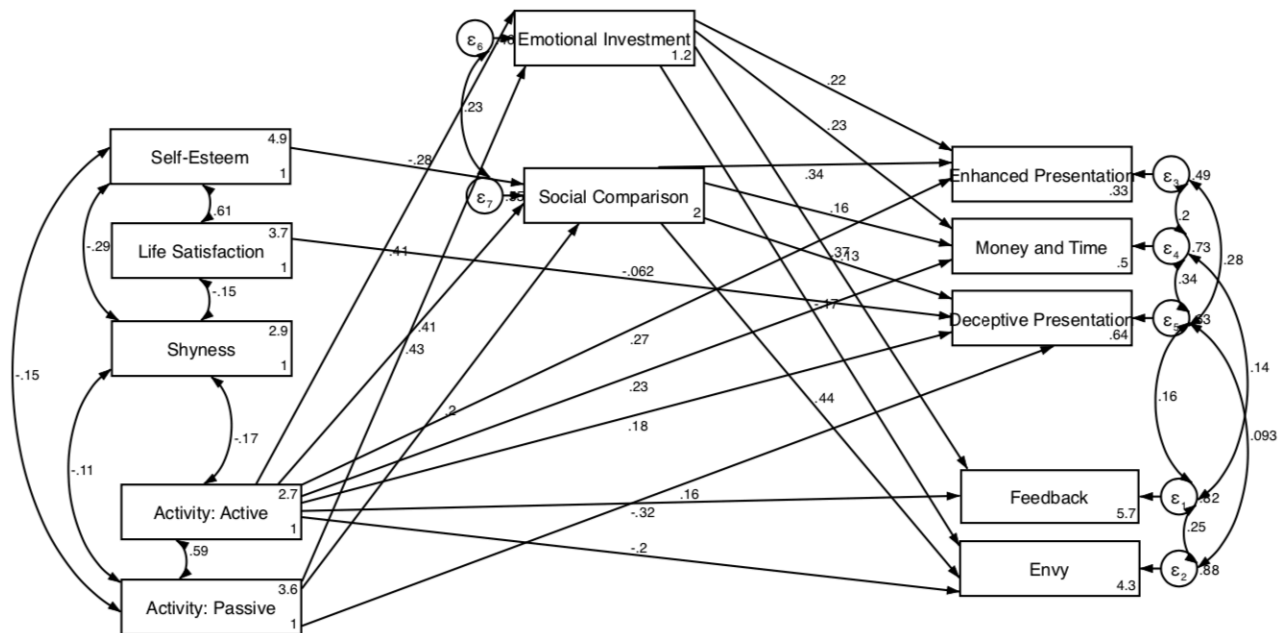


Figure 8: The SEM path model with standardized coefficients.

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 ($p < .05$) 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

The discussion section of this study is divided into six main parts. The first five parts will be the results of all behavioral and emotional responses. The focus in these sections will be the meaning of the results and how these fit with other findings. Then there will be a general discussion where the findings of all variables will be looked at in relation to previous research. There will also be a discussion on the limitations and implications of these findings.

Behavioral response: Enhanced Presentation

The mean for Enhanced Presentation shows that people, on average, present themselves in an enhanced way just under half the time ($M = 2.822$, $SD = .494$). Correlation analysis showed that Enhanced Presentation significantly correlated with Gender, Age, Neuroticism, Self-Esteem, Minutes, Checking, Followers, both types of Intentions (self-presenting and observing), both types of Use (active and use), Emotional Investment, Social Comparison, Feedback, Envy, Time and Money, and Deceptive Presentation. The most robust correlations (over .40) are with Followers, Social Comparison, Emotional Investment, active and Passive Use, Time and Money, and Deceptive Presentation.

The results from the hierarchical regression analysis indicated that people are more likely to use the Enhanced Presentation if they are female ($\beta = .123$), younger ($\beta = -.117$), Emotionally Invested in Instagram ($\beta = .138$), score high on Social Comparison ($\beta = .336$), use Instagram Actively ($\beta = .181$), and score high on the personality trait Openness ($\beta = .113$). Only Social Comparison had a large effect on Enhanced Presentation. The effect of Social Comparison was found to be moderated by Minutes spent on the app and by Emotional Investment. The fact that Minutes moderated the relationship between SCO and Enhanced Presentation indicates that the number of Minutes someone spends on Instagram each day matter more if someone scores low on Social Comparison, compared to if they score high on Social Comparison. It is important to remember that there is no statistical basis for the direction of the moderation analysis; therefore, their results can also be interpreted as SCO moderates the relationship between Minutes and Enhanced Presentation. When it comes to Emotional Investment as a moderator, this indicates that if someone scores low on Emotional Investment, the effect of SCO is lower, compared to if they score higher on Emotional Investment. It can be interpreted that scoring higher on both SCO and Emotional Investment makes someone more likely to use the Enhanced Presentation.

The SEM analysis supports the findings from the regression analysis. The SEM analysis also shows that Emotional Investment ($\beta = .224$) and Social Comparison ($\beta = .344$) were essential variables. Furthermore, activity ($\beta = .271$) is also found to be related to Enhanced Presentation. Age, Gender, and personality factors were not included in the SEM analysis. It was also found that Self-Esteem had an indirect effect on Enhanced Presentation, via Social Comparison ($b = -.133$).

Emotional Investment, Social Comparison, and Active Use seem to be the essential variables for Enhanced Presentation. All of them give higher scores on Enhanced Presentation if they are scoring higher on Emotional Investment, SCO, and Active Use. Also, Gender, Age, and Self-Esteem show exciting findings. The younger females are the ones more likely to use Enhanced Presentation. Low Self-Esteem is related to higher Enhanced Presentation through higher Social Comparison.

Buxmann et al. (2015) found that self-enhancement can be a potential coping strategy as a response to Social Comparison. This self-enhancement is in line with the findings in this study that indicate a connection between scoring higher on SCO and using Enhanced Presentation on Instagram. This can indicate a circular relationship; people upload attractive pictures, then others also do the same, and so on.

Lowe-Calverley et al. (2019) concluded that people with high Investment in Instagram might be more vulnerable to the psychological effects of Instagram use. This study found that people who score high on Emotional Investment were more likely to use Enhanced Presentation. Lowe-Calverley et al. (2019) also hypothesized, but did not test, that SCO might affect the relationship between Investment and use. There was found support for this as the relationship between Enhanced Presentation and SCO was moderated by Investment. These results support that Emotional Investment in Instagram heightens the possibility that someone is affected by their Instagram use. On the other hand, the result does not indicate that there was a significant relationship between Self-Esteem and Emotional Investment, as has previously been found by Lowe-Calverley et al. (2019).

Regarding Gender, it is a possibility that the nature of the questions has affected the results. Men are found to be more focused on career and success when comparing themselves to others, while females were more focused on physical attractiveness (Haferkamp & Krämer, 2011). This finding is in line with previous research on different valued traits for the different sexes from an evolutionary perspective (Buss, Schmitt, & Kintsch, 1993). Questions were representing both appearance, success, and materialistic things in the questionnaire; therefore, the sex difference might also be a real difference. The individual items were not analyzed in relation to Gender, so the sex difference in the type of Enhanced Presentation can be used as a possible research angle in the future.

When it comes to Age, my belief is that questions were not broad enough. After having conversations with older people, I realized there should have been included questions about material things related to, e.g., interior, family life, and children. This may not be as relevant for the younger Age group, but very relevant for the older participants. Therefore, the reason the results show that younger participants are more likely to use Enhanced Presentation might be because the questions did not resonate with the older participants. On the other hand, the question was not specific and included “materialistic things” (“materialistiske ting”), where the participants themselves could interpret it to be relevant to their life. Most of the research on Instagram is focused on teenagers and young adults, which results in the fact that we do not know much about how adults and older people are affected by social media. This is natural since the most active users of SNS are young. However, we know that 80% of Norwegians between the ages of 16 and 79 use social media, and the middle-aged users (45-64 years) are the fastest-growing group of users with almost a 20% increase in three years (Røgeberg, 2018).

Behavioral response: Time and Money

The mean response for Time and Money shows that people, on average, spend Time and Money to get good content for Instagram between “never” and “rarely” ($M=1.420$, $SD=.015$). Correlation analysis showed that Time and Money significantly correlated with Gender, Age, Extroversion, Neuroticism, Self-Esteem, Minutes, Checking, Followers, both types of Intentions (self-presenting and observing), both types of Use (active and use), Emotional Investment, Social Comparison, Enhanced Presentation, and Deceptive Presentation. The most robust correlations (above .40) were with Active Use, Emotional Investment, Social Comparison, Enhanced Presentation, and Deceptive Presentation.

The hierarchical regression analysis indicated that Emotional Investment ($\beta= .258$), SCO ($\beta= .161$), and Followers ($\beta= .159$) were the most critical variables, where Emotional Investment had the largest effect on Time and Money (Mehmetoglu & Jakobsen, 2017). For this dependent variable, there were many moderations; Minutes and Gender moderated the relationship between Emotional Investment and Time and Money. Also, Active Use, Passive Use, and Emotional Investment moderated the relationship between SCO and Time and Money. The SEM analysis showed some similar results as the regression; SCO ($\beta= .157$), Emotional Investment ($\beta= .226$), and Active Use ($\beta= .225$). In the SEM analysis, Active Use replaced Followers, and Followers were not included in the SEM analysis. It was also found that Self-Esteem had an indirect effect on Time and Money via SCO ($b=-.036$)

These results combined indicated that SCO, Emotional Investment, Active Use, and Followers are the essential variables in relation to spending Time and Money to get content to post on Instagram. Nevertheless, the indirect effect of Self-Esteem and the moderating effects of Gender, Minutes, active and Passive Use, and Emotional Investment are interesting.

The results from Boley et al. (2018) indicated that social return is a fundamental factor in the selection of a vacation destination and that people change behavior in order to get the social reward in the form of likes and comments. Therefore, people may be affected by social return in other aspects of their lives e.g., other shorter trips, the clothes purchased and used, the things brought with them, where and what they ate, hobbies, and other activities. These are the types of questions asked to measure the Time and Money variable. On the other hand, the mean did not indicate that spending Time and Money for content on Instagram is a normal thing for people to do, and participants that did this were not asked the reasons why.

There can be multiple explanations for this low mean. One possible explanation is that people do these things, but not very often. For instance, the question about Instagram

affecting people's decisions when choosing where to go on vacation can be affected by the fact that people do not go on a vacation that often, and therefore answer "rarely". Another explanation can be that the effect is unconscious. The reason someone chooses a restaurant with beautiful food might be because they just like it better or that they have been exposed to it online, which makes it more recent in their memory when deciding where to eat, not because they primarily think about posting it on Instagram. The low mean on this variable might also be affected by social desirability. This is not necessarily something people want to admit that they do at all, therefore underreport these behaviors. On the other hand, going to a specific restaurant because they know the food is pretty might not be inherently negative. If they do not like this type of food and only go for the picture, that would then be both a waste of time and money. However, if they enjoy the food, does it matter?

On the other hand, Sherman et al. (2018) found tendencies for attitude change among emerging adults for dangerous behavior that got attention from peers online. They found that a picture with many likes portraying a behavior like underaged drinking changed the young adults' likelihood of liking the picture compared to a picture with fewer likes (Sherman et al., 2018). How people experience themselves and others, changing their behavior for Instagram depends on their view of the situation – as with everything else. Nonetheless, it makes for an interesting research question, not only how much and when people do it, but how they feel doing it and how they feel when others do it.

The fact that SCO and Emotional Investment affect the tendency to spend Time and Money is logical. Emotional Investment was the variable with the most substantial coefficient (both in the regression analysis and the path analysis). Someone who scores high on Emotional Investment in Instagram is logically more likely to spend Time and Money creating content for Instagram. On the other hand, SCO is more likely to affect this in the lines with self-enhancement as a coping strategy in response to Social Comparison (Buxmann et al., 2015).

Having many followers on Instagram is now a career; people all over the world have Instagram as their primary source of income. This can affect people in ways we are unaware of, as gaining Followers and likes can have a financial motive. How may the potential financial gain affect people's behavior online? Dumas et al. (2017) discuss in their research on normative and deceptive like-seeking behavior that the business and economic side of Instagram might affect this. Some may use deceptive like-seeking behaviors to promote their business, brand, or have been paid by a sponsor to post on Instagram. In such instances of deceptive behaviors, the intention is for either current or the hope for future financial gain, not

exclusively for popularity or validation (Dumas et al., 2017). This career aspect might be why followers are highlighted as an essential variable in the regression analysis. Lowe-Calverley et al. (2019) hypothesized that the reason Followers might matter is that the individual feels like it has many people “watching them”, and therefore the pressure on what to post might feel larger.

Behavioral response: Deceptive Presentation

The mean on Deceptive Presentation is low ($M = .1642$, $SD = .168$), similar to Time and Money, which also puts the average between “never” and “rarely”. The correlation analysis showed many significant correlations; Gender, Age, Neuroticism, Self-Esteem, Life Satisfaction, Minutes, Checking, Followers, both types of Intentions (self-presenting and observing), both types of use (active and use), Emotional Investment, Social Comparison, Envy, Enhanced Presentation, Time and Money, and Representativity Mismatch for life. The most robust correlations (above .40) are with Active Use, Passive Use, Emotional Investment, Social Comparison, Enhanced Presentation, and Time and Money.

The regression analysis found Life Satisfaction ($\beta = -.134$), SCO ($\beta = .427$), Active Use ($\beta = .200$), and Representativity Mismatch for life ($\beta = .008$) to be the essential variables. SCO has the most considerable effect on Deceptive Presentation (Mehmetoglu & Jakobsen, 2017). Active and Passive Use was also found to moderate the relationship between SCO and Deceptive Presentation. These moderations indicate that the more active someone is, the stronger the effect of Social Comparison on Deceptive Presentation is and that Active Use has a slightly stronger effect than Passive Use. The path analysis showed different results compared to the regression, where the significant variables were SCO ($\beta = .370$), Active Use ($\beta = .176$), and Passive Use ($\beta = .157$). Life Satisfaction and Representativity Mismatch for life have been replaced with Passive Use. Representativity Mismatch for life was not included in the path analysis. Also, here Self-Esteem had an indirect effect on Deceptive Presentation via SCO ($b = -.097$).

These results indicate that SCO, active and Passive Use, Representativity Mismatch, and Life Satisfaction are the most critical variables regarding Deceptive Presentation. However, Representativity Mismatch for life has much lower effects than the other variables.

Dumas et al. (2017) categorized deceptive behavior by, e.g., changing one’s appearance in pictures or buying likes and Followers (Dumas et al., 2017). In this study, a broader characterization is used; for instance, was questions about editing their appearance

and posting pictures that indicate a better lifestyle included. Dumas et al. (2017) also found that using deceptive methods could lead to negative adjustments and lower well-being. Other findings show that using social networking sites has a positive effect on Life Satisfaction (Buxmann et al., 2015). The results in the regression analysis in this study indicate that lower Life Satisfaction ($b = -.134$) is related to higher scores on Deceptive Presentation. This was supported by a significant correlation between the two variables ($r = -.18$). This relationship was, on the other hand, not found to be significant in the SEM analysis. Therefore the results regarding Life Satisfaction and Deceptive Presentation are inconclusive and require more research in the future. It might be that the Deceptive Presentation is a possible determinant of whether an individual gets a positive or negative effect on Life Satisfaction. Looking closer at well-being and Deceptive Presentation is also interesting.

Self-enhancement is also potentially important when it comes to Deceptive Presentation. SCO is found to be the variable with the highest standardized beta coefficient in both the regression and SEM analysis. This might point to the fact that people use deceptive methods, like editing their looks because they use upward Social Comparison when using Instagram. This might make them feel inadequate compared to people's Enhanced Presentation, with results in deceptive methods to compensate. This can also be related to the indirect effect of Self-Esteem on Deceptive Presentation via SCO, where lower Self-Esteem gives higher scores on Deceptive Presentation via SCO.

Using deceptive methods might lead to a feeling that the "fake" version of them is accepted and liked, and they feel that their real self is not adequate. This might lead to a vicious circle. Reinecke et al. (2014) supported this assumption by finding that being authentic online had positive effects on well-being and that those with high well-being were more likely to be authentic online. In the theory section, the question about if deceptive behavior is the cause or a symptom of low Self-Esteem was raised. On one side, someone with low Self-Esteem can feel the need to edit their appearance before being confident to post a picture. On the other side, it can be argued that someone that uses deceptive behavior might feel that their real self is not the one getting the likes and confirmation from their peers, and therefore has lower Self-Esteem. In this study, this was not tested directly, but the fact that Self-Esteem was found to have an indirect effect on Deceptive Presentation via SCO, means that a potential link could exist. This needs to be looked at closer in future research.

Deceptive Presentation is the only dependent variable where the Representativity Mismatch in life is a significant variable. The variable represents the Mismatch between how "authentic" someone is online and how authentic they think others are online. A positive

value indicated thoughts of being more authentic than others, and a negative value the opposite. The results from the hierarchical regression analysis show that the beta coefficient is $-.095$. A negative value in representativity indicates that the person believes others are more authentic than they are online. This coefficient, therefore, means that someone who thinks others are more authentic on Instagram than them is more likely to have a higher score of Deceptive Presentation. The standardized beta value, on the other hand, indicates that the effect of this variable is low, relative to the other variables ($b = .008$) (Mehmetoglu & Jakobsen, 2017).

It is also interesting to find that in contrast to Enhanced Presentation and Time and Money, Emotional Investment does not have a significant effect on Deceptive Presentation. This makes Deceptive Presentation the only behavioral and emotional response not effected by Emotional Investment.

Emotional response: Envy

The emotional response measures are interpreted differently than behavioral responses. The mean on Envy was between “mostly positive” and “neither positive nor negative” ($M = 2.574$, $SD = .320$). The correlation analysis showed that Envy significantly correlated with Extroversion, Neuroticism, Self-Esteem, Life Satisfaction, Deceptive Presentation, and Representativity Mismatch for life. None of the correlations were above $.40$.

The hierarchical regression analysis found that SCO ($\beta = .415$) and Emotional Investment ($\beta = -.192$) were the most important variables. The effect of Social Comparison was the only large effect found (Mehmetoglu & Jakobsen, 2017). These results indicate that Social Comparison gives a more negative effect (larger value = more negative), while Emotional Investment gives a more positive Envy effect (lower value = more positive). Age was found to moderate the relationship between SCO and Envy, where younger participants were more negatively envious when they scored high on Social Comparison, compared to the older participants. Age had a small effect when Social Comparison was low. The path analysis supported these findings; SCO ($\beta = .429$), Emotional Investment ($\beta = -.172$) and activity ($\beta = -.204$). The effect from both SCO and Emotional Investment was very similar, while activity had a similar effect to Emotional Investment, where more activity leads to a more positive affect. Also, the indirect effect of Self-Esteem on Envy, via SCO, was found ($b = -.103$).

The “sea of profiles” and readily available information about others is the perfect place for people to find others to compare themselves with (Haferkamp & Krämer, 2011).

Haferkamp and Krämer (2011) found that those exposed to more attractive profiles showed more negative emotions and were less satisfied with their own body compared with people exposed to unattractive users. It is also a consistent finding that exposure to the thin body ideal in media negatively affects women's body image and mood (Brown & Tiggemann, 2016). When comparing themselves to the ideal body, which for most women is unattainable, they end up with negative feelings and a worse body image (Brown & Tiggemann, 2016).

Meier and Schäfer (2018) found a link between SCO on Instagram and inspiration, which again is linked to higher well-being. The relationship between SCO and inspiration was found to be mediated by the type of envy activated: malicious Envy and benign Envy. If Social Comparison is activated by the latter rather than the first, people could be inspired by what they see on Instagram. More inspiration gave the participants a more positive affect (PANAS)(Meier & Schäfer, 2018). The results in the current study can be explained by either that people mostly activate benign Envy. However, if someone scores higher on SCO, they are more likely to activate malicious Envy and, therefore, a negative effect. The measure for Envy was self-made and did not concisely look at these types of envy, and this might be a source of bias. However, motivation was given as an example of a positive effect, so people could have had this in the back of their minds. We see that, on average, people are positively affected by the situations presented in the questionnaire about Instagram.

The indirect effect found in the SEM analysis indicated that Self-Esteem had an indirect effect on Envy, via SCO. People with high Self-Esteem are less likely to experience negative emotions after Social Comparison, both upwards and downwards (Haferkamp & Krämer, 2011). The result in the current study supports this as the indirect effect of Self-Esteem on Envy via SCO, and this shows that a lower score on Self-Esteem can lead to a lower score on Envy, which means a more negative effect.

Also, the findings in this study support previous findings that Social Comparison can have a negative emotional effect on the individual, but Age moderates this negative effect. The moderation analysis showed that the effect of Social Comparison on Envy was larger among younger participants, compared to older participants. It is important to remember that the mean age in this study was around 24 years, and younger in this context is around 16 years, and older is around 33 years. This is an area where future research can be more inclusive since results show a possible difference between age groups.

Previous findings in the field have results that show Emotional Investment as a negative influence on Self-Esteem, anxiety, stress, and depression (Woods and Scott (2016); Lowe-Calverley et al. (2019)). On the contrary, this study found indications that higher

Emotional Investment led to more positive effects on an individual's mood when it comes to Envy.

Yang (2016) hypothesized that different types of Instagram use could trigger Social Comparison in different ways. In this study, it was found that Active Use, similarly to Emotional Investment, made the user more positively affected by their use. A possible explanation might be that people who are invested in Instagram and actively use the platform, might be more familiar with the façade that can exist and, therefore, are not as negatively affected. Nevertheless, this needs to be investigated further in future research.

Emotional response: Feedback

Similarly to Envy, the Feedback variable has a mean between “mostly positive effects” and “neither a positive nor negative effect”, but closer to a mostly positive effect ($M=2.261$, $SD=.485$). Feedback has correlations with Extroversion, Shyness, Minutes, Checking, Followers, both types of Intentions (self-presenting and observing), both types of use (active and use), Social Comparison, Envy, Enhanced Presentation, and both types of Representativity Mismatch (life and appearance). Where the only correlations above .40 are with Active Use.

The regression analysis shows that Emotional Investment ($\beta = -.185$), Intentions to self-present ($\beta = -.134$), and Active Use ($\beta = -.323$) are the most relevant variables; where Active Use has a large effect size (Mehmetoglu & Jakobsen, 2017). The regression analysis findings were supported by the path analysis, which shows that Emotional Investment ($\beta = -.132$) and Active Use ($\beta = -.323$) are the significant paths. Active Use was once again, the most crucial variable. Intentions were not included in the SEM analysis and are therefore not present here. These findings indicate that the people who score high on Emotional Investment, Intentions to self-present, and Active Use are more likely to have a positive emotional effect.

The reason all variables have a negative effect might be because the measurement mostly measures situations that are positive in nature, e.g., lower Emotional Investment gives a more positive emotional response on the Feedback variable. On the other hand, with the mean being around “neither positive nor negative affected”, some people are negatively affected by these situations on Instagram. Again, a possible explanation is that people who are more emotionally invested and Active users might have a more extensive insight into Instagram and are therefore more aware of the Enhanced Presentation and effect it can have on an individual. Another possible explanation is that these types of situations usually activate

positive emotions in the users, and those that are emotionally invested and active users get a more substantial positive effect compared to those with lower scores on these measures.

The type of feedback received is essential for how someone experiences Instagram. While positive feedback potentially enhances higher Self-Esteem and well-being, negative feedback might have the opposite effect (Lup et al., 2015). Current results, seen in the light of the research by Lup et al. (2015), can indicate that participants in this study might get mostly positive feedback. People that get negative feedback, or lack of feedback, might not choose to participate in a study about Instagram, or might not use Instagram at all.

Feedback was the only dependent variable in this study not to have a significant relationship with SCO. This in itself is an interesting finding, but this can come from the fact that the variable itself is not related to Social Comparison. The question is more about getting feedback or waiting for feedback and not an evaluation of the quality of the content that is posted.

General discussion

In this section, the findings will be discussed more generally, and the research questions will be answered. All the variables and the findings, or lack thereof, will be discussed in relation to findings on the field presented. The implications and limitations of these findings will be discussed, as well as future research.

Research questions

RQ1: How does Instagram use affect the individual, both emotionally and behaviorally? In general, we see that people, on average, present themselves in an enhanced way, and the amount of people that spend Time and Money to get content on Instagram and use Deceptive Presentation is generally low. Most people get a favorable emotional affect from spending time and being active on the platform.

RQ2: What makes some individuals more affected than others? The trend in the results of the current study indicates that Emotional Investment, Social Comparison orientation, and Active Use are the most influential variables in the behavioral and emotional responses of an individual, 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.

How do these results fit with research in general?

Gender and Age. Gender and Age were not found to have a significant effect in the regression analyses, except for Enhanced Presentation. The analysis found that younger users

and females were more likely to use Enhanced Presentation. Age and Gender were also found to moderate other variables. This might show that Gender and Age are not as important when it comes to the more “extreme” behavioral and emotional responses and that other variables are more relevant to determine if you are deceptive, spend money and time, or emotionally affected. Additionally, there were many women compared to men that participated in the study, which could skew the results.

Haferkamp and Krämer (2011) found that Gender was a moderating variable on Social Comparison. Men were more focused on career and success when comparing themselves to others, while females were more focused on physical attractiveness. This finding might indicate that men and women might be affected by different aspects of Instagram. Also, men might use Instagram as a platform to show off their successes and recourses, and physical attractiveness might be more of a focus for women. If this were the case, it would be in line with the finding on research from an evolutionary perspective, where the desired traits in a potential partner are different between the Genders (Buss et al., 1993). A lot of the research today is focused on body dissatisfaction among girls. To my knowledge, there has been little to no research on the effects of exposing boys to other successful males online. This potential difference between the sexes should be investigated more in the future.

Personality and Shyness. Personality was not found to be an essential variable in this study, but it might be that personality has an indirect effect via, for instance, SCO or Emotional Investment. This was not found or looked at in this study. Also, Shyness was not found to be important, in line with the meta-analysis conducted by Appel and Gnambs (2019). They found that there was no direct effect between Shyness and SNS. However, they found a small positive relationship between Shyness and general use, and no effect for Passive Use (Appel & Gnambs, 2019).

Self-Esteem. Self-Esteem was not found to affect either of the behavioral and emotional responses in the regression analysis nor was Self-Esteem found to have a moderating effect. Similarly, Self-Esteem was not found to have a direct effect on behavioral and emotional responses in the path analysis. However, it was found to have an indirect effect on four out of five responses via SCO. The indirect effects were all negative, which indicated that lower Self-Esteem could give 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 (Yang, 2016), also the theory that high Self-Esteem can be a protective factor against upward Social Comparison (Haferkamp & Krämer, 2011). Stapleton et al. (2017) 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) hypothesized that this might be because Instagram is different from other SNS. The finding that picture-based SNS (E.g., Snapchat, and Instagram) have different effects than text-based SNS might support this (Lowe-Calverley et al., 2019). In contrast with Woods and Scott (2016) and Lowe-Calverley et al. (2019) was there not found a relationship between Emotional Investment and Self-Esteem in the current study.

Life Satisfaction. 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. (2017) also found that using deceptive methods could lead to negative adjustments and lower well-being (Dumas et al., 2017). Reinecke et al. (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.

Followers. Lowe-Calverley et al. (2019) found that Investment in Instagram significantly moderated the effect of the number of Followers on Self-Esteem. In this study, Followers were found to be an important factor in the behavioral response – Time and Money.

Minutes, Checking, Activity and Intentions. In general, findings on Instagram use indicate that there is support for both positive and negative effects of Instagram use on the individual (Lup et al., 2015). This is partly supported in this study by the finding that Active Use is an important variable concerning all five dependent variables (emotional and behavioral responses). In addition to Active Use, other variables that have shown to be moderating factors for SCO and Emotional Investment are Passive Use, Minutes, and Checking. 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 were generally, in this study, found to be very similar to actual use, and therefore felt excessive to some extent. However, looking at Intentions might be useful for future research, and could be used as a form of controlling variable..

SCO. Social Comparison has frequently been tested in regards to Instagram and has been found to be 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. Meier and Schäfer (2018) confirmed a link between SCO and inspiration, which indicates positive results from upward Social Comparison. This

relationship was mediated by benign Envy, but not malicious Envy (Meier & Schäfer, 2018). This is in line with what Yang (2016) hypothesized; different types of Instagram use could trigger Social Comparison in different ways. Much 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 (2011) and Brown and Tiggemann (2016) found a negative effect of SCO on the participants' moods while using Instagram, the current study found a positive effect.

Emotional Investment. 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 (2016) and Lowe-Calverley et al. (2019) found connections between Emotional Investment and lower Self-Esteem, anxiety, stress, and depression. Emotional Investment was not found to be significantly affected by Self-Esteem in the SEM analysis in this study. 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.

Representativity Mismatch. According to my knowledge, 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

A potential limitation of this study is that the dependent variables (behavioral and emotional responses) were all made for this study and have not been previously tested. Even though I am a user of Instagram, I feel that these measures were not as inclusive and broad as intended. For instance, they were more catered towards younger participants, and they should either include more details or more general. Also, many questions were focusing on negative effects and not the positive, and could lead to response bias, even though the final results indicated positive effects. This was not the intention when making them, but in hindsight, this

could have been done more thoroughly. In general, the emotional response measure seems to be less reliable compared to the behavioral measures.

In both the regression analysis and the SEM analysis the R^2 were consistently medium for Envy (reg. $R^2=.200$, SEM $R^2=.124$), Feedback (Reg. $R^2=.281$, SEM $R^2=.178$), and Time and Money (Reg. $R^2=.321$, SEM $R^2=.274$) (Mehmetoglu & Jakobsen, 2017). The other behavioral measures, Enhanced Presentation (Reg. $R^2=.582$, SEM $R^2=.514$) and Deceptive Presentation (Reg. $R^2=.422$, SEM $R^2=.372$), had overall large values (Mehmetoglu & Jakobsen, 2017). This indicated that the results for Envy, Feedback, and Time and Money should be interpreted with caution. When conducting factor analysis, the factors of the emotional responses were more challenging to obtain, but the Cronbach's Alpha still ended up being adequate. This can indicate that the measures were not good enough. On the other hand, this is an entirely new measure that needs to be researched further. An interesting angle might be to combine these measures with a more reliable measurement, like PANAS.

However, even though some of the R^2 and $adjR^2$ are low, many of the findings were supported by the SEM analysis, which in general had a good fit on multiple measures (Mehmetoglu & Jakobsen, 2017). The fact that both the regression analyses and SEM had similar results indicate that these variables (Emotional Investment, Social Comparison, and activity) are essential for the emotional and behavioral effect of Instagram.

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, Heine, & Norenzayan, 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 WEIRD. It is important to remember this when evaluating the generalizability of this research (Henrich et al., 2010).

Social desirability is a potential flaw with research in the social sciences, especially when using questionnaires (Richardson, Goodwin, & Vine, 2011), and can be important in this study as well. Even though all participants were informed of the anonymity of the study, they could still have been affected by social desirability. This might be enhanced by the fact that some participants were my friends on Facebook, and could be worried that I would be able to see their answers, even though I could not. Since the questionnaire was filled out electronically, I have no control over the contextual setting where people filled out the questionnaire. Therefore, there might exist sources of bias unknown to me. The large sample size helps to lower these potential biases.

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 psychological reality (Richardson et al., 2011). Some of the findings in this study were supported by previous findings in the field, which gives them a better foothold. 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. Also, more research efforts should be directed towards making more standardized measures for Instagram use since there are none to date. This makes it more difficult to compare research on the field, and research into this would help the field as a whole.

The future of Instagram is uncertain, as with all SNS, but the implementation of the removal of likes in the future is an interesting new angle. The intention from Instagram's side is to lower the pressure people feel on the platform, but the question is if this is an effective measure to take to battle this problem. Only future research can tell. Questions measuring "success" on the platform were not used in this study, but could also be interesting for future research, especially with the removal of likes.

Conclusion

This study aimed to look at the behavioral and emotional responses to Instagram use, and what individual psychological traits determine the effect for an individual through an online survey. There are limitations in the design, e.g., that some measures were self-made, but the statistical analysis shows strength in the results. Despite the limitations, the conclusion is that Emotional Investment, Social Comparison orientation (SCO), and Active Use are the variables that are most important for both determining the behavioral and emotional responses for an individual, on a group level. Other variables found to be important are Life Satisfaction, Representativity Mismatch in life, and Passive Use. Other 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 the amount of people

that spend Time and Money to get content on Instagram and use Deceptive Presentation is generally low. Most people also get a favorable emotional affect from spending time and being active on the platform.

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Appendix 1.1: Questionnaire



Spørreundersøkelse om Instagrambruk

Informasjon

Formålet med dette spørreskjemaet er å undersøke hvordan instagram påvirker dine følelser og atferd. Dataen fra denne spørreundersøkelsen skal brukes i min masteroppgave og eventuelle vitenskapelige artikler. Noen av spørsmålene kan oppleves ubehagelig å svare på. Det er ønskelig at du svarer så ærlig som mulig. Spørreundersøkelsen er helt anonym. Du kan når som helst trekke deg fra undersøkelsen, uten at dette vil ha noen konsekvens for deg. Det finnes ingen rette eller gale svar, og ingen svar er bedre eller mer ønsket en andre. Det vil ta ca. 15 minutter å fullføre undersøkelsen.

Takk for at du er villig til å delta i spørreundersøkelsen!

Ved spørsmål om undersøkelsen ta kontakt med meg på ishaug@stud.ntnu.no.

Med vennlig hilsen Inga Sofie Haug,
Masterstudent ved Institutt for Psykologi, NTNU



Spørreundersøkelse om Instagrambruk

Generelt om deg

1. Vennligst kryss av en:

- Mann
 Kvinne
 Annet

2. Vennligst skriv inn din alder:

3. Her er et utvalg av personlige egenskaper og trekk. Du vil se at noen av disse beskriver deg godt, mens andre ikke gjør det. Du skal her bedømme hvor mye enkelte utsagn passer for deg.

	Sterk uenig	Uenig	Litt uenig	Hverken enig eller uenig	Litt enig	Enig	Sterkt enig
Reservert, stille	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Sympatisk, varm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Uorganisert, skjødesløs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rolig, emosjonelt stabil	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Konvensjonell, lite kreativ	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utadvendt, entusiastisk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kritisk, kranglete	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pålitelig, selv-disiplinert	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Engstelig, lett opprørt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Åpen for nye erfaringer, kompleks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. Sammenlignet med andre, hvor godt passer de ulike utsagnene deg?

	Sterkt uenig	Uenig	Hverken enig eller uenig	Enig	Sterkt Enig
Alt i alt er jeg fornøyd med meg selv	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Noen ganger tenker jeg at jeg er verdiløs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg har en rekke gode kvaliteter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg er i stand til å gjøre ting like så bra som de fleste andre	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg føler jeg ikke har mye å være stolt av	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Noen ganger føler jeg meg ubrukelig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg føler at jeg er et verdifullt menneske	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg skulle ønske jeg hadde mer respekt for meg selv	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alt i alt er jeg tilbøyelig til å tro at jeg er en fiasko	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg har en positiv holdning til meg selv	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. Sammenlignet med andre, hvor godt passer de ulike utsagnene deg?

	Sterkt uenig	Uenig	Hverken enig eller uenig	Enig	Sterkt Enig
Jeg er sjenert	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg er veldig pratsom	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Andre syns jeg er sjenert	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
De fleste er mer sjenert enn meg	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. Til hvilken grad er du enig i disse utsagnene?

	Sterkt uenig	Uenig	Litt uenig	Hverken enig eller uenig	Litt enig	Enig	Sterkt enig
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

På de fleste måter er livet mitt nær idealet mitt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Omstendighetene i livet mitt er utmerket	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg er fornøyd med livet mitt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Så langt har jeg fått de viktige tingene jeg ønsker i livet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hvis jeg kunne leve livet mitt over, ville jeg forandret nesten ingenting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Spørreundersøkelse om Instagrambruk

Instagrambruk

7. Hvor mange minutter bruker du ca. på Instagram i løpet av en dag? Rund gjerne av til nærmeste 10. minutt.

8.

	Ca. en gang i timen eller oftere	Flere ganger om dagen	Hver dag	Flere ganger i uken	En gang i uken eller sjeldnere
Hvor ofte sjekker du Instagram?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9.

	0-300	301-600	601-1000	1001-5000	5001+
Hvor mange følgere har du på Instagram?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. Hvor enig er du i de ulike påstandene om intensjoner ved å bruke Instagram?

	Sterk uenig	Uenig	Litt uenig	Hverken enig eller uenig	Litt enig	Enig	Sterkt enig
Dele de spesielle hendelsene i livet mitt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dele hverdagen min med følgerne mine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Følge med på hva venner og bekjente deler	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Få innblikk i livet til kjendiser ved å	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

følge de	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Underholdning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Få flest mulig følgere	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Hvor ofte gjør disse ulike aktivitetene på Instagram?							
	Svært sjelden	Sjelden	Av og til	Ofte	Svært ofte		
Legger ut et bilde	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Sjekker «feeden»/det andre har lagt ut	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Legger ut en «story»/historie	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Sjekker andre sine «stories»/historier	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Tagger andre i bilder eller kommentarer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Ser på andre folks profiler (bilder og høydepunkter)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Kommenterer andre sine bilder	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Sjekker explore/utforsk siden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Redigerer bilder du vurderer å legge ut (inkludert andre redigeringsapper)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Sjekker varslene dine (nye likes og følgere)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Snakker med andre på meldinger/DM	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Sjekker/ser på din egen profil	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
12. Hvor enig er du i utsagnene under?							
	Sterkt uenig	Uenig	Hverken enig eller uenig	Enig	Sterkt Enig		
Jeg føler meg frakoblet fra venner når jeg ikke er på Instagram	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Jeg skulle ønske alle brukte Instagram	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Jeg liker ikke å bruke Instagram	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Jeg ville blitt skuffet om jeg ikke kunne brukt Instagram i det hele tatt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Jeg blir urolig når jeg ikke får sjekket Instagram	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Jeg foretrekker å kommunisere med andre hovedsakelig gjennom Instagram	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Instagram spiller en viktig rolle i mine sosiale forhold	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Jeg liker å sjekke Instagram	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Å bruke Instagram er den del av min daglige rutine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
Jeg interagerer med det innholdet andre legger ut på Instagram	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		

13. I forhold til andre på Instagram føler jeg at jeg som regel ...

	Sterkt uenig	Uenig	Hverken enig eller uenig	Enig	Sterkt Enig
Jeg sammenligner meg ofte med hvordan folk jeg er glad i (kjæreste, venner o.l.) opptrer eller gjør det på Instagram med hvordan jeg gjør det på Instagram	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg er ikke den typen menneske som sammenligner meg med andre på Instagram	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg følger alltid nøye med på hvordan jeg gjør ting (for eksempel hva du legger ut) sammenlignet med hvordan andre gjør ting på Instagram	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hvis jeg vil finne ut hvor bra jeg har gjort det på Instagram sammenligner jeg meg med andre	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg sammenligner ofte hvordan jeg gjøre det sosialt (eks., popularitet) med andre på Instagram	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg sammenligner meg ofte med andre på Instagram i forhold til hva jeg har oppnådd i livet mitt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Spørreundersøkelse om Instagrambruk

Responser på Instagramaktivitet

14. Hvordan påvirker disse ulike situasjonene humøret ditt på en generell basis? Positiv effekt kan for eksempel være glede eller motivasjon. Negativ effekt kan for eksempel være tristhet eller sjalusi.

	Bare positivt	Mest positivt	Ingen endring	Mest negativt	Bare negativt
Rett etter du har lagt ut et bilde	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Du får mindre likes på et bilde enn vanlig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Du får flere likes på bildet ditt sammenlignet med hva du vanligvis får	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Etter du er ferdig å sjekke Instagram	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Noen du følger legger ut at de har skaffet seg noe du ønsker deg eller sparer til	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Noen legger ut et pent bilde av seg selv og får mye respons av andre	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Noen kommenterer noe på bildet ditt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Når du vurderer om du skal legge ut et bilde eller ikke	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Noen legger ut noe stort de har oppnådd i livet sitt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Noen legger ut bilder fra en idyllisk tur eller ferie	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Du får beskjed om at noen har lagt ut et bilde av deg	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Du merker at du har brukt ekstra mye tid på Instagram den siste uken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Hvor ofte vil du si at du gjør de ulike atferdene under?					
	Aldri	Sjelden	Omtrent halvparten av tiden	Som regel	Alltid
Valgt restaurant/kafe eller lignede etter hvor pent stedet eller maten ville sett ut på Instagram?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Valgt feriested/hotell etter hvor pent eller kult stedet vil se ut på Instagram?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Isenesatt et bilde for at det skal se pent ut? For eksempel legge fram eller flytte på ting og/eller folk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kjøpt noe fordi det vil se bra ut på Instagram? For eksempel klær, smykker, interiør, mat eller andre materialistisk ting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ikke lagt ut et bilde fordi det ikke ser bra nok ut til å være på din Instagram?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bare lagt ut bilder som er pene av deg?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Redigert utseendet ditt på et bilde før du legger det ut på Instagram?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lagt ut et bilde som indikerer en bedre eller mer spennende livsstil enn jeg egentlig har?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Redigert bildet før du legger det ut? For eksempel legger på et filter, endre lysstyrke og lignede	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Undersøkt hvilke typer bilder andre får mye likes på?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Slettet et bilde du fikk lite likes på?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gjort noe eller dratt et sted bare i håp om å få tatt et bilde til Instagram?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Spørreundersøkelse om Instagrambruk

Representativitet

16. Hvis du ser på alt du legger ut på Instagram i sin helhet, hvor enig er du i disse påstandene?

	Sterkt uenig	Uenig	Hverken enig eller uenig	Enig	Sterkt Enig
De representerer livet og hverdagen din godt.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
De representerer utseendet ditt godt.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

17. Hvis du ser på alt andre legger ut på Instagram i sin helhet, hvor enig er du i disse påstandene?

	Sterkt uenig	Uenig	Hverken enig eller uenig	Enig	Sterkt Enig
De representerer de livet og hverdagen deres godt.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
De representerer de utseendet deres godt.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Ved å trykke på "ferdig" leverer du spørreundersøkelsen.

Appendix 1.2: Tables

Factor analysis results

Table 1

Rotated factor loading for behavioral responses

Item	Elevated Presentation	Money or time	Deceptive Presentation
1. Chosen a restaurant/cafe or something similar based on how pretty the place would look on Instagram?	.021	-.902	-.125
2. Chosen a vacation spot/hotel based on how pretty the place would look on Instagram?	.014	-.707	-.009
3. Staged a picture so it would look good? E.g. including or moving things and/or people.	.573	-.225	-.009
4. Bought something because it would look good on Instagram? E.g. clothing, jewelry, interior, food or other materialistic things.	-.002	-.442	.368
5. Not posted a picture only because it did not look good enough to be on your Instagram?	.748	-.003	-.015
6. Only posted pictures where you look good?	.731	.046	-.017
7. Edited your looks in a picture before posting it on Instagram?	.001	.055	.688
8. Posted a picture that indicates a better lifestyle than you actually have?	.364	.057	.395
9. Edited a picture before posting it? E.g. adding filters or editing brightness.	.728	.033	.037
10. Researched what types of pictures others get many likes on?	.125	-.235	.366

11. Deleted a picture you did not get enough like son?	.014	-.036	.607
12. Done something or went somewhere only because you hoped to get a picture for Instagram?	.178	-.365	.303

Note: Factor loadings in bold represent that is belongs to that factor.

Table 2

Rotated factor loading for Instagram activity

Item	Active and self-centered use	Observant and communicative use
1. Post a picture	.857	-.188
2. Check the “feed”/what others have posted	.120	.650
3. Post a “story”	.598	.117
4. Check other people’s stories	.067	.736
5. Tag others in pictures or comments	.218	.448
6. look at other people’s profiles (pictures and highlights)	.112	.651
7. Comment on other people’s pictures	.426	.364
8. Check the explore page	-.131	.628
9. Edit pictures you are considering posting (including third party apps)	.661	.040
10. Check your notifications (new likes and Followers)	.644	.165
11. talk to others on messages(“DM”)	-.005	.626
12. Look at your own profile	.716	.092

Note: Factor loadings in bold represent that is belongs to that factor.

Table 3

Rotated factor loading for Intentions with Instagram use

Item	Self- presentation	Observation
------	-----------------------	-------------

1. Share the special occasions in my life with my Followers	.256	.727
2. Share my everyday life with my Followers	.130	.643
3. Follow friends and acquaintances	.588	.226
4. Gain insight into the life of celebrities by following them	.448	.141
5. Entertainment	.875	-.112
6. Gain Followers	-.007	.389

Note: Factor loadings in bold represent that is belongs to that factor.

Table 4

Rotated factor loading for emotional responses to Instagram use

Item	Jealousy	Feedback
1. Someone has posted a picture of you	.073	.554
2. Someone post pictures from an idyllic trip or vacation	.696	.062
3. someone posts about something big they have achieved in their life	.825	.155
4. right after posting a picture on Instagram	.122	.641
5. You get more likes than usual on your picture	.081	.447
4. When you are considering posting a picture on Instagram	.233	.449
5. Someone comments on your picture	.186	.566
6. Someone post a good picture of themselves, and get a lot of likes	.594	.149
7. Someone you follow post that they got/bought something that you have been wanting	.492	.061

Note: Factor loadings in bold represent that is belongs to that factor. 3 items were excluded from the measure.

Correlation analysis results

Table 5

Correlation analysis for all variables

4	1	4	1	3	2	1	1	1	1	0	9	8	7	6	5	4	3	2	1	
.31**	.20**	-.22**	.18**	.06	-.04	-.17**	-.01	.29**	.13*	.20**	.03	-.03	1							Gender (1)
-.30**	-.30**	.39**	-.32**	-.06	.16**	.19**	.03	-.19**	.16**	.04	.05	1								Age (2)
-.02	.22**	-.12*	.04	-.78**	.26**	.32**	.18**	-.02	.11	-.12*	1									Extroversion (3)
.16**	.07	-.08	.12*	.18**	.02	-.06	-.08	-.10	.10	1										Agreeableness (4)
.04	.08	-.03	.05	-.05	.28**	.27**	-.02	-.11	1											Conscientiousness (5)
.25**	.10	-.09	.02	.04	-.30**	-.51**	-.01	1												Neuroticism (6)
-.07	-.04	.03	.00	-.15**	-.00	.03	1													Openness (7)
-.11	-.02	.08	-.09	-.29**	.61	1														Self-Esteem (8)
-.04	-.02	.01	.01	-.15**	1															Life Satisfaction (9)
.04	-.19**	.14*	-.07	1																Shyness (10)
.33**	.38**	-.57**	1																	Minutes (11)
-.46**	-.38**	1																		Checking (12)
.24**	1																			Followers (13)
1																				Int.: Observation (14)
																				Int.: Self-presentation (15)
																				Active Use (16)
																				Passive Use (17)
																				Emotional Investment (18)
																				Social Comparison (19)
																				Feedback (20)
																				Envy (21)
																				Enhanced Presentation (22)
																				Money and Time (23)
																				Deceptive Presentation (24)
																				Representativity: life (25)
																				Representativity: looks (26)

	26	25	24	23	22	21	20	19	18	17	16	15
-03	.08	.15**	.21**	.33**	.02	-.08	.21**	.25**	.26**	.29**	.11*	
-14	-.05	-.24**	-.11*	-.29**	-.09	.05	-.29**	-.28**	-.51**	-.21**	-.10	
.07	.07	.10	.12*	.09	-.12*	-.17**	.04	.12*	.15**	.24**	.18**	
-.05	.01	.00	.07	.09	.05	-.04	.09	.14*	.05	.07	-.02	
-.05	.01	.03	.01	.09	-.03	-.01	.01	.10	.02	.10	.07	
-.05	-.03	.19**	.15**	.25**	.21**	-.02	.39**	.15**	.19**	.14*	.13*	
.10	.06	.07	.06	.08	.02	-.07	-.03	-.04	.05	.08	.13*	
.04	.02	-.18**	-.13*	-.16**	-.21**	-.09	-.34**	-.05	-.15**	-.09	-.01	
.01	.01	-.18**	-.09	-.09	-.13*	-.10	-.19**	-.00	-.07	.01	-.01	
-.11*	-.08	-.05	-.07	-.05	.08	.13*	.00	-.09	-.11*	-.18**	-.11*	
.06	.03	.27**	.25**	.32**	-.08	-.17**	.27**	.47**	.52**	.42**	.14*	
-.10	-.18**	-.31**	-.27**	-.48**	.04	.29**	-.42**	-.69**	-.71**	-.54**	-.29**	
.03	.08	.35**	.39**	.43**	-.03	-.16**	.33**	.49**	.44**	.57**	.22*	
.14*	.15**	.27**	.20**	.38**	-.00	-.22**	.38**	.42**	.53**	.27**	.26**	
.10	.16**	.26**	.28**	.39**	-.08	-.34**	.41**	.37**	.27**	.52**	1	
.10	.16**	.48**	.47**	.62**	-.06	-.41**	.58**	.65**	.59**	1		
.15*	.13*	.44**	.29**	.51**	-.04	-.25**	.50**	.66**	1			
.05	.10	.38**	.44**	.59**	-.07	-.35	.54*	1				
.05	.00	.57**	.42**	.63**	.24**	-.20**	1					
-.13*	-.20**	-.05	-.08	-.26**	.28**	1						
-.10	-.15*	.18**	.06	.09	1							
.01	.07	.57**	.49**	1								
.04	.07	.51**	1									
-.05	-.13*	1										
.52**	1											
1												

1.0 →	.80 →	.60 →	.40 →	.20 →	.00 →	-.20 →	-.40 →	-.60 →	-.80 →	-1.0
.80	.60	.40	.20	.00	-.20	-.40	-.60	-.80	-1.0	

Regression analysis results

Table 6

Hierarchical multiple regression analysis for Enhanced Presentation

Model	Variable	Unstandardised		Standardized	
		B	Std. Error	B	Sig.
1	(Constant)	3.139	.188		.000
	Gender. Woman=1.	.776	.122	.338	.000
	Age	-.036	.006	-.302	.000
2	(Constant)	.573	.400		.153
	Gender. Woman=1.	.416	.101	.181	.000
	Age	-.016	.005	-.135	.002
	Self-Esteem	.120	.081	.085	.136
	Life Satisfaction	-.033	.045	-.038	.462
	Shyness	-.034	.049	-.030	.494
	Emotional Investment	.415	.079	.278	.000
	Social Comparison	.453	.058	.418	.000
3	(Constant)	-.129	.617		.835
	Gender. Woman=1.	.400	.105	.174	.000
	Age	-.017	.005	-.139	.002
	Self-Esteem	.112	.087	.079	.203
	Life Satisfaction	-.033	.045	-.038	.467
	Shyness	-.005	.074	-.005	.944
	Emotional Investment	.420	.080	.281	.000
	Social Comparison	.448	.060	.413	.000
	Extroversion (Big5)	-.002	.046	-.003	.967
	Agreeableness (Big5)	-.027	.042	-.028	.521
	Conscientiousness (Big5)	.040	.037	.049	.275
	Neuroticism (Big5)	.008	.038	.011	.831
	Openness (Big5)	.116	.042	.118	.006
4	(Constant)	.261	.679		.701
	Gender. Woman=1.	.303	.107	.132	.005
	Age	-.014	.006	-.117	.021
	Self-Esteem	.109	.087	.077	.212
	Life Satisfaction	-.040	.045	-.047	.371
	Shyness	.001	.074	.001	.994

Emotional Investment	.207	.101	.138	.042
Social Comparison	.365	.064	.336	.000
Extroversion (Big5)	-.026	.046	-.037	.578
Agreeableness (Big5)	-.025	.041	-.027	.538
Conscientiousness (Big5)	.035	.036	.043	.331
Neuroticism (Big5)	.011	.039	.015	.773
Openness (Big5)	.111	.041	.113	.008
Minutes	-.001	.001	-.038	.463
How often you check	-.086	.065	-.090	.186
Followers	.098	.062	.085	.115
Intentions: observation	.036	.047	.040	.448
Intentions: Self-presentation	.046	.040	.058	.255
Activity: active, self-centred	.212	.085	.181	.013
Activity: passive communicative	-.067	.082	-.057	.416
Representativity Mismatch Life	.032	.046	.033	.494
Representativity Mismatch Looks	-.069	.041	-.081	.098

Note: Factor loadings in bold represent that they are significant.

Table 7

Hierarchical multiple regression analysis for Time and Money

Model	Variable	Unstandardised		Standardized	
		B	Std. Error	B	Sig.
1	(Constant)	1.390	.122		.000
	Gender. Woman=1.	.309	.079	.226	.000
	Age	-.008	.004	-.107	.064
2	(Constant)	.600	.297		.044
	Gender. Woman=1.	.123	.075	.090	.103
	Age	.003	.004	.038	.486

	Self-Esteem	-.025	.060	-.029	.680
	Life Satisfaction	-.037	.033	-.072	.271
	Shyness	-.040	.036	-.060	.275
	Emotional Investment	.276	.059	.311	.000
	Social Comparison	.136	.043	.211	.002
3	(Constant)	.447	.464		.336
	Gender. Woman=1.	.135	.079	.099	.091
	Age	.003	.004	.037	.506
	Self-Esteem	-.041	.066	-.049	.533
	Life Satisfaction	-.038	.034	-.074	.267
	Shyness	-.003	.056	-.004	.960
	Emotional Investment	.277	.060	.312	.000
	Social Comparison	.143	.045	.222	.002
	Extroversion (Big5)	.028	.035	.069	.425
	Agreeableness (Big5)	-.004	.031	-.006	.909
	Conscientiousness (Big5)	-.014	.028	-.028	.620
	Neuroticism (Big5)	-.022	.029	-.052	.438
	Openness (Big5)	.026	.031	.044	.414
4	(Constant)	.380	.514		.460
	Gender. Woman=1.	.098	.081	.072	.227
	Age	.003	.005	.037	.568
	Self-Esteem	-.054	.066	-.065	.409
	Life Satisfaction	-.037	.034	-.072	.277
	Shyness	-.001	.056	-.002	.982
	Emotional Investment	.229	.076	.258	.003
	Social Comparison	.104	.049	.161	.034
	Extroversion (Big5)	.013	.035	.032	.711
	Agreeableness (Big5)	-.005	.031	-.009	.865
	Conscientiousness (Big5)	-.017	.027	-.035	.535
	Neuroticism (Big5)	-.019	.029	-.045	.510
	Openness (Big5)	.020	.031	.034	.523
	Minutes	.001	.001	.045	.498
	How often you check	.051	.049	.089	.304

Followers	.110	.047	.159	.021
Intentions: observation	.002	.036	.004	.954
Intentions: Self-presentation	.017	.030	.037	.567
Activity: active, self-centred	.122	.064	.177	.058
Activity: passive communicative	-.082	.062	-.117	.186
Representativity Mismatch Life	.022	.035	.039	.531
Representativity Mismatch Looks	-.002	.031	-.005	.940

Note: Factor loadings in bold represent that they are significant.

Table 8

Hierarchical multiple regression analysis for Deceptive Presentation

Model	Variable	Unstandardised coefficients		Standardized coefficients	
		B	Std. Error	B	Sig.
1	(Constant)	1.884	.134		.000
	Gender. Woman=1.	.219	.087	.145	.012
	Age	-.017	.005	-.214	.000
2	(Constant)	.704	.311		.024
	Gender. Woman=1.	.033	.079	.022	.677
	Age	-.006	.004	-.070	.180
	Self-Esteem	.087	.063	.093	.167
	Life Satisfaction	-.057	.035	-.102	.101
	Shyness	-.027	.038	-.036	.484
	Emotional Investment	.079	.062	.080	.204
	Social Comparison	.360	.045	.506	.000
3	(Constant)	.485	.483		.316
	Gender. Woman=1.	.043	.082	.028	.603
	Age	-.006	.004	-.078	.144
	Self-Esteem	.046	.068	.049	.506
	Life Satisfaction	-.065	.035	-.115	.068

	Shyness	.035	.058	.047	.552
	Emotional Investment	.078	.062	.079	.214
	Social Comparison	.366	.047	.514	.000
	Extroversion (Big5)	.043	.036	.097	.234
	Agreeableness (Big5)	-.034	.033	-.055	.295
	Conscientiousness (Big5)	.022	.029	.042	.438
	Neuroticism (Big5)	-.033	.030	-.069	.272
	Openness (Big5)	.041	.033	.063	.210
4	(Constant)	.215	.524		.682
	Gender. Woman=1.	-.021	.083	-.014	.797
	Age	-.001	.005	-.009	.873
	Self-Esteem	.061	.067	.066	.363
	Life Satisfaction	-.076	.034	-.134	.029
	Shyness	.036	.057	.048	.532
	Emotional Investment	-.083	.078	-.085	.288
	Social Comparison	.304	.050	.427	.000
	Extroversion (Big5)	.025	.035	.056	.476
	Agreeableness (Big5)	-.037	.032	-.059	.247
	Conscientiousness (Big5)	.015	.028	.029	.577
	Neuroticism (Big5)	-.031	.030	-.064	.305
	Openness (Big5)	.040	.032	.062	.213
	Minutes	.000	.001	.025	.680
	How often you check	.017	.050	.026	.741
	Followers	.076	.048	.100	.113
	Intentions: observation	.016	.037	.027	.666
	Intentions: Self-presentation	-.012	.031	-.024	.689
	Activity: active, self-centred	.153	.066	.200	.020
	Activity: passive communicative	.105	.063	.136	.098
	Representativity Mismatch	-.095	.036	-.154	.008
	Life				

Representativity Mismatch	-.028	.032	-.051	.374
Looks				

Note: Factor loadings in bold represent that they are significant.

Table 9

Hierarchical multiple regression analysis for Envy

Model	Variable	Unstandardised		Standardized	
		B	Std. Error	B	Sig.
1	(Constant)	2.649	.125		.000
	Gender. Woman=1.	.045	.081	.033	.577
	Age	-.003	.004	-.047	.433
2	(Constant)	3.030	.321		.000
	Gender. Woman=1.	.032	.081	.024	.694
	Age	-.001	.004	-.019	.750
	Self-Esteem	-.040	.065	-.048	.538
	Life Satisfaction	-.035	.036	-.069	.332
	Shyness	.001	.040	.001	.989
	Emotional Investment	.216	.047	.337	.000
	Social Comparison	-.248	.064	-.281	.000
3	(Constant)	2.999	.497		.000
	Gender. Woman=1.	-.002	.085	-.001	.985
	Age	-.002	.004	-.024	.699
	Self-Esteem	-.007	.070	-.009	.919
	Life Satisfaction	-.030	.037	-.059	.415
	Shyness	-.084	.060	-.127	.163
	Emotional Investment	.202	.048	.316	.000
	Social Comparison	-.252	.064	-.285	.000
	Extroversion (Big5)	-.073	.037	-.180	.053
	Agreeableness (Big5)	.025	.034	.045	.455
	Conscientiousness (Big5)	.037	.030	.077	.211
	Neuroticism (Big5)	.047	.031	.109	.132
	Openness (Big5)	.009	.033	.016	.783

4	(Constant)	3.406	.553		.000
	Gender. Woman=1.	.042	.088	.031	.631
	Age	-.004	.005	-.057	.415
	Self-Esteem	-.011	.071	-.013	.876
	Life Satisfaction	-.019	.036	-.037	.609
	Shyness	-.088	.060	-.134	.142
	Emotional Investment	.266	.052	.415	.000
	Social Comparison	-.169	.082	-.192	.041
	Extroversion (Big5)	-.063	.037	-.157	.092
	Agreeableness (Big5)	.020	.034	.036	.553
	Conscientiousness (Big5)	.037	.029	.078	.202
	Neuroticism (Big5)	.040	.032	.094	.202
	Openness (Big5)	.036	.034	.063	.285
	Minutes	-.001	.001	-.063	.378
	How often you check	-.056	.053	-.099	.292
	Followers	.069	.051	.101	.173
	Intentions: observation	-.019	.039	-.037	.616
	Intentions: Self-presentation	-.055	.033	-.117	.097
	Activity: active, self-centred	-.099	.069	-.144	.154
	Activity: passive	-.094	.067	-.135	.161
	communicative				
	Representativity Mismatch	-.043	.038	-.078	.250
	Life				
	Representativity Mismatch	-.021	.034	-.041	.539
	Looks				

Note: Factor loadings in bold represent that they are significant.

Table 10

Hierarchical multiple regression analysis for Feedback

Model	Variable	Unstandardised		Standardized	
		coefficients		coefficients	
		B	Std. Error	B	Sig.
1	(Constant)	2.206	.106		.000

	Gender. Woman=1.	-.064	.069	-.055	.355
	Age	.005	.004	.082	.170
2	(Constant)	3.162	.268		.000
	Gender. Woman=1.	.044	.068	.038	.519
	Age	4.634E-5	.004	.001	.990
	Self-Esteem	-.028	.054	-.040	.599
	Life Satisfaction	-.047	.030	-.109	.115
	Shyness	.051	.033	.090	.122
	Emotional Investment	-.046	.039	-.084	.243
	Social Comparison	-.245	.053	-.324	.000
3	(Constant)	3.601	.417		.000
	Gender. Woman=1.	.051	.071	.044	.474
	Age	.000	.004	-.004	.942
	Self-Esteem	-.040	.059	-.056	.500
	Life Satisfaction	-.047	.031	-.109	.124
	Shyness	-.004	.050	-.007	.937
	Emotional Investment	-.043	.040	-.078	.292
	Social Comparison	-.250	.054	-.331	.000
	Extroversion (Big5)	-.039	.031	-.113	.214
	Agreeableness (Big5)	-.006	.028	-.013	.830
	Conscientiousness (Big5)	.026	.025	.063	.294
	Neuroticism (Big5)	-.008	.026	-.021	.761
	Openness (Big5)	-.026	.028	-.053	.351
4	(Constant)	3.426	.450		.000
	Gender. Woman=1.	.105	.071	.091	.139
	Age	6.606E-5	.004	.001	.987
	Self-Esteem	-.033	.058	-.046	.571
	Life Satisfaction	-.037	.030	-.085	.216
	Shyness	-.014	.049	-.025	.773
	Emotional Investment	.039	.043	.072	.357
	Social Comparison	-.140	.067	-.185	.038
	Extroversion (Big5)	-.029	.030	-.085	.336
	Agreeableness (Big5)	-.013	.027	-.028	.629

Conscientiousness (Big5)	.025	.024	.060	.299
Neuroticism (Big5)	-.013	.026	-.035	.619
Openness (Big5)	-.006	.027	-.013	.818
Minutes	.001	.001	.046	.504
How often you check	.035	.043	.072	.417
Followers	.044	.041	.075	.284
Intantions: observation	-.039	.031	-.087	.215
Intentions: Self-	-.054	.027	-.134	.045
presentation				
Activity: active, self-	-.191	.056	-.323	.001
centred				
Activity: passive	.061	.054	.102	.266
communicative				
Representativity Mismatch	-.042	.031	-.087	.174
Life				
Representativity Mismatch	-.018	.027	-.043	.503
Looks				

Note: Factor loadings in bold represent that they are significant.

Table 11

Moderating Effect of Active Use on Emotional Investment and Time and Money

	<i>b</i>	<i>SE b</i>	<i>t</i>	<i>p</i>
Constant	1.3346	.0332	40.2348	.000
Emotional Investment	.2637	.0552	4.7799	.000
Active Use	.1866	.0428	4.3644	.000
Emotional Investment*	.2321	.0450	5.1518	.000
Active Use				

Note: $R^2=.5584$, $\Delta R^2=.0567$

Table 12

Moderating Effect of Passive Use on Emotional Investment and Time and Money

	<i>b</i>	<i>SE b</i>	<i>t</i>	<i>p</i>
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Constant	1.3682	.0351	38.9750	.000
Emotional Investment	.3988	.0583	6.8367	.000
Passive Use	.0495	.0476	1.0396	.2993
Emotional Investment *	.1423	.0461	3.0900	.0022
Passive Use				

Note: $R^2=.4701$, $\Delta R^2=.0239$

Table 13

Moderating Effect of Active Use on Social Comparison and Time and Money

	<i>b</i>	<i>SE b</i>	<i>t</i>	<i>p</i>
Constant	1.3615	.0337	40.3631	.000
Social Comparison	.1321	.0377	3.5074	.0005
Active Use	.2327	.0405	5.7429	.000
Social Comparison * Active	.1314	.0367	3.5826	.0004
Use				

Note: $R^2=.5317$, $\Delta R^2=.0296$

Table 14

Moderating Effect of Passive Use on Social Comparison and Time and Money

	<i>b</i>	<i>SE b</i>	<i>t</i>	<i>p</i>
Constant	1.3767	.0345	39.9170	.000
Social Comparison	.2110	.0379	5.5598	.000
Passive Use	.1243	.0434	2.8660	.0044
Social Comparison *	.1142	.0396	2.8853	.0042
Passive Use				

Note: $R^2=.4562$, $\Delta R^2=.0212$

Table 15

Moderating Effect of Active Use on Social Comparison and Deceptive Presentation

	<i>b</i>	<i>SE b</i>	<i>t</i>	<i>p</i>
Constant	1.5652	.0357	43.8543	.000
Social Comparison	.3051	.0398	7.6617	.000

Active Use	.1818	.0430	4.2277	.000
Social Comparison * Active Use	.1541	.0388	3.9742	.0001

Note: $R^2=.6246$, $\Delta R^2=.0311$

Table 16

Moderating Effect of Passive Use on Social Comparison and Deceptive Presentation

	<i>b</i>	<i>SE b</i>	<i>t</i>	<i>p</i>
Constant	1.5695	.0348	45.1399	.000
Social Comparison	.3065	.0382	8.0217	.000
Passive Use	.2333	.0437	5.3450	.000
Social Comparison * Active Use	.1653	.0398	4.1531	.000

Note: $R^2=.6248$, $\Delta R^2=.0339$

