The Relationship of Upward Social Comparison with Life-Satisfaction:

A Difference Between Comparison with Influencers, Close Peers and Distant Peers on Instagram

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Technology statement

For this thesis some digital tools and services are used. Firstly, Thesaurus.com was used to find synonyms for words. Secondly ChatGPT was used for inspiration on the subject and research questions. Lastly Scribbr.nl was used to make the reference list in APA (edition 7). To check spelling and grammar the spelling/grammar check of Google docs and Microsoft Word was used.

Abstract

With social media being a significant aspect of modern life, it influences individuals' life satisfaction through social comparison on various platforms. This study investigates the relationship between upward social comparison on Instagram and life satisfaction among young adults, with envy as a mediating factor and self-esteem as a potential moderator. By distinguishing between comparisons with influencers, close peers and distant peers, the research aims to attribute some valuable findings to the literature. It was expected that upward social comparison on Instagram with all three reference groups would have a negative impact on people's life satisfaction due to a mediating effect of envy. Additionally, it was tested if self-esteem would moderate this mediating effect. It was further hypothesized that upward social comparison with close peers would have a weaker effect on life satisfaction compared to distant peers and influencers. Lastly, it was expected that upward social comparison with influencers would have a weaker effect on life satisfaction than upward social comparison with distant peers. After conducting a moderated mediation analysis for all three independent variables, no significant relationships were found. The implications of these findings, limitations of the study, and recommendations for future research are discussed.

Keywords: life satisfaction, upward social comparison, envy, self-esteem, Instagram use

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1. Introduction

Achieving life satisfaction is a common human pursuit, leading to experiences of happiness that can bolster mental well-being (Nemati & Maralani, 2016). Various factors contribute to life satisfaction. One of them, which is a big factor nowadays, is social media usage (Marttila et al., 2021). Social media platforms like Instagram have become increasingly popular and indispensable in daily life. They are fundamentally reshaping the landscape of social interactions and self-perception. Since Instagram was founded by Michel Krieger in 2010, the number of users kept growing every year (*Instagram Revenue and Usage Statistics (2024) - Business of Apps*, 2024). At the end of 2023 Instagram counted almost 2.3 billion users (*Instagram Revenue and Usage Statistics (2024) - Business of Apps*, 2024).

As Instagram is a visually oriented interface it offers users an unique glimpse into the lives of others, including both acquaintances and influencers (Dinh & Lee, 2021; Faelens et al., 2021). This social media platform allows for the sharing of highly curated and edited content, showcasing idealized images of people's lives (Schreurs et al., 2022). As a result, individuals are naturally likely to compare themselves to others (Burnell et al., 2019; Festinger, 1954). Social comparison theory, proposed by Festinger (1954), suggests that people evaluate themselves based on judgments of others who are similar to them, such as those of the same age or sex. This is also known as social comparison. Research has shown that people who use social media, which involves scrolling and looking at content of other people, are also likely to compare themselves to the people they see in the content (Burnell et al., 2019).

On a platform like Instagram, upward social comparison is a common phenomenon, because due to de editability of the content that is shared, a lot of the content is often presented as an idealized image of people's lives, contributing to what is known as the positivity bias

(Faelens et al., 2021; Yau & Reich, 2019). This content can evoke feelings of envy among viewers especially when comparing their lives to the seemingly perfect and desirable lifestyles portrayed on Instagram. Envy is a negative emotion that arises when people see others enjoying possessions or lifestyles that they desire for themselves (Smith & Kim, 2007). It involves a sense of lining and often resentment towards those who have what one lacks (Smith & Kim, 2007). This emotion can lead to feelings of inferiority and dissatisfaction with one's own circumstances which can lead to a reduction in life satisfaction (Krasnova et al., 2013).

Furthermore, people's self-esteem may influence the level of envy that people can experience after seeing content. Previous studies have shown that individuals' responses to social comparisons are influenced by their level of self-esteem (Jones & Buckingham, 2005; Van Tran, 2023). These effects are attributed to the qualities associated with self-esteem. Individuals with high self-esteem, characterized by a secure sense of self-worth and confidence, are less likely to experience feelings of threat or inferiority when faced with upward comparisons (Heatherton & Polivy, 1991). In contrast, those with low self-esteem are more susceptible to feelings of inadequacy or inferiority when comparing themselves to others. These findings suggest that self-esteem may also influence the feeling of envy when upward social comparison occurs.

However, the dynamics of such comparisons may vary contingent upon the nature of the relationship with the individuals being compared. Prior research has shown that people are happier to see positive content from close peers, who are defined as peers you hang out with on a regular basis, than from distant peers, who are defined as peers that you do not hang out with (Lin & Utz, 2015). This difference can be explained by a lower level of envy that occurs when seeing positive content of close peers, compared to distant peers (Lockwood et al., 2004; Lin & Utz, 2015). These findings suggest that the emotional impact of social comparison may vary

depending on the type of relationship individuals have with the person they are comparing themselves to, likely due to differing levels of envy.

In a context where Instagram users frequently follow not only peers but also influencers it is interesting to take this group into account as well. Influencers often project an image of an aspirational lifestyle, which can intensify feelings of envy and impact life satisfaction (Dinh & Lee, 2021; Schreurs et al., 2022). In essence, influencers are strangers for their followers, but their pervasive presence and the personal nature of their content can lead to the development of parasocial relationships, which are one-sided relationships where individuals feel a sense of intimacy and connection with influencers despite the lack of mutual interaction (Yuan & Lou, 2020).

Given the distinct nature of relationships with close peers, distant peers and influencers, this study aims to examine potential differences in upward social comparison with these three reference groups and its relationship with life satisfaction with envy as a possible mediator and self-esteem as possible moderator. Comparing these three groups is particularly interesting because they represent varying levels of personal connection and social distance. Close peers involve regular interactions and established relationships, leading to potentially less threatening and more positive social comparison (Lin & Utz, 2015). In contrast, relationships with distant peers are related with minimal interaction, possibly leading to more competitive and less favorable comparisons (Lin & Utz, 2015). Lasty, influencers have the potential to create parasocial relationships with their followers which could lead to less negative feelings after social comparison, but they do show off an idealized life that could provoke feelings of envy very strongly (Dinh & Lee, 2021; Schreurs et al., 2022; Yuan & Lou, 2020).

To examine if upward social comparison has different effects for these different reference groups the following research question was investigated: *"What is the relationship of upward social comparison with different types of people on Instagram with life-satisfaction of young adults, and how does envy mediate this relationship?"* To investigate the potential moderated effect of self-esteem on the mediating effect the following sub question is compiled: *"Is there a moderating effect of self-esteem on the relationship between upward social comparison with influencers, close peers and distant peers and envy?"* By addressing these research questions, it is aimed to not only contribute to the extant literature on social media and life satisfaction but also to offer insights into the nuanced dynamics of social comparison within the digital realm.

2. Theoretical framework

2.1 Life satisfaction and social media

Life satisfaction is a crucial component of subjective well-being (Diener et al., 1999). It refers to individuals' overall evaluation of their lives based on their own standards and values (Diener et al., 1985). With the pervasive influence of social media platforms like Instagram nowadays, which offer a constant stream of curated images and experiences, there is a growing interest in understanding how social media use relates to individuals' life satisfaction (Kross et al., 2013; Verduyn et al., 2017). Prior research has shown that social media use has a positive impact on depression, stress and anxiety (Lepp et al., 2014; Lin et al., 2016; Samaha & Hawi, 2016). These factors all negatively influence people's life satisfaction (Lepp et al., 2014; Lin et al., 2016; Samaha & Hawi, 2016).

Studies by Blachnio et al. (2016), Kross et al. (2013), and Satici and Uysal (2015) have investigated the direct relationship between social media use and life satisfaction, consistently finding that increased social media usage is associated with decreased life satisfaction. This negative correlation can be explained by the prevalence of upward social comparison on social media platforms. Chou and Edge (2012) discovered that individuals who utilized Facebook for longer periods or checked the platform with higher frequency tended to believe that others were happier than themselves, a perception potentially indicative of diminished life satisfaction. Indicating that social media use frequency has a positive correlation with consuming idealized content that can lead to upward social comparison (Festinger, 1954; Schreurs et al., 2022). In the research conducted by Denti et al. (2012), it was observed that exposure to idealized representations of life on Facebook was associated with decreased levels of life satisfaction which could be explained by upward social comparison. These findings suggest that upward social comparison in social media platforms negatively influences people's life satisfaction.

2.2 Social comparison on Instagram

On social media platforms like Instagram, where users are inundated with curated images and lifestyles of others, individuals frequently engage in social comparison, particularly with those they perceive as more successful or attractive, which is called upward social comparison (Hwang, 2019; Vogel et al., 2014). Social Comparison Theory, as proposed by Festinger in 1954, provides insights into why people engage in comparing themselves to others. According to the theory, individuals have a natural desire to assess themselves by evaluating their opinions and abilities in relation to others (Festinger, 1954). Consequently, people often engage in comparing

themselves to others to appraise their own progress and potential for improvement (Festinger, 1954).

While Social Comparison Theory explains why people are prone to comparing themselves to others in general, Uses and Gratifications Theory (Katz et al., 1973) provides a comprehensive framework for understanding why individuals are inclined to compare themselves to others on social media platforms such as Instagram. According to this theory, people actively seek out media to fulfill specific needs, ranging from entertainment to social interaction and self-expression (Katz et al., 1973). On Instagram, users may engage in social comparison to satisfy various psychological and social needs like gaining self-efficacy (LaRose et al., 2001). Firstly, individuals may seek validation and affirmation of their self-worth by comparing themselves favorably to others, thereby boosting their self-esteem and confidence (Collins, 1996). Moreover, social comparison on Instagram facilitates a sense of social belonging, as users seek to align themselves with perceived norms and ideals within their social circles or communities (Collins, 1996). Additionally, comparison with others may serve as a source of aspiration, motivating individuals to strive for personal growth and achievement (Collins, 1996). By looking at social media content and comparing themselves to others, users meet their needs for validation, social connection, and aspiration. This highlights that, based on the Uses and Gratifications Theory, social comparison can be a motivation for people to use Instagram. Based on these findings and theories the following hypotheses are proposed:

H1a: Upward social comparison with influencers on Instagram is associated with lower levels of life satisfaction.

H1b: Upward social comparison with close peers on Instagram is associated with lower levels of life satisfaction.

H1c: Upward social comparison with distant peers on Instagram is associated with lower levels of life satisfaction.

2.3 Instagram and the positivity bias

On Instagram a lot of idealized content is posted (Bell, 2019). This phenomenon is called the positivity bias (Schreurs et al., 2022). This bias stems from the platform's characteristics, including the editability, selectivity, and asynchronous nature of the content that is posted on Instagram (Schreurs et al., 2022). Because of these characteristics, people can create an idealized image of themselves and control their self-presentation (Schreurs et al., 2022). Because of this, a lot of Instagram users present themselves in a good and fit appearance or flaunt with material possessions or immaterial experiences like vacations (Bell, 2019). This idealized presented content can make people look superior and looking at this content can cause upward social comparison (Festinger, 1954; Schreurs et al., 2022). According to Festinger's Social Comparison Theory (1954), individuals naturally evaluate themselves by comparing their attributes, abilities, and achievements to those of others. Consequently, exposure to idealized content on Instagram may trigger upward social comparison, as users measure their own lives against the seemingly flawless portrayals of others, potentially leading to feelings of dissatisfaction or inferiority (Vogel et al., 2014). In essence, the abundance of idealized content on Instagram contributes to a culture of comparison and competition, shaping users' perceptions and behaviors within the digital realm.

2.4 Upward social comparison and envy

A possible mediator in the relationship between upward social comparison and life satisfaction is envy. Envy, defined as a negative emotion arising from the perception of others possessing desired possessions or qualities, is a common response to upward social comparison (Smith & Kim, 2007). Cognitive appraisal theories, such as those proposed by Frijda (1986) and Roseman (1996), suggest that emotions stem from our interpretations of situations. When individuals engage in upward social comparison and perceive themselves as inferior to others, they may experience envy as a result (Charoensukmongkol, 2017; Lim & Yang, 2015; Lim & Yang, 2019). This positive relationship between upward social comparison and envy underscores the mediating role of envy in the association between social comparison and life satisfaction. Research indicates that prolonged experiences of envy, particularly in the context of social media use, can lead to decreased life satisfaction and mental health issues, including depression (Krasnova et al., 2013; Briki, 2018). Krasnova et al. (2013) demonstrated that envy mediates the negative relationship between passive Facebook use and life satisfaction, suggesting a similar mechanism may operate on Instagram given the similarity of content shared on both platforms.

2.5 Upward social comparison with close peers and distant peers

Multiple studies have explored the nuances of upward social comparison, particularly in the context of relationships with close peers and distant peers (Fardouly & Vartanian, 2015; Lin & Utz, 2015; Lockwood et al., 2004; Lubbers et al., 2009). Wilcox & Stephen (2013) found that people on social media compare themselves mostly with close friends. This finding is based on Social Comparison Theory that suggests that people are more likely to compare themselves with people that are similar to them, such as the same age or sex (Festinger, 1954). When comparing

more to close peers than distant peers, you could say that the relationship between upward social comparison with close peers and life satisfaction is stronger than the relationship between upward social comparison with distant peers and life satisfaction.

However, other studies found that comparing with close friends leads to less negative feelings like envy than comparing with distant peers (Lockwood et al., 2004; Lin & Utz, 2015). Lockwood et al. (2004) found that the closeness of a relationship moderates the impact of upward social comparison, with closer relationships exhibiting a less negative response to comparison. Lin and Utz (2015) studied emotional responses after looking at content of close and distant friends on Facebook. They found that the closeness of the relationship between the individual and the person who posted the content, known as tie strength, moderates the emotional responses. In other words, individuals are more likely to experience happiness rather than envy when they have closer relationships with the content creators on social media platforms.

The findings from Lockwood et al. (2005) and Lin and Utz (2015) suggest that the closeness of relationships on social media platforms like Instagram or Facebook influences how individuals respond to upward social comparison. Specifically, closer relationships tend to mitigate the negative impact of comparison, resulting in a less negative emotional response, like envy. Building upon these findings, we can hypothesize that upward social comparison with close peers has a less negative relationship with life satisfaction compared to upward social comparison with distant peers. This relationship may be mediated by envy, with individuals experiencing less envy when comparing themselves to distant peers, leading to a less negative relationship with life satisfaction. Therefore, the following hypothesis is proposed:

H2a: The relationship between upward social comparison with close peers and life satisfaction is weaker than the relationship between upward social comparison with distant peers and life satisfaction, explained by a weaker mediating effect of envy.

2.6 Upward social comparison with influencers

In addition to peer comparisons, individuals are likely to engage in upward social comparison with influencers on Instagram, whose content meticulously curated lives often project an aura of perfection and success (Dinh & Lee, 2021). Influencers are defined as online celebrities that post content about their personal lives and promote products and services of brands that suit their content (Dinh & Lee, 2021). They often have a lot of followers and post content about their lives on a regular basis. Because of their main goal to influence their followers to buy certain products or services from certain brands, they often receive a lot of luxury products or vacations to the most beautiful places in exchange for content (Bell, 2019). Therefore, their lives look mostly perfect (Dinh & Lee, 2021; Schreurs et al., 2022). This along with the positivity bias on Instagram makes followers very likely to upward social comparison with influencers.

Interestingly, followers typically do not have personal relationships with influencers, and could be seen as strangers. However, the frequent exposure to influencers' content can lead to a development of parasocial relationships (PSR) (Yuan & Lou, 2020). A parasocial relationship, also known as PSR, is a one-sided social-emotional connection between a media persona and its audience (Yuan & Lou, 2020). Receiving valuable information from an influencer, having social attraction, like similarities and compatibility, and physical attraction are factors that make the parasocial relationship between influencers and followers feel stronger (Su et al., 2021). Unlike

traditional celebrity-fan relationships, influencers have the ability to interact directly with their

followers through social media platforms, potentially strengthening the perceived connection

(Yuan & Lou, 2020). The perceived closeness established through parasocial relationships with

influencers may surpass that of relationships with distant peers. Consequently, followers might

experience less envy when viewing influencer content compared to content from distant peers.

This highlights the potential for parasocial connections to mitigate feelings of envy and suggests

a nuanced impact of social comparison on emotional experiences in online contexts. Therefore, it

is hypothesized that the relationship between upward social comparison with influencers and life

satisfaction is weaker than the relationship between upward social comparison with distant peers

and life satisfaction.

H2b: The relationship between upward social comparison with influencers and life

satisfaction is weaker than the relationship between upward social comparison with distant peers

and life satisfaction, explained by a weaker mediating effect with envy.

2.7 Self-esteem as moderating variable

In addition to the mediating effect of envy in the relationship of upward social

comparison and life satisfaction, a possible moderating effect of self-esteem could be found

between upward social comparison and envy. In prior research, moderating effects of self-esteem

on social comparison have been found (Jones & Buckingham, 2005; Van Tran, 2023). These

effects can possibly be explained by the characteristics of self-esteem. Individuals with high self-

esteem may have a more secure sense of self-worth and confidence (Heatherton & Polivy, 1991).

As a result, they may be less likely to feel threatened or inferior when engaging in upward social

comparison. In contrast, individuals with low self-esteem may be more prone to feelings of

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inadequacy or inferiority when comparing themselves to others (Heatherton & Policy, 1991).

Besides that, individuals with high self-esteem may have more realistic and positive self-comparison standards (Wood, 1989). They may be less likely to engage in upward social comparison with unrealistic or unattainable standards, thereby reducing the likelihood of experiencing envy. Conversely, individuals with low self-esteem may set excessively high standards for themselves, leading to greater dissatisfaction and envy when comparing themselves to others. Therefore, the question arises if these implications for self-esteem on upward social comparison will have a moderating effect on envy, and thus influence the relationship between upward social comparison and life satisfaction.

RQ2: Is there a moderating effect of self-esteem on the relationship between upward social comparison with influencers, close peers and distant peers and envy?

Based on the literature review and the established hypotheses, the following theoretical model is constructed (Figure 1).

Figure 1.

Theoretical model of upward social comparison on Instagram and life satisfaction
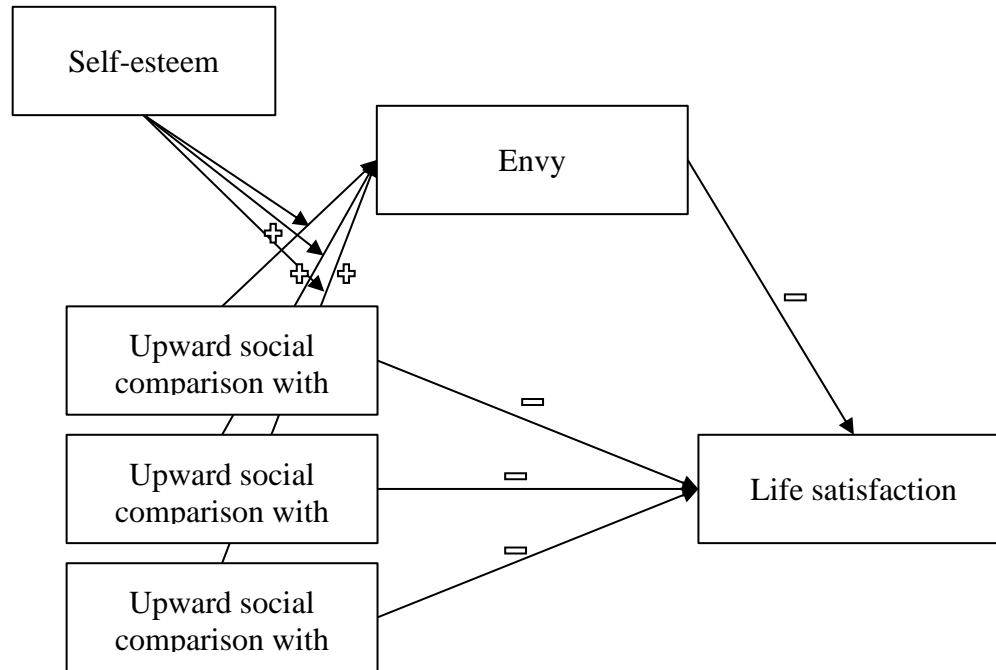
3. Method

3.1 Study design

    To test the hypotheses and address the research question, a survey study was conducted in Qualtrics (See appendix). Utilizing a survey made it feasible to assess participants' social comparison with peers and influencers they actually follow on Instagram. Within this survey, items and scales based on previous literature were employed to measure participants' Instagram use frequency, upward social comparison with different types of people, self-esteem, envy, and life satisfaction. Upward social comparison with influencers, close peers, and distant peers were considered as the independent variables in this study. The dependent variable in this study was life satisfaction, with envy serving as mediating variable between upward social comparison and

life satisfaction. Self-esteem was added as a possible moderator between upward social

comparison and envy. Instagram use frequency was added as a control variable, as previous

research indicated that Instagram use frequency influences the level of social comparison

(Burnell et al., 2019). Besides Instagram use frequency, exposure to content of influencers, close

peers and distant peers was considered, as well as social comparison in general with the three

distinct social reference groups (influencers, close peers and distant peers).

3.2 Participants

The largest group of Instagram users are people in the age group of 18-35 years old

(Statista, 2024). That is why the survey was spread around young adults in this age range. Using

Instagram was the only other requirement to be able to participate. People were informed about

these requirements before entering the survey and screening questions will be asked at the

beginning of the questionnaire to be sure all respondents comply with the requirements. When

respondents did not meet all requirements for participating, they were sent to the end of the

survey and thanked for their willingness to participate. Based on research by Schönbrodt &

Perugini (2013) who found in their research on stabilization of correlations that to achieve a

stable correlation for a typical survey study, a sample size of 250 participants is mostly accurate

and reliable (Schönbrodt & Perugini, 2013). Aiming to achieve a sample size of at least 250

participants, social media and snowball sampling was utilized.

In total there were 368 respondents who started the survey. After filtering people who did

not finish all the questions or did not meet the requirements a sample size of 186 participants was

left. The age of the participants was between 18 and 35 years old ($M = 24.18$, $SD = 3.92$). As for

the gender the sample consisted of 58 men (31.2%), 126 women (67.7%) and two participants

preferred not to say what their gender was (1.1%). 181 participants were Dutch (97.3%) two

participants were Belgian (1.1%), one participant was German (0.5%), and one participant was

Indian (0.5%). Looking at educational level, 53 participants were only secondary educated

(28.5%), 15 participants finished vocational education (MBO) (8.1%), 42 participants finished

higher vocational education (HBO) (22.6%), 43 participants finished a bachelor's degree

(23.1%), and 33 participants finished a master's degree (17.7%).

3.3 Measures

3.3.1 Life-satisfaction

Life-satisfaction was measured with the 5-item Satisfaction With Life Scale (SWLS)

conducted by Diener et al. (1985). With a 5-point Likert scale (1 = strongly disagree, 5 =

strongly agree) participants were asked to respond to statements like: "In most ways my life is

close to my ideal" and "If I could live my life over, I would change almost nothing". The

Cronbach's alpha of this scale was $\alpha = .85$ and therefore confirmed to be reliable.

3.3.2 Social comparison

To measure social comparison with influencers, close peers, and distant peers, three

scales of items based on Gibbons & Buunk (1999) were developed. For this study, the items

were modified by adding context-specific phrases such as 'with influencers' to tailor them

appropriately. For example, the item from Gibbons and Buunk (1999): "I often compare how my

loved ones are doing with how others are doing", was modified into the item: "I often compare

how I am doing with how influencers on Instagram are doing". Not all items from Gibbons and

Buunk's (1999) scale were suitable for the recent study. Therefore, the items "I often try to find

out what others think who face similar problems as I face" and "I always like to know what others in a similar situation would do" were excluded from the survey in this study.

For influencers, items such as "I often compare how I am doing with how influencers are doing", "I always pay a lot of attention to how I do things compared to how influencers on Instagram do things" and "If I want to find out how well I have done something, I compare what I have done with how influencers have done it" were included. These items were measured on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree) to gauge the level of social comparison with influencers. The Cronbach's alpha of the modified scale was α = .82 and therefore considered reliable.

Regarding close peers, the same scale was used, but instead of 'with influencers', 'with close peers' was written. So, for example, items like: "I often compare how I am doing socially (e.g. social skills, popularity) with close peers", "I am not the type of person who compares often with close peers" and "I often compare myself with close peers about mutual opinions and experiences" were utilized. These were also measured on the same 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). The Cronbach's alpha of the modified scale was α = .86 and therefore considered reliable.

For distant peers, the same scale was used again, but then rephrased with 'distant peers' instead of 'influencers' or 'close peers'. So, for example, items like: "If I want to learn more about something, I try to find out what distant peers think about it" and "I never consider my situation in life relative to that of distant peers" were utilized. This scale also used the 5-point Likert scale measurement (1 = strongly disagree, 5 = strongly agree). The Cronbach's alpha of the modified scale was α = .86 and therefore considered reliable.

3.3.3 Upward social comparison

To check whether people compare themselves upwardly with others, one item was used for each group. This item was used as the independent variable with the social comparison scales as control variables. With a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree) participants had to indicate to what extent they agreed with the following items: "When comparing myself to influencers, I mostly focus on influencers who are better off than me", "When comparing myself to close peers, I mostly focus on influencers who are better off than me" and "When comparing myself to distant peers, I mostly focus on influencers who are better off than me" (Vogel et al., 2014).

3.3.4 Content exposure

To measure how often participants are confronted with content of influencers, close peers or distant peers on Instagram it was asked how often they saw content of these groups while scrolling through Instagram. Using an 5-point answer scale that ranged from 'never' to 'often', participants had to indicate how often they saw this content for each group separately by answering the following questions: "How often do you see content from influencers while scrolling through Instagram?", "How often do you see content from close peers while scrolling through Instagram?" and "How often do you see content from influencers while scrolling through Instagram?"

3.3.5 Self-esteem

Self-esteem was measured with a 20-item scale from Heatherton & Polivy (1991) based on a 5-point Likert scale (1 = not at all, 5 = extremely). This measure assesses self-esteem in

three domains. The first domain, performance, is measured using items such as "I feel confident about my abilities", "I feel frustrated or rattled about my performance" and "I feel that I am having trouble understanding things that I read". The second domain, social, is me measured using items such as "I am worried about whether I am regarded as a success or failure", "I feel self-conscious" and "I am worried about what other people think of me". Finally, the third domain, appearance, is measured with items such as "I feel that others respect and admire me", "I am dissatisfied with my weight" and "I feel good about myself" measured participants'. The Cronbach's alpha of this scale showed a high internal reliability of α = .90.

3.3.6 Envy

Envy was measured using an 8-item scale based on the Dispositional Envy Scale (DES; Smith et al., 1999). The DES is a widely used tool for assessing envy, focusing on feelings of inferiority, resentment, and hostility. To tailor the scale to this study, which examines envy experienced while scrolling through Instagram, the items were modified by adding the phrase 'when scrolling through Instagram'. For example, the item "Feelings of envy constantly torment me" was rephrased into "Feelings of envy constantly torment me when scrolling through Instagram". Participants responded to these items on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). This adaptation ensures the scale specifically measures envy in the context of Instagram use. After revising the scale, the Cronbach's alpha was calculated and confirmed that the revised scale was reliable with an alpha of α = .87.

3.3.7 Instagram use frequency

To measure the participants' Instagram use frequency as a control variable, participants were asked to indicate the amount of time they spend on Instagram daily in minutes, broken down into weekdays and weekend days. The answer options ranged from less than 15 minutes to more than 4 hours.

3.4 Procedure

The survey was distributed over a period of 4 weeks. Potential participants were recruited via social media and through snowball sampling. Before commencing the survey, participants were required to read and sign an informed consent form, which outlined the purpose of the study, ensured their anonymity, and explained the data storage procedures. Subsequently, participants were asked demographic questions to collect information about their gender, nationality and level of education and filter out individuals who did not fit the target population criteria. Participants who met the target population criteria proceeded with the survey, responding to scales related to Instagram usage, upward social comparison, envy, self-esteem, and life satisfaction. Upon completion of the questionnaire, participants received a debriefing outlining the nature of the study in which they had participated.

3.5 Statistical analysis

To perform the analysis to test all hypotheses IBM SPSS Statistics (version 28) together with PROCESS (Hayes, 2017) were used. To test the complete model, and with that all hypotheses, Hayes's PROCESS model 7 was used. This model tests a moderated mediation effect that is equal to the proposed model of this study. The test gives an overview of all possible

direct and indirect effects and is therefore selected to test the complete

model.

4. Results

4.1 Descriptive statistics

Table 1 presents the descriptive statistics for the dependent, independent and control variables that are concluded in the analysis (N = 186). Firstly, life satisfaction is varied among participants, but generally positive (M = 3.50, SD = .84). Secondly, it is notable that people mostly compare upwardly with influencers (M = 3.59, SD = .84), compared to close peers and distant peers. This difference was tested with repeated measures ANOVA and found to be significant ($p < .001$). However, for social comparison in general, it is noted that people mostly compare themselves to close peers (M = 3.30, SD = .81). This difference was also measured with repeated measures ANOVA and found to be significant ($p = < .001$). Self-esteem was measured relatively high in general (M = 3.56, SD = .60). The level of exposure to content of influencers, close peers and distant peers are all relatively high. It could be concluded that people are mostly exposed to the content of influencers (M = 4.09, SD = 1.05). These descriptive statistics provide an overview of the central tendencies and variability of the key variables in the study, which are crucial for understanding the context of the subsequent analyses.

Tabel 1

Descriptive statistics

Variable	*n*	*M*	*SD*	Min	Max
Life satisfaction	186	3.50	.84	1.00	5.00
Upward SC with influencers	186	3.59	.84	2.00	5.00
Upward SC with close peers	186	2.94	1.15	1.00	5.00
Upward SC with distant peers	186	2.50	1.24	1.00	5.00
Envy	186	2.07	.79	1.00	4.25
Self-esteem	186	3.56	.60	1.50	4.70
SC with influencers	186	2.10	.73	1.00	3.88
SC with close peers	186	3.30	.81	1.00	4.88
SC with distant peers	186	2.27	.80	1.00	4.00
Exposure to influencer content	186	4.09	1.05	1.00	5.00
Exposure to content of close peers	186	3.92	1.11	1.00	5.00
Exposure to content of distant peers	186	3.52	1.16	1.00	5.00
Instagram use frequency	186	3.36	1.19	1.00	7.00

SC = Social comparison

4.2 Assumption checks

Prior to conducting the moderated mediation analysis, several assumptions were assessed to ensure the validity of the statistical model. These assumptions included the uncorrelatedness of residuals, absence of strong multicollinearity, homoscedasticity, normality and linearity. The

Durbin-Watson statistic of 1.97 suggests that there is no autocorrelation, indicating independent residuals. Therefore, the assumption of uncorrelatedness of residuals is not violated. To assess multicollinearity among predictor variables, variance inflation factors (VIF's) were computed. Not all VIF values were below the commonly accepted threshold of 10 (Field, 2017), suggesting that there is multicollinearity among the predictors. However, these high values were found between the moderating interactions, which means that there is no threat for the assumption. To evaluate homoscedasticity, a scatterplot of studentized residuals against standardized predicted values were examined. Visual inspection of these plots did not reveal any discernible patterns, indicating consistent variance across the range of predicted values. Therefore, the assumption of homoscedasticity is not violated. The assumption of normality was assessed by visual inspection of a histogram and a normal P-P plot of regression standardized residual. The histogram and the normal P-P plot show that the residuals are normally distributed, so the assumption of normality was also not violated. Overall, the diagnostic tests confirmed that the assumptions for conducting the moderated mediation analysis were met, ensuring the validity and reliability of the model's results.

4.3 Moderated mediation analysis

4.3.1 Analysis for upward social comparison with influencers

Firstly, moderated mediation with upward social comparison with influencers as independent variable was tested. With this analysis, hypothesis 1a was tested. It was also tested if self-esteem operates as moderator on the mediating effect. In addition to the main variables, several covariates were included in the analysis to control their potential influence on the outcomes. These covariates were: social comparison with influencers, close peers and distant

peers; exposure to content from influencers, close peers and distant peers; and Instagram use frequency. Among these covariates, several showed significant results as shown in table 2.

The index of moderated mediation was not significant, $b = -.02$, 95% CI [-,07, ,03], meaning that there is no moderated mediation. For the relationship of upward social comparison with influencers and envy there was no significant interaction between upward social comparison with influencers and self-esteem, $b = .07$, t(12, 173) = .63, $p = .5270$, $\Delta R^2 = .0016$. For the full regression see table 2. The relationship of envy to life satisfaction was significant, $b = -.27$, t(11, 174) = -3.29, $p < .05$. The direct effect from upward social comparison with influencers to life satisfaction was not significant, b = -.01, t(11, 174) = -.14, p = .880. For the full regression results see table 3.

Table 2

Regression results for the moderated mediation model of upward social comparison with influencers with envy as mediator and self-esteem as moderator

Variable	*b*	SE	t	*p*
Upward SC with influencers	-.16	.37	-.42	.6785
Self-esteem	-.65	.39	-1.68	.0955
Upward SC with influencers X self-esteem	.07	.10	.63	.5270
Upward SC with close peers	.01	.05	.15	.8806
Upward SC with distant peers	.04	.05	.74	.4590
SC with influencers	.20	.08	2.45	.0151
SC with close peers	-.02	.08	-.24	.8088
SC with distant peers	.15	.09	1.56	.1204
Exposure to influencer content	.04	.05	.73	.4690
Exposure to content of close peers	.005	.05	.09	.9284
Exposure to content of distant peers	.04	.06	.74	.4611
Instagram use frequency	.02	.04	.36	.7171

SC = Social comparison

Note. N = 186. Model for the moderated mediation R^2 = 0.3132, $F(12, 173)$ = 6.5739, $p <$ 0.0001.

Tabel 3

Regression results for the direct effects of upward social comparison and its related variables on

life satisfaction

Variable	*b*	SE	t	*p*
Upward SC with influencers	-.01	.07	-.14	.8880
Upward SC with close peers	.10	.06	1.64	.1028
Upward SC with distant peers	.09	.06	-1.49	.1380
Envy	-.27	.08	-3.29	.0012
SC with influencers	.13	.09	1.37	.1709
SC with close peers	-.16	.09	-1.77	.0793
SC with distant peers	.09	.10	-.84	.4006
Exposure to influencer content	.18	.06	3.04	.0028
Exposure to content of close peers	.14	.06	2.41	.0171
Exposure to content of distant peers	-.06	.06	-.91	.3629
Instagram use frequency	-.17	.05	-3.45	.0007

SC = Social comparison

Note. Model for the direct effects R^2 = 0.2371, F(11, 174) = 4.9159, p < 0.0001.

4.3.2 Analysis for upward social comparison with close peers

Secondly, moderated mediation with upward social comparison with close peers as an independent variable was tested. With this analysis, hypothesis 1b was tested. It was also tested if self-esteem operates as moderator on the mediating effect. The same covariates as for the first analysis were used for this analysis, see table 3. The index of moderated mediation was not significant, $b = 0.01$, 95% CI [-.03, .04], providing no evidence for moderated mediation. For the relationship of upward social comparison with close peers with envy there was no significant interaction between upward social comparison with close peers and self-esteem, $b = -.02$, $t(12, 173) = -.29$ $p = .7724$, $\Delta R^2 = .0003$. For the full regression results see table 4. The relationship of envy to life satisfaction was significant, $b = -.27$, $t(11, 174) = -3.29$, $p < .05$. The direct relationship from upward social comparison with close peers to life satisfaction was not significant, $b = .10$, $t(11, 174) = 1.64$, $p = .1028$. For the full regression results see table 3.

4.3.3 Analysis for upward social comparison with distant peers

Lastly, moderated mediation with upward social comparison with distant peers as an independent variable was tested. With this analysis, hypothesis 1c was tested, as well as the potential moderated effect of self-esteem. Again, the same covariates were used, see table 4. The index of moderated mediation was not significant, $b = .01$, 95% CI [-.02, .05], meaning that there is no moderated mediation. For the relationship of upward social comparison with distant peers to envy there was no significant interaction between upward social comparison with distant peers and self-esteem, $b = -.03$, $t(12, 173) = -.53$, $p = .5988$, $\Delta R^2 = .0011$. For the full regression results see table 5. The relationship of envy to life satisfaction was significant, $b = -.27$, $t(11, 174) = -3.29$, $p < .05$. The direct relationship from upward social comparison with distant peers to life

satisfaction was not significant, $b = -.09$, $t(11, 174) = -1.49$, $p = .1380$. For the full regression results see table 3.

Table 4

Regression results for the moderated mediation model of upward social comparison with close peers with envy as mediator and self-esteem as moderator

Variable	b	SE	t	p
Upward SC with close peers	.08	.25	.31	.7587
Self-esteem	-.35	.24	-1.44	.1510
Upward SC with close peers X self-esteem	-.02	.07	-2.9	.7724
Upward SC with influencers	.08	.06	1.27	.2056
Upward SC with distant peers	.04	.06	.76	.4475
SC with influencers	.20	.08	2.41	.0168
SC with close peers	-.02	.08	-.26	.7928
SC with distant peers	.14	.09	1.48	.1396
Exposure to influencer content	.04	.05	.75	.4544
Exposure to content of close peers	.01	.05	.11	.9132
Exposure to content of distant peers	.04	.06	.77	.4449
Instagram use frequency	.02	.04	.36	.7165

SC = Social comparison

Note. N = 186. Model for the moderated mediation R^2 = 0.3119, F(12,173) = 6.5354, p < 0.0001.

Table 5

Regression results for the moderated mediation model of upward social comparison with distant

peers with envy as mediator and self-esteem as moderator

Variable	*b*	SE	t	*p*
Upward SC with distant peers	.16	.23	.70	.4879
Self-esteem	-.31	.21	-1.49	.1380
Upward SC with distant peers X self-esteem	-.03	.06	-.53	.5988
Upward SC with influencers	.08	.06	1.27	.2050
Upward SC with close peers	.003	.05	.05	.9567
SC with influencers	.20	.08	2.43	.0163
SC with close peers	-.02	.08	-.20	.8437
SC with distant peers	.13	.09	1.43	.1536
Exposure to influencer content	.04	.05	.76	.4497
Exposure to content of close peers	.01	.05	.15	.8779
Exposure to content of distant peers	.04	.06	.74	.4591
Instagram use frequency	.02	.04	.35	.7241

SC = Social comparison

Note. N = 186. Model for the moderated mediation R^2 = 0.3127, $F(12,173)$ = 6.5589, $p <$

0.0001.

4.4 Comparison of moderated mediation analysis

Given that none of the moderated mediation analysis provided significant findings, the comparison between upward social comparison with close peers and upward social comparison with distant peers did not give a significant difference. Therefore, hypothesis 2a, which suggested a weaker relationship between upward social comparison with close peers and life satisfaction compared to distant peers explained by a weaker mediating effect of envy, was not supported. Similarly, the comparison between upward social comparison with influencers and upward social comparison with distant peers did not show significant differences. Thus, hypothesis 2b, suggesting a weaker relationship between upward social comparison with influencers and life satisfaction compared to upward social comparison with distant peers, due to a weaker mediating effect of envy, was also not supported.

5. Discussion

5.1 Interpretation of results

The current study built upon prior research indicating that life satisfaction is significantly influenced by social media usage (Marttila et al., 2021). Previous studies found that upward social comparison on Instagram could lead to feelings of envy, which negatively affected people's life satisfaction (Krasnova et al., 2013; Smith & Kim, 2007). The emotional outcomes of these comparisons varied depending on the nature of the relationship with the individuals being compared; positive content from close peers was generally better received than similar content from distant peers (Lin & Utz, 2015). This study aimed to extend these findings by

examining how upward social comparison with close peers, distant peers, and influencers on Instagram is related to the life satisfaction of young adults, with envy as a mediating factor and self-esteem as a potential moderator. Several hypotheses were tested using a moderated mediation analysis, but none of the results supported the proposed hypotheses.

Hypotheses 1a, 1b and 1c, posited that upward social comparison with influencers, close peers and distant peers is associated with lower levels of life satisfaction (Blachnio et al., 2016; Chou & Edge, 2012; Denti et al., 2012; Kross et al., 2013; Satici & Uysal, 2015; Schreurs et al., 2022). Contrary to prior research, these hypotheses were not supported by the results of the current study. It could be possible that Instagram users are aware of the positivity bias on Instagram and already protect themselves for negative effects by relativizing the idealized content they see on this platform (Peluchette & Karl, 2009). This awareness could influence the relationship between upward social comparison and life satisfaction and explain why no significant effect was found. In the study by Denti et al. (2012), a significant negative relationship between upward social comparison and life satisfaction was found, but this relationship did not apply to men, well-educated, and well-paid participants. The present study had a majority of highly educated participants, which may explain why no significant effect was found.

Subsequently, it was expected to find a mediating effect of envy on the relationship of upward social comparison with influencers, close peers and distant peers with life satisfaction. The analysis did not find a mediating effect of envy on this relationship. This is surprising, because several studies did support this hypothesis (Briki, 2018; Charoensukmongkol, 2017; Krasnova et al., 2013; Lim & Yang, 2015; Lim & Yang, 2019). Again, the awareness of

idealized content on Instagram could explain why no significant mediating effect was found (Peluchette & Karl, 2009). This awareness could create resistance for the negative feelings of envy that can occur from the idealized content.

Hypothesis 2a posited that upward social comparison with close peers would have a weaker relationship with life satisfaction compared to distant peers, due to a weaker mediating effect of envy (Lin & Utz, 2015; Lockwood et al., 2004). However, the analysis found no significant mediation effect for either independent variable, thus failing to support this hypothesis. Similarly, Hypothesis 2b anticipated that upward social comparison with influencers would correlate weaker with life satisfaction than with distant peers, explained by a weaker effect of envy. This expectation was based on the potential for parasocial relationships with influencers (Su et al., 2021; Yuan & Lou, 2020). Again, no significant relationships were found for upward social comparison with influencers or upward social comparison with distant peers, so this hypothesis was rejected as well.

Lasty, it was tested if self-esteem was a possible moderator in the relationship between upward social comparison with influencers, close peers, and distant peers and envy. No supporting results were found. These results can be explained by the dual nature of upward social comparison. The study of Collins (1996) found that while upward social comparison is often ego-deflating, people also compare themselves upwardly to others for self-improvement and boosting their self-assessments and positive self-regard. This suggests that when individuals are motivated by these positive aspects, upward social comparison may not negatively impact their self-esteem and could even enhance it. Therefore, the absence of a significant moderating effect of self-esteem on the relationship between upward social comparison and envy could be

explained by these mixed motivations, which was not considered for this study. Future research should consider including these motivations to better understand the dynamics at play.

Despite the non-significant findings in the moderated mediation analyses, looking at the coefficients provides a small insight into the potential differences between the effects of upward social comparison with influencers, close peers and distant peers. The analysis suggests that upward social comparison with influencers tends to have a more negative impact on life satisfaction compared to close and distant peers. Meaning that comparing upwardly with influencers on Instagram potentially is associated with lover levels of life satisfaction as proposed in hypothesis 1a. Contrarily to hypotheses 1b and 1c the descriptive analysis suggests that upward social comparison with close peers and distant peers might have a slightly positive effect on life satisfaction, with distant peers having a slightly larger positive coefficient than close peers. The interaction effect with self-esteem indicates that, particular for upward social comparison with influencers, self-esteem may slightly buffer the negative effects of these comparisons, however these findings are not significant. These descriptive insights are valuable for understanding potential trends that could be further explored in future research with larger sample size.

5.2 Limitations of the study

Several limitations of the present study should be acknowledged. First, the sample size was relatively small (N = 186), which may limit the representativeness of the overall population and thus threaten the generalizability of the findings. This small sample size could also account for the lack of significant results. Due to the limited sample size, the statistical power of the analysis may be insufficient, potentially resulting in the failure to detect true associations

between the variables. Additionally, the sample had a higher proportion of women (67,7%) than men (31.2%) or other identifying people (1.1%), which could introduce gender bias into the results. Another limitation is that the independent variables upward social comparison with influencers, close peers and distant peers were only met using one item and a control scale that tested for social comparison with influencers, close peers and distant peers in general. This may not comprehensively capture the complexity of this construct. These limitations highlight the need for caution when interpreting the findings.

5.3 Implications of the findings and recommendations for future research

Besides the limitation that should be taken into account, this study is an addition to the literature, because it is the first study that made a distinction between upward social comparison with influencers, close peers and distant peers and compared these independent variables with each other. Despite the lack of significant results in this study, the relationship between upward social comparison and life satisfaction and the comparison between influencers, close peers and distant peers remains an important area of research to get a better understanding of social consequences of social media. Future studies should therefore continue to explore the nuanced dynamics of these relationships. The absence of a mediating effect of envy suggests that other factors may influence the relationship between upward social comparison and life satisfaction. Researchers should investigate additional mediators to gain a more comprehensive understanding of this relationship. The lack of support for self-esteem as moderator highlights the need to consider individual differences in future research. Researchers should explore alternative moderators that may influence the relationship between upward social comparison and life satisfaction. Lastly, it is recommended for future research to use an upward social comparison

scale that specifically measures upward social comparison to get a more valid measure of this variable.

6. Conclusion

In conclusion, this study contributes to the existing literature by delving into the nuanced distinctions between upward social comparison with influencers, close peers and distant peers, which has been less explored in prior research. Despite the non-significant findings, this study underscores the importance of considering the multifaceted nature of social media use and their psychological impacts, positively and negatively. The complexity of these interactions and the possible awareness of the positivity bias suggests that simple, direct relationships between variables may not adequately capture the nuanced effects that social media use can have on individuals' life satisfaction. The findings highlight the necessity for future research to explore additional mediators and moderators that may influence the relationship between upward social comparison and life satisfaction. Additionally, refining measurement techniques will enhance the validity and reliability of the findings. Despite its limitations, this study sets ground for future research to explore the complex dynamics of social comparison on social media and the potential differences between upward social comparison with influencers, close peers and distant peers.

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<center>**Appendix**</center>

Survey Social comparison on Instagram

Dear participant,

Welcome to this survey, and thank you for considering participation. This survey is conducted by Roos Hopman, a master student of Business Communication and Digital Media at Tilburg University. Please make sure you have read the following information carefully before starting the survey.

The aim of this survey is to get a better understanding about social comparison on social media. Your participation in this study is very important to gain more information within this subject and very much appreciated.

As a participant, you will be presented different statements related to social comparison on social media. Your task is to answer in all honesty and indicate whether you agree or disagree with each statement. Please note that you must use Instagram and be 18 to 35 years old to be able to contribute to the survey. The survey should take approximately 10-12 minutes to complete.

Participation is entirely voluntary and anonymous. Your responses will remain confidential and

solely used for academic research purposes. All data will be deleted after the study concludes.

If you have any questions or concerns about the study, please contact Roos Hopman at r.h.w.hopman@tilburguniversity.edu. Know that you are always allowed to withdraw your consent without any consequences or providing any explanation.

Thank you for your willingness to contribute to this study.

Sincerely,

Roos Hopman

○ I have read the information above and give consent for participation

○ I do NOT give consent for participation

Thank you for your willingness to fill in this survey. Unfortunately you do not meet the requirements to participate in the study.   I thank you for your time!

Do you use Instagram?

○ Yes

○ No

Thank you for your willingness to fill in this survey. Unfortunately, you do not meet the

requirements to participate in the study.

I thank you for your time!

End of Block: Elimination question

Start of Block: Demographical questions

✳

What is your age in years?

_____

To what gender do you identify?

○ Male

○ Female

○ Non-binary / third gender

○ Prefer not to say

What is the highest educational level that you have finished?

○ No education completed

○ Primary education

○ Secondary education (VMBO, HAVO, VWO)

○ Vocational education (MBO)

○ Higher vocational education (HBO)

○ Bachelors (WO)

○ Masters (WO)

○ Other, namely _____

What is your nationality? (Answer in English)

_____

Page Break —————————————————————————————

Thank you for your willingness to fill in this survey. Unfortunately you do not meet the

requirements to participate in the study.   I thank you for your time!

How many minutes/hours do you spend on Instagram during an average weekday?

○ Less than 15 minutes

○ Between 15 and 30 minutes

○ Between 30 minutes and 1 hour

○ Between 1 and 2 hours

○ Between 2 and 3 hours

○ Between 3 and 4 hours

○ More than 4 hours

How many minutes/hours do you spend on Instagram during an average weekend day?

○ Less than 15 minutes

○ Between 15 and 30 minutes

○ Between 30 minutes and 1 hour

○ Between 1 and 2 hours

○ Between 2 and 3 hours

○ Between 3 and 4 hours

○ More than 4 hours

End of Block: Social media use volume

Start of Block: Level of upward social comparison

In the following statements we ask you about influencers, close peers and distant peers. To make sure you understand the questions well, a short description of each person is given below. Make sure you read these descriptions well and then continue with the questions.

Influencer: An influencer is an online celebrity that posts content about their personal lives and promotes products and services for brands in their content.

Close peer: A close peer is someone who you know personally and hang out with on a regular basis.

Distant peer: A distant peer is someone who you know, but do not hang out with or is not seen as a friend.

How often do you see content from influencers while scrolling through Instagram?

○ Never

○ Rarely (Once in a while when scrolling through Instagram)

○ Occasionally (Several times when scrolling through Instagram)

○ Sometimes (Frequently when scrolling through Instagram)

○ Often (Almost always when scrolling through Instagram)

Please indicate the extent to which you agree with the statements from "strongly disagree" to "strongly agree".

	Strongly disagree	Somewhat what disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I often compare how I am doing with how influencers are doing	○	○	○	○	○
I always pay a lot of attention to how I do things compared to how influencers do things	○	○	○	○	○
If I want to find out how well I have done something, I compare what I have done with how influencers have done it	○	○	○	○	○

I often compare how I am doing socially (e.g. social skills, popularity) with influencers	○	○	○	○	○
I am not the type of person who compares often with influencers	○	○	○	○	○
I often compare myself with influencers about mutual opinions and experiences	○	○	○	○	○
If I want to learn more about something, I try to find out what influencers think about it	○	○	○	○	○
I never consider my situation in life relative to that of influencers	○	○	○	○	○

Please indicate the extent to which you agree with the statements from "strongly disagree" to "strongly agree".

	Strongly disagree	Somewhat what disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
When comparing myself to influencers, I mostly focus on influencers who are better off than me	○	○	○	○	○

Page Break

In the following statements we ask you about influencers, close peers and distant peers. To make sure you understand the questions well, a short description of each person is given below. Make sure you read these descriptions well and then continue with the questions.

Influencer: An influencer is an online celebrity that posts content about their personal lives and promotes products and services for brands in their content.

Close peer: A close peer is someone who you know personally and hang out with on a regular basis.

Distant peer: A distant peer is someone who you know, but do not hang out with or is not seen as a friend.

How often do you see content from close peers while scrolling through Instagram?

○ Never

○ Rarely (Once in a while when scrolling through Instagram)

○ Occasionally (Several times when scrolling through Instagram)

○ Sometimes (Frequently when scrolling through Instagram)

○ Often (Almost always when scrolling through Instagram)

Please indicate the extent to which you agree with the statements from "strongly disagree" to "strongly agree".

	Strongly disagree	Somewhat what disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I often compare how I am doing with how close peers are doing	○	○	○	○	○
I always pay a lot of attention to how I do things compared to how close peers do things	○	○	○	○	○
If I want to find out how well I have done something, I compare what I have done with how close peers have done it	○	○	○	○	○
I often compare how I am doing socially (e.g. social skills, popularity) with close peers	○	○	○	○	○
I am not the type of person who compares often with close peers	○	○	○	○	○

I often compare myself with close peers about mutual opinions and experiences	○	○	○	○	○
If I want to learn more about something, I try to find out what close peers think about it	○	○	○	○	○
I never consider my situation in life relative to that of close peers	○	○	○	○	○

Please indicate the extent to which you agree with the statements from "strongly disagree" to "strongly agree".

	Strongly disagree	Somewhat what disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
When comparing myself to close peers, I mostly focus on close peers who are better off than me	○	○	○	○	○

In the following statements we ask you about influencers, close peers and distant peers. To make sure you understand the questions well, a short description of each person is given below. Make sure you read these descriptions well and then continue with the questions.

Influencer: An influencer is an online celebrity that posts content about their personal lives and promotes products and services for brands in their content.

Close peer: A close peer is someone who you know personally and hang out with on a regular basis.

Distant peer: A distant peer is someone who you know, but do not hang out with or is not seen as a friend.

How often do you see content from distant peers while scrolling through Instagram?

○ Never

○ Rarely (Once in a while when scrolling through Instagram)

○ Occasionally (Several times when scrolling through Instagram)

○ Sometimes (Frequently when scrolling through Instagram)

○ Often (Almost always when scrolling through Instagram)

Please indicate the extent to which you agree with the statements from "strongly disagree" to "strongly agree".

	Strongly disagree	Somewhat what disagree	Neither agree nor disagree	Somewhat agree	Strongly agree

I often compare how I am doing with how distant peers are doing	○	○	○	○	○
I always pay a lot of attention to how I do things compared to how distant peers do things	○	○	○	○	○
If I want to find out how well I have done something, I compare what I have done with how distant peers have done it	○	○	○	○	○
I often compare how I am doing socially (e.g. social skills, popularity) with distant peers	○	○	○	○	○
I am not the type of person who compares often with distant peers	○	○	○	○	○
I often compare myself with distant peers about mutual opinions and experiences	○	○	○	○	○
If I want to learn more about something, I try to find out what distant peers think about it	○	○	○	○	○
I never consider my situation in life relative to that of distant peers	○	○	○	○	○

Strongly disagree Somewhat what disagree Neither agree nor disagree Somewhat agree Strongly agree

	Strongly disagree	Somewhat what disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
When comparing myself to distant peers on Instagram, I mostly focus on distant peers who are better off than me	○	○	○	○	○

The following statements are about your self-esteem. Please indicate how much each statement applies to you using the answer scale ranging from "not at all" to "extremely"

	Not at all	Slightly	Moderately	Very	Extremely
I feel confident about my abilities	○	○	○	○	○

I am worried about whether I am regarded as a success or failure	○	○	○	○	○
I feel satisfied with the way my body looks right now	○	○	○	○	○
I feel frustrated or rattled about my performance	○	○	○	○	○
I feel that I am having trouble understanding things that I read	○	○	○	○	○
I feel that other respect and admire me	○	○	○	○	○
I am dissatisfied with my weight	○	○	○	○	○
I feel self-conscious	○	○	○	○	○
I feel as smart as others	○	○	○	○	○
I feel displeased with myself	○	○	○	○	○
I feel good about myself	○	○	○	○	○
I am pleased with my appearance right now	○	○	○	○	○
I am worried about what other people think of me	○	○	○	○	○
I feel confident that I understand things	○	○	○	○	○
I feel inferior to others at this moment	○	○	○	○	○

I feel unattractive	○	○	○	○	○
I feel concerned about the impression I am making	○	○	○	○	○
I feel that I have less scholastic ability right now than others	○	○	○	○	○
I feel like I'm not doing well	○	○	○	○	○
I am worried about looking foolish	○	○	○	○	○

The following statements are about the emotion of envy. Please indicate the extent to which you agree with each statement from "strongly disagree" to "strongly agree".

	Strongly disagree	Somewhat what disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I feel envy when I scroll through Instagram	○	○	○	○	○

The bitter truth is that I generally feel inferior to others I see on Instagram	○	○	○	○	○
Feelings of envy constantly torment me when scrolling through Instagram	○	○	○	○	○
It is so frustrating to see some people succeed so easily on Instagram	○	○	○	○	○
No matter what I do, envy always plagues me when scrolling through Instagram	○	○	○	○	○
I am troubled by feelings of inadequacy when scrolling through Instagram	○	○	○	○	○
It somehow doesn't seem fair that some people seem to have all the talent	○	○	○	○	○
Frankly, the success of people I see on Instagram makes me resent them	○	○	○	○	○

End of Block: Envy

Start of Block: Life satisfaction

The following statements are about your life satisfaction. Please indicate the extent to which you agree with each statement from "strongly disagree" to "strongly agree".

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
In most ways my life is close to my ideal	○	○	○	○	○
The conditions of my life are excellent	○	○	○	○	○
I am satisfied with my life	○	○	○	○	○
So far I have gotten the important things I want in life	○	○	○	○	○
If I could live my life over, I would change almost nothing	○	○	○	○	○

End of Block: Life satisfaction

This is the end of the survey. Thank you very much for participating in this study.

Before we conclude, I'd like to offer you some detailed insights into the key aspects of this study. Our main goal with this survey was to investigate if upward social comparison has a relationship with life satisfaction and how this relationship is mediated by self-esteem and envy. Besides that, we looked if the person comparing with makes a difference in this relationship. Therefore, we tested the differences between social comparison with influencers, close peers and distant peers.

Your participation has been very helpful to achieve these goals. Thank you for your contribution!

By clicking on the blue button, your answers will be saved.

Ps. For Survey Circle users: Exchange your survey code by clicking on the following link: https://www.surveycircle.com/GSYK-87RC-X5G9-K6S9/

For profilic users: https://app.prolific.com/submissions/complete?cc=C185AUJ4

Or use the code: C185AUJ4