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Exploring the Relationships between Passive Social Media Use and Psychological Well-Being of Young Adults—The Role of Trait Self-Compassion, Motivations, and Upward Social Comparison

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Received: 05 February 2026; Accepted: 30 March 2026; Published: 30 July 2026

ABSTRACT: Objectives: Drawing on the motivational perspective of the social comparison theory and the relevant literature on trait self-compassion, the objective of this research article is to examine that, during young adults' passive social media use, how their trait self-compassion is related to their self-improvement or self-destruction motivations, which in turn are related to their assimilative or contrastive upward social comparison, which correspondingly is related to their positive or negative psychological well-being. **Methods:** the current study administered a cross-sectional survey to American college students who used social media. Participants first reported their trait self-compassion. Afterwards, participants reported that, when they used social media the last time, the frequencies that they passively used social media, their self-improvement and self-destruction motivations, their assimilative and contrastive upward social comparison, and their psychological well-being. **Results:** During passive use of social media, young adults with high trait self-compassion were likely to have more self-improvement (than self-destruction) motivations, which in turn were likely to compare with others more upwardly assimilative (than contrastive), which in turn were likely to have more favorable (than unfavorable) psychological well-being. Conversely, those with more self-destruction (than self-improvement) motivations were likely to compare with others more upwardly contrastive (than assimilative), which in turn were likely to have more unfavorable (than favorable) psychological well-being. **Conclusions:** The current study makes contributions by adding the motivational perspective of the social comparison theory and the relevant literature on trait self-compassion to more comprehensive explain the associations between passive social media use, upward social comparison, and psychological well-being of young adults. Findings could also offer valuable suggestions on promoting the psychological well-being of young adult social media users.

KEYWORDS: Passive social media use; psychological well-being; trait self-compassion; motivations; upward social comparison

1 Introduction

In the current digital era, young adults are the most frequent users of social media [1]. More than 80% of young adults use at least one social media platform, and young adults spend on average more than three hours on social media every day [2,3]. The prevalence of social media use among young adults comes with the increasing research attention on how using social media could affect young adults' psychological well-being [4–6]. For example, research has shown that active social media use (defined as using social media to interact with others via messaging, commenting and etc.) is associated with better psychological well-being of young adults [7–10]. Another form of social media use is problematic

social media use (defined as being addictive to social media to an extent that impairs normal functioning of daily life) [11,12]. Research has demonstrated that young adults using social media problematically (including problematic Facebook use, Instagram use, TikTok use, and YouTube use) are likely to have poorer psychological well-being [11,13–15]. Besides active use and problematic use, another important form of social media use that receives increasing research attention is passive social media use [9,16], which is defined as browsing the social media content posted by other people, with no interaction (for example, without commenting, liking, direct messaging) [1]. Studies have shown that passive use of social media is related to positive or negative psychological well-being of young adults [16,17].

In explaining the positive or negative associations between young adults' passive use of social media and their psychological well-being, researchers have implemented social comparison theory as an important theoretical framework [16,17]. According to social comparison theory, humans possess an innate inclination to compare with others [18]. Therefore, when young adults passively use social media (i.e., when seeing others' content without interactions), they have an inclination to make comparison with others. In addition, this comparison is usually upward. On social media, people usually strategically present themselves to appear to be attractive, accomplished, and superior [16,19]. Thus, on social media, when young adults compare with others, they are making comparisons with those who appear to be better-off and superior. This is called upward social comparison [16].

Furthermore, upward social comparison on social media could be further categorized into two different types—assimilative or contrastive. Assimilative upward social comparison is defined as young adults making comparisons with better-off others to pay attention to how they could be more alike to those better-off others [20,21]. With the mindset that they could achieve the similar accomplishments as those better-off others, young adults who compare with others upwardly assimilative on social media tend to have better psychological well-being [22,23]. Conversely, contrastive upward social comparison is defined as young adults making comparisons with others who are better-off on social media to pay attention to the differences between themselves and those better-off others [20,21]. With the mindset that there are indeed differences and gaps between themselves and those better-off others, young adults who compare with others upwardly contrastive on social media tend to have poorer psychological well-being [23,24].

However, existing research has not yet clearly examined that, when young adults passively use social media, which factors would increase or decrease their likelihood of engaging in the different kinds of upward social comparison (assimilative or contrastive), which in turn correspondingly is related to more positive or negative psychological well-being. In other words, we do not know that, during young adults' passive social media use, for whom and when does upwardly assimilative or upwardly contrastive social comparison more or less likely to happen, which in turn is associated with better or worse psychological well-being.

Apply the motivational perspective of social comparison theory and the relevant literature on trait self-compassion, the purpose of the current study is to test that, during young adults' passive use of social media, how trait self-compassion, self-improvement motivations, and self-destruction motivations are related to young adults' engagement in assimilative or contrastive upward social comparison, which in turn is associated with enhanced or diminished psychological well-being. Specifically, the current study hypothesizes that, during passive social media use, young adults with high trait-self-compassion are likely to have more self-improvement than self-destruction motivations, which in turn are associated with more upwardly assimilative than upwardly contrastive social comparison, which in turn is related to more positive than negative psychological well-being. Conversely, during passive use of social media, young adults with low trait-self-compassion are likely to have more self-destruction than self-improvement motivations,

which in turn are associated with more upwardly contrastive than upwardly assimilative social comparison, which in turn is related to more negative than positive psychological well-being.

Overall, the current study adds the motivational perspective of social comparison theory and the relevant literature on trait self-compassion to expand the theoretical understandings on the associations among passive use of social media, different kinds of upward social comparison, and elevated/diminished psychological well-being of young adults. More importantly, findings of the current study may also offer valuable insight on the preventions and interventions on the psychological well-being of young adult social media users. That is, deeper understandings on the relationships between passive use of social media, different kinds of upward social comparison, and psychological well-being may offer clearer directions on how we could implement potentially effective strategies to promote the psychological well-being of young adult social media users.

1.1 Passive Social Media Use, Trait Self-Compassion, and Motivations of Upward Social Comparison

As reviewed above, when young adults passively use social media, they compare themselves upwardly assimilative or upwardly contrastive. According to the motivational perspective of social comparison theory [25], social comparison is motivated by different underlying motivations. For upward social comparison, existing research identifies two motivations—self-improvement motivations or self-destruction motivations [25]. Self-improvement motivations refer to one's motivations to compare with others for the purpose of improving oneself and becoming a better self [26]. Self-destruction motivations, on the other hand, refer to one's motivations to compare with others for the purpose of criticizing oneself to see how bad one is doing [27]. Therefore, it is likely that, when young adults passively use social media, they have self-improvement or self-destruction motivations, which in turn motivate them to compare with others upwardly assimilative or upwardly contrastive. The key question is, which type of motivations (self-improvement or self-destruction motivations) might young adults have when they passively use social media? Little existing research has examined this question. Drawing on the relevant literature on trait self-compassion [28,29], the current study proposes that the relationships between passive social media use and different motivations (self-improvement/self-destruction motivations) depend on trait self-compassion.

Trait self-compassion refers to the individual differences in terms of responding to personal inadequacies and imperfections with self-acceptance and self-kindness [29,30]. Individuals high in trait self-compassion are more likely to treat their own inadequacies and weaknesses with understanding and kindness, acknowledge that imperfections and failures are part of human nature shared by all human, and actively handle their painful thoughts and emotions without avoiding or dwelling on them [28]. Researchers argue that, for individuals with high trait self-compassion, these aforementioned characteristics could motivate them to improve their own inadequacies and weaknesses [31]. That is, when they face their own inadequacies and imperfections, they have more self-improvement motivations rather than criticize themselves.

Individuals with low trait self-compassion, however, are characterized by being harsh on their own imperfections and inadequacies, thinking that they are the only one who has failures and imperfections and other people do not, and ruminating on their painful thoughts and emotions [28,32]. Research has suggested that individuals with low trait self-compassion are overly harsh on their own imperfections and inadequacies, and tend to have higher levels of self-criticism [29]. Therefore, when individuals with low trait-self-compassion face their own inadequacies and weaknesses, they are more likely to criticize themselves rather than improve themselves.

Based on the evidence above, it is reasonable to expect that when young adults passively use social media, their trait self-compassion is related to their self-improvement/self-destruction motivations. When young adults passively use social media, they see that the lives of others are successful and better-off [16]. Seeing the successful and superior life moments of other people may make young adults realize the imperfections and inadequacies in their own lives. As argued above, for young adults with high trait self-compassion, when they face their own inadequacies and imperfections, they are more motivated to improve themselves than criticize themselves. Therefore, it could be argued that, during passive social media use, young adults with high trait self-compassion are likely to have more self-improvement motivations (than self-destruction motivations). On the other hand, for young adults with low trait self-compassion, when they passively use social media—seeing the superior life moments of other people and realizing the imperfections and inadequacies of their own lives—they are more likely to criticize themselves than think about improving themselves. Thus, when passively using social media, for young adults with low trait self-compassion, they are likely to have more self-destruction motivations (than self-improvement motivations).

1.2 Different Motivations and Different Types of Upward Social Comparison

Self-improvement or self-destruction motivations, in turn, are related to upwardly assimilative or upwardly contrastive social comparison. A few existing studies have examined the relationships between self-improvement/self-destruction motivations and social comparison on social media [27,33]. However, these studies did not conceptualize and measure social comparison as upwardly assimilative or upwardly contrastive [27,33]. Therefore, the relationships between self-improvement/self-destruction motivations and upwardly assimilative/contrastive social comparison on social media remain unclear. The current study further clarifies these relationships.

As proposed above, when young adults passively use social media, for those with high trait self-compassion, they have more self-improvement (than self-destruction) motivations. Having more self-improvement (than self-destruction) motivations, in turn, would be related to doing more upwardly assimilative (than upwardly contrastive) social comparison. That is, if young adults are more motivated to improve themselves (than criticize themselves), they would be likely to pay attention to comparing with those better-off others to see how they can be alike with those better-off others than how they are distinct from those better-off others. Conversely, as proposed above, for those with low trait self-compassion, they have more self-destruction (than self-improvement) motivations. More self-destruction (than self-improvement) motivations, in turn, would be related to more contrastive (than assimilative) upward social comparison. Specifically, if young adults are more motivated to criticize themselves to see how awful they are doing (than improve themselves), they would be likely to pay attention to comparing with those better-off others to see how they are indeed distinct from those better-off others (than how they can be more alike with those better-off others).

1.3 Different Kinds of Upward Social Comparison and Psychological Well-Being

Comparing with others more upwardly assimilative or more upwardly contrastive, in turn, is related to more positive or negative psychological well-being. Findings from existing literature suggest that higher degrees of assimilative upward social comparison is related to more favorable psychological well-being—(1) more positive than negative emotions; (2) more benign than malicious envy; and (3) greater satisfaction with life; higher degrees of contrastive upward social comparison is related to more unfavorable psychological

well-being—(1) more negative than positive emotions; (2) more malicious than benign envy; and (3) decreased satisfaction with life [22,23].

1.4 Summary

In summary, the current study proposes that trait self-compassion moderates the relationships between passive social media use and self-improvement/self-destruction motivations, which in turn are related to assimilative/contrastive upward social comparison, which in turn is related to three components of psychological well-being. For a diagram of the proposed relationships, please see Fig. 1. All hypotheses are also summarized after Fig. 1.

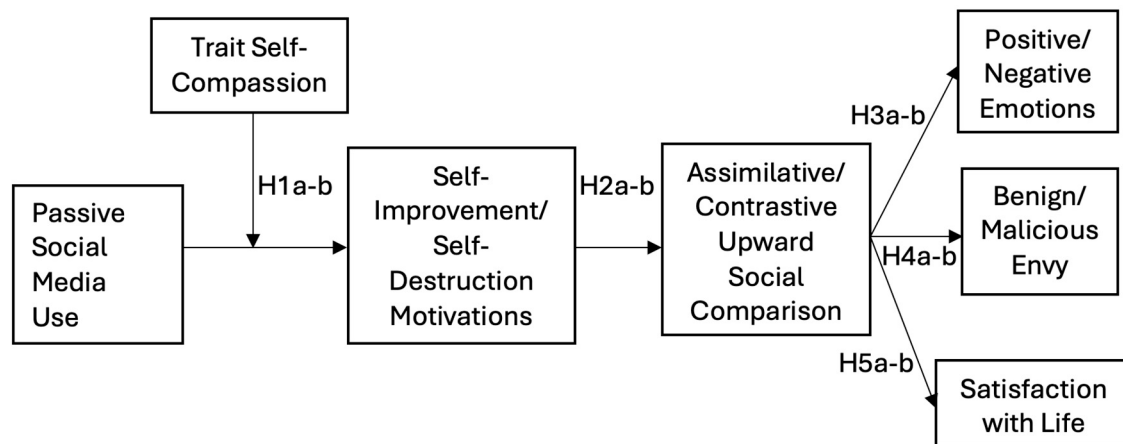


Figure 1: Proposed Relationships between passive social media use and psychological-well-being.

H1a: *The relationships between passive social media use and self-improvement/self-destruction motivations are moderated by trait self-compassion. For young adults with high trait self-compassion, more passive social media use is correlated with more self-improvement (than self-destruction) motivations.*

H1b: *The relationships between passive social media use and self-improvement/self-destruction motivations are moderated by trait self-compassion. For young adults with low trait self-compassion, more passive social media use is correlated with more self-destruction (than self-improvement) motivations.*

H2a: *More self-improvement (than self-destruction) motivations are correlated with more assimilative (than contrastive) upward social comparison.*

H2b: *More self-destruction (than self-improvement) motivations are correlated with more contrastive (than assimilative) upward social comparison.*

H3a: *More assimilative (than contrastive) upward social comparison is correlated with more positive (than negative) emotions.*

H3b: *More contrastive (than assimilative) upward social comparison is correlated with more negative (than positive) emotions.*

H4a: *More assimilative (than contrastive) upward social comparison is correlated with more benign (than malicious) envy.*

H4b: *More contrastive (than assimilative) upward social comparison is correlated with more malicious (than benign) envy.*

H5a: *More assimilative (than contrastive) upward social comparison is correlated with higher satisfaction with life.*

H5b: *More contrastive (than assimilative) upward social comparison is correlated with lower satisfaction with life.*

2 Methods

2.1 Participants

To recruit potential participants, the researchers sent out a recruitment advertisement on the research participant recruitment system (called SONA) at the University of California Davis. Potential participants were told that this was a study about media use, social interactions, and mental health of college students, and if they successfully completed the study, they would receive 0.5 extra credit for a class at their choice. To be eligible to take part in the study (i.e., the inclusion criteria), the potential participants must be (1) an enrolled student at the University of California Davis, (2) at least 18 years old, and (3) a social media user.

The SONA system automatically prevented non-enrolled students and those who were under the age of 18 from participating in this study. A total of 479 participants who met the first two inclusion criteria (i.e., enrolled students who were at least 18 years old) participated in the study in the SONA system. However, 10 out of those 479 participants revealed that they were not social media users at all. Thus, those 10 participants were excluded. For the rest of the 469 participants, the average time and the standard deviation of the time that they completed the study were calculated. Some existing research excluded participants who spend two standard deviations (2SD) below and above the average time, out of the concerns that the responses provided by those participants were potentially low quality [34]. In the current study, the researchers also applied this procedure—although no individual spent 2SD below the mean time, five individuals spent 2SD above the mean time. Thus, those five participants were excluded. Furthermore, there were two other participants who paid insufficient attention when completing the study, and were thus also excluded. In summary, the current study excluded participants who did not meet the inclusion criteria, and also excluded participants who finished the study using 2SD above the mean completion time, and also those who paid insufficient attention. The final sample was 462 participants. Power analysis suggested a minimum sample size of 92 participants was needed for a power of 0.80, an alpha level of 0.05, and a medium effect size of $f^2 = 0.15$. Thus, a sample of $N = 462$ was sufficient.

The sample was primarily composed of female respondents ($n = 349$, 75.54%), followed by male respondents ($n = 105$, 22.73%). A small number of individuals indicated other gender identities ($n = 4$, 0.87%), and an equivalent share of participants ($n = 4$, 0.87%) declined to specify their gender. The age of sample spanned from 18 to 42 years, with an average age of 19.75 ($SD = 2.09$).

2.2 Procedures

Approval for this study was obtained from the Institutional Review Board at the University of California Davis (approval number # 2009896-1), and the study was conducted in accordance with the Declaration of

Helsinki. Participants read the informed consent. Upon agreeing to take part in the research, participants started an online survey. Participants first reported their trait self-compassion. Then, based on the valid methodological approaches adopted in other existing research, the current study asked participants to think of their most recent experiences of using social media; in other words, what happened during their latest social media use [35–37]. Participants were asked to report, during their latest experiences of using social media, the extent to which they used social media passively, and then the extent to which they had self-improvement and self-destruction motivations, and then the extent to which they compared with others upwardly assimilative and upwardly contrastive, and then their psychological well-being. Finally, participants reported demographic information.

2.3 Measures

2.3.1 Trait Self-Compassion

Trait self-compassion was measured by items in the Self-Compassion Scale Short-Form [38]. On a five-point scale (1 = almost never, 5 = almost always), participants answered six questions to report their trait self-compassion.

After reverse-coded items were adjusted, a six-item scale was formed by computing the average scores of the six items. Higher scores demonstrated greater trait self-compassion ($M = 2.72$, $SD = 0.85$). Cronbach's alpha of the six items was calculated— $\alpha = 0.79$. A Confirmatory Factor Analysis (CFA) was also conducted on the six items, and the model fit indicators were— $CMIN/DF = 2.73$, $GFI = 0.98$, $TLI = 0.97$, $CFI = 0.98$, $RMSEA = 0.06$, 90% CI [0.03, 0.09], $SRMR = 0.03$.

2.3.2 Passive Social Media Use

Passive social media use was measured by four questions in existing research [39]. Participants recollected their latest experiences of using social media, and indicated the extent to which they used social media passively. Participants answered four questions on a five-point scale (1 = never, 5 = very frequently).

A four-item scale was formed by computing the average scores of the four items. Higher scores demonstrated more passive social media use ($M = 3.41$, $SD = 0.92$). Cronbach's alpha of the four items was $\alpha = 0.74$. CFA showed that the model fit indicators of the four items were— $CMIN/DF = 2.92$, $GFI = 0.99$, $TLI = 0.98$, $CFI = 0.99$, $RMSEA = 0.06$, 90% CI [0.00, 0.13], $SRMR = 0.02$.

2.3.3 Self-Improvement/Self-Destruction Motivations

To measure self-improvement motivations and self-destruction motivations, this study adopted the scale in existing research [25]. Keep recalling what happened during their latest experiences of using social media, participants reported that, when they saw the content posted by others at the moment, the extent to which they had self-improvement and self-destruction motivations. On a five-point scale (1 = strongly disagree, 5 = strongly agree), participants answered five items to report their self-improvement motivations and four items to report their self-destruction motivations.

The present study focused on which type of motivations young adults had more (relative to the other type). Thus, the present study first calculated a self-improvement motivations scale by averaging its five questions ($M = 2.94$, $SD = 1.05$) and also a self-destruction motivations scale by averaging its four questions ($M = 2.28$, $SD = 1.11$). Then, the current study calculated a “motivations differences scale”, using the self-improvement motivations scale to subtract the self-destruction motivations scale. A positive score demonstrated more self-improvement (than self-destruction) motivations. A negative score demonstrated more self-destruction (than self-improvement) motivations ($M = 0.65$, $SD = 1.04$, $Min = -2.95$, $Max = 4.00$).

Cronbach's alphas of the five self-improvement motivations items and the four self-destruction motivations items were $\alpha = 0.88$ and $\alpha = 0.92$. A CFA was conducted on the nine items, and the model fit indicators were—CMIN/DF = 4.17, GFI = 0.95, TLI = 0.96, CFI = 0.97, RMSEA = 0.08, 90% CI [0.07, 0.10], SRMR = 0.04.

2.3.4 Assimilative/Contrastive Upward Social Comparison

To measure assimilative and contrastive upward social comparison, the current study adopted the measurement items in existing research [35]. Still recalling what happened during their latest experiences of using social media, participants reported that, when they saw the content posted by others, at the moment, to what extent did they engage in assimilative and contrastive upward social comparison. Assimilative and contrastive upward social comparison was both measured by four questions with a five-point scale (1 = strongly disagree, 5 = strongly agree).

The present study focused on which type of upward social comparison young adults engaged more (relative to the other type). Therefore, the present study first calculated a scale of assimilative upward social comparison by taking the mean of its four questions ($M = 3.14$, $SD = 0.94$). A scale of contrastive upward social comparison was also calculated by taking the mean of its four questions ($M = 3.06$, $SD = 0.93$). Then, the present study calculated an “upward social comparison differences scale”, using the assimilative upward social comparison scale to subtract the contrastive upward social comparison scale. A positive score indicated more assimilative (than contrastive) upward social comparison, and a negative score indicated more contrastive (than assimilative) upward social comparison ($M = 0.08$, $SD = 0.90$, $Min = -3.50$, $Max = 3.00$).

Cronbach's alpha for the four assimilative upward social comparison items was $\alpha = 0.86$, and was $\alpha = 0.85$ for the four contrastive upward social comparison items. A CFA was conducted on the eight items, and the model fit indicators were—CMIN/DF = 4.13, GFI = 0.96, TLI = 0.95, CFI = 0.97, RMSEA = 0.08, 90% CI [0.06, 0.10], SRMR = 0.04.

2.3.5 Positive/Negative Emotions

On a five-point scale (1 = very slightly or not at all, 5 = extremely), participants answered a total of six questions to report their positive emotions (three questions) and negative emotions (three questions) [40,41]. Specifically, participants reported that, during their latest social media experiences, immediately after they made comparisons with those better-off others, at the moment, how strongly they felt (1) inspired, (2) optimistic, (3) admirable (positive emotions), and (4) ashamed, (5) depressed, (6) resentful (negative emotions).

The present study focused on which type of emotions young adults had more, in relation to the other type. Therefore, first, a scale for positive emotions ($M = 2.61$, $SD = 1.03$) and negative emotions ($M = 1.90$, $SD = 0.96$) was respectively calculated by taking the mean of inspiration, optimism, and admiration, and the mean of shame, depression, and resentment. Then, an “emotion differences scale” was created by using the positive emotions scale to subtract the negative emotions scale. A positive score indicated more positive (than negative) emotions, and a negative score indicated more negative (than positive) emotions ($M = 0.71$, $SD = 1.36$, $Min = -3.67$, $Max = 4.00$).

Cronbach's alphas for the three positive emotions and three negative emotions were $\alpha = 0.78$ and $\alpha = 0.76$. The model fit indicators of the CFA on the six emotions were—CMIN/DF = 3.08, GFI = 0.98, TLI = 0.96, CFI = 0.98, RMSEA = 0.07, 90% CI [0.04, 0.10], SRMR = 0.04.

2.3.6 Benign/Malicious Envy

This study adopted the scale used in existing literature [42] to assess benign and malicious envy. Participants reported, during their latest social media experiences, immediately after they made comparisons with those better-off others, at the moment, their degree of feeling benign envy (four questions) and malicious envy (five questions), on a six-point scale (1 = strongly disagree, 6 = strongly agree).

The current study was interested in which type of envy young adults had more, in relation to the other type. Thus, the present study first created a four-item scale of benign envy and a five-item scale of malicious envy by respectively averaging their items ($M_{\text{benign envy}} = 3.59$, $SD_{\text{benign envy}} = 1.13$, $M_{\text{malicious envy}} = 2.25$, $SD_{\text{malicious envy}} = 1.12$). After that, an “envy differences scale” was formed by using the benign envy scale to subtract the malicious envy scale. A positive score demonstrated more benign (than malicious) envy. A negative score demonstrated more malicious (than benign) envy ($M = 1.34$, $SD = 1.32$, $\text{Min} = -1.85$, $\text{Max} = 5.00$).

Cronbach’s alpha for the four benign envy items was $\alpha = 0.82$, and for the five items of malicious envy the α was 0.92. The model fit indicators of the CFA on the nine items were—CMIN/DF = 3.29, GFI = 0.96, TLI = 0.97, CFI = 0.97, RMSEA = 0.07, 90% CI [0.05, 0.09], SRMR = 0.05.

2.3.7 Satisfaction with Life

On a seven-point scale (1 = strongly disagree, 7 = strongly agree), participants answered four questions to report that, during their latest social media experiences, immediately after they made comparisons with those better-off others, at the moment, how were they satisfied with their lives. The four questions were adopted from the Satisfaction with Life Scale [43].

A four-item scale was formed by taking the average of the four items. Higher scores indicated more satisfaction with life ($M = 4.02$, $SD = 1.37$). Cronbach’s alpha for the four questions was $\alpha = 0.83$. The model fit indicators of the CFA on the four items were—CMIN/DF = 3.11, GFI = 0.99, TLI = 0.98, CFI = 0.99, RMSEA = 0.07, 90% CI [0.01, 0.13], SRMR = 0.02.

2.4 Data Analysis

The present study used Statistical Package for the Social Sciences (SPSS) (version 31.0; IBM Corp., Armonk, NY, USA) to calculate the descriptive statistics of the measurement scales (mean and standard deviation). SPSS was also used to calculate the reliability (Cronbach’s alpha) of the measurement scales. To calculate the model fit indicators of the measurement scales (including CMIN/DF, GFI, TLI, CFI, RESEA with 90% CI, SRMR), the present study used the Amos software (version 29.0; IBM Corp., Armonk, NY, USA). Information about descriptive statistics, reliability, and model fit indicators was already presented in the above Section 2.3 Measures.

To test the hypotheses, the present study used Model 83 in PROCESS macro for SPSS by Hayes [44]. Model 83 allowed for the testing of moderated mediation relationships between an independent variable (X) and a dependent variable (Y), mediated by two sequential mediators M1 and M2, and a moderator (W) moderating the relationship between X and M1. In the present study, Model 83 was run three times, each time with the same independent variable (X), moderator (W), and mediators (M1 and M2), but with a different dependent variable (Y). Specifically, in all three models, the independent variable (X) was passive social media use, and the moderator (W) was trait self-compassion, and the first mediator (M1) was the motivations differences scale, and the second mediator (M2) was the upward social comparison differences scale. In the first model, the dependent variable (Y) was the emotion differences scale. In the second model, the dependent variable (Y) was the envy differences scale. In the third model, the dependent variable was

the satisfaction with life scale (Y). There was no covariate/control variable, and bootstrap sample was 10,000. For a complete demonstration of the model, please see Fig. 2. Standardized coefficients (β), t , p -value, and effect size Cohen's f^2 were reported in the Results section.

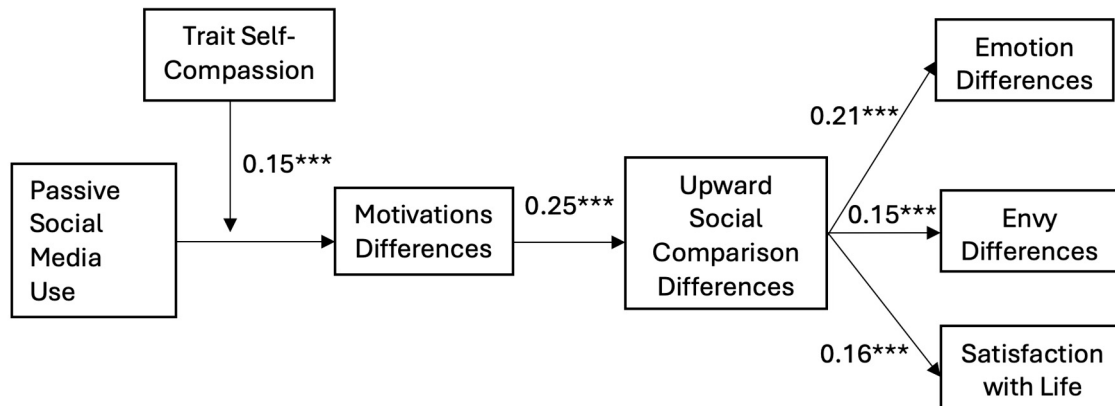


Figure 2: Passive social media use, trait self-compassion, motivations, upward social comparison, and psychological well-being. Note. *** $p < 0.001$. All coefficients in the figure were standardized: Motivations Differences = self-improvement minus self-destruction motivations; Upward Social Comparison Differences = assimilative minus contrastive upward social comparison; Emotion Differences = positive minus negative emotions; Envy Differences = benign minus malicious envy.

3 Results

Results showed that the relationship between passive social media use and the motivations differences scale was moderated by trait self-compassion, standardized $\beta = 0.15$, $t(458) = 3.65$, $p < 0.001$, effect size Cohen's $f^2 = 0.07$. Specifically, the relationship between passive social media use and the motivations differences scale was significantly positive for young adults with high trait self-compassion (one standard deviation above the mean), standardized $\beta = 0.25$, $t(458) = 3.94$, $p < 0.001$, and for young adults with medium level of trait self-compassion (at the mean), standardized $\beta = 0.10$, $t(458) = 2.24$, $p = 0.03$, but nonsignificant for young adults with low trait self-compassion (one standard deviation below the mean) standardized $\beta = -0.05$, $t(458) = -0.82$, $p = 0.41$.

For the relationships between the motivations differences scale and the upward social comparison differences scale, results showed that there was a significant positive relationship between them, standardized $\beta = 0.25$, $t(459) = 5.41$, $p < 0.001$, effect size Cohen's $f^2 = 0.06$. For the relationships between the upward social comparison differences scale and the three psychological well-being elements, results showed that the upward social comparison differences scale was significantly and positively related to the emotion differences scale, standardized $\beta = 0.21$, $t(458) = 5.05$, $p < 0.001$, effect size Cohen's $f^2 = 0.31$, significantly and positively related to the envy differences scale, standardized $\beta = 0.15$, $t(458) = 3.44$, $p < 0.001$, effect size Cohen's $f^2 = 0.27$, and significantly and positively related to the satisfaction with life scale, standardized $\beta = 0.16$, $t(458) = 3.39$, $p < 0.001$, effect size Cohen's $f^2 = 0.04$.

4 Discussion

In summary, the present study found that, when young adults passively used social media, those with high trait self-compassion were likely to have more self-improvement (than self-destruction) motivations, supporting H1a. More self-improvement motivations, in turn, were associated with more assimilative (than contrastive) upward social comparison, supporting H2a. More assimilative upward social comparison, in

turn, was associated with the three components of more positive psychological well-being, supporting H3a, H4a, and H5a.

On the other hand, when young adults passively used social media, those with low trait self-compassion did not have more self-destruction (than self-improvement) motivations, and thus H1b was not supported. Nonetheless, for young adults who indeed had more self-destruction (than self-improvement) motivations, they were likely to engage in more contrastive (than assimilative) upward social comparison (supporting H2b), and more contrastive upward social comparison in turn was associated with the three components of more negative psychological well-being (supporting H3b, H4b, and H5b).

4.1 Passive Use of Social Media, Factors Related to Assimilative Upward Social Comparison, and Psychological Well-Being

In the existing literature, social comparison theory [18] has been widely used in explaining the relationships on how passive social media use is related to the psychological well-being of young adults. Specifically, existing literature mainly focuses on the types of upward social comparison, and shows that different types of upward social comparison (assimilative and contrastive) are correspondingly associated with more favorable and unfavorable psychological well-being when young adults passively use social media. However, it is unclear for whom and when are the different kinds of upward social comparison more or less likely to happen on social media. In other words, for which individuals and under what circumstances are assimilative and contrastive upward social comparison more or less likely to occur on social media. In this sense, only focusing on the kinds of upward social comparison is not sufficient. We need to further understand the underlying factors that are related to the occurrence of the different kinds of upward social comparison.

Thus, in addition to focusing on the kinds of upward social comparison on social media, the current study extends its focus, paying attention to the motivation perspective of the social comparison theory [25]. First, drawing on the literature on the self-improvement motivations of social comparison and the relevant literature on trait self-compassion [25,28,30], the current study found that young adults with high trait self-compassion were likely to have more self-improvement motivations, which in turn were associated with more engagement in assimilative upward social comparison on social media, which in turn was associated with more positive psychological well-being of young adults. These findings further clarify for whom (i.e., young adults with high trait self-compassion) and when (i.e., when young adults have more self-improvement motivations) assimilative upward social comparison is more likely to occur during young adults' passive social media use, which in turn is related to more positive psychological well-being of young adults. These findings also expand the existing literature, adding the motivational perspective of the social comparison theory in explaining the associations between passive social media use, assimilative upward social comparison, and psychological well-being, and giving a more comprehensive and detailed picture on how social comparison theory could be used to unravel the associations between passive use of social media and positive psychological well-being of young adults.

4.2 Passive Use of Social Media, Factors Related to Contrastive Upward Social Comparison, and Psychological Well-Being

The present study also examined factors that were associated with young adults' engagement in contrastive upward social comparison on social media. Drawing on the literature on the self-destruction motivations of social comparison and the relevant literature on trait self-compassion [25,27,29], the current study proposed that young adults with low trait self-compassion had more self-destruction motivations,

which in turn were associated with more engagement in contrastive upward social comparison on social media, which in turn was associated with more negative psychological well-being. However, results showed that young adults with low trait self-compassion did not have more self-destruction motivations when passively using social media. In fact, their self-destruction motivations were not different from their self-improvement motivations. A possible reason might be that young adults with low trait self-compassion had self-destruction motivations towards some people's content on social media, but at the same time they also had self-improvement motivations towards the other people's content on social media, and these two types of motivations canceled out on each other. Existing research has suggested that young adults have more self-improvement motivations towards other people whom they feel closer to and strongly identify with, but are less likely to have self-improvement motivations and less likely to have positive self-evaluations when they see the content posted by individuals whom they do not strongly identify with and do not feel close to [45,46]. Therefore, it is possible that, for young adults with low trait self-compassion, they had self-improvement motivations when they saw the social media content of people whom they strongly identified with and felt more connected with. At the same time, they might also have self-destruction motivations when they saw the social media content of people whom they did not strongly identify with and feel distant. Self-improvement motivations and self-destruction motivations offset with each other. This might explain why, for young adults with low trait self-compassion, their self-destruction motivations and self-improvement motivations did not differ. Admittedly, these explanations are speculative based on the findings suggested by other existing research [45,46]. Future research could specifically examine the question that, for young adults with low trait self-compassion, whether their self-improvement and self-destruction motivations differ based on the specific type of people they interact with on social media.

Nonetheless, this study did find that if young adults ever had more self-destruction (than self-improvement) motivations, they were likely to engage in more contrastive upward social comparison, which in turn was associated with more negative psychological well-being. These findings further elucidate when (i.e., when young adults have more self-destruction motivations) contrastive upward social comparison is more likely to occur during young adults' passive social media use, which in turn is related to diminished psychological well-being of young adults. These findings incorporate a motivational perspective of the social comparison theory in explaining the associations between passive use, contrastive upward social comparison, as well as psychological well-being, thereby extending the existing research on how social comparison theory could be applied to unravel the relationships between passive use of social media and poorer psychological well-being of young adults.

4.3 Practical Implications

Findings of this study could provide valuable implications on the actual interventions and preventions on promoting the psychological well-being of young adult social media users. Specifically, this study found that high trait self-compassion, more self-improvement motivations, and more assimilative upward social comparison were potentially able to enhance psychological well-being when young adults passively use social media. Therefore, there are various techniques that could be implemented to promote the psychological well-being of young adult social media users. For example, the current study suggests that counselors and therapists could develop training programs that encourage young adult social media users to practice a high-self-compassionate mindset when they passively use social media. Specifically, counselors and therapists may tell young adult social media users that, when they browse and see the superior content other people post on social media, it is recommended that they try to stop ruminating on their own weaknesses and inadequacies and instead trying to adopt a self-understanding and self-kindness perspective

towards their own weaknesses and inadequacies. There are already studies showing that a self-compassion intervention could successfully promote psychological well-being, especially in terms of body image [47–50]. Besides self-compassion interventions, counselors and therapists may also develop training programs that encourage young adult social media users to practice a self-improvement mindset when they passively use social media. For example, counselors and therapists could recommend young adult social media users to think about how they could improve themselves and become a better self when they browse and see the superior content other people post on social media. Indeed, there is already research showing that inducing self-improvement motivations could protect young adults from suffering from negative well-being [51]. In addition, counselors and therapists may also develop training programs that encourage young adult social media users to practice assimilative upward social comparison. Specifically, counselors and therapists may recommend young adult social media users that, when they browse and see the superior content others post on social media, it would be better if they could focus on comparing themselves with those superior others to think about how they themselves could achieve the similar accomplishments as those superior others.

On the other hand, this study also found that more self-destruction motivations and more contrastive upward social comparison could potentially harm young adults' psychological well-being. Thus, counselors and therapists may develop training programs to try to minimize young adult social media users' self-destruction motivations and try to reduce young adult social media users' tendency to engage in contrastive upward social comparison. Specifically, counselors and therapists could recommend young adult social media users that, when they browse and see the superior content other people post on social media, they could try not to criticize themselves, and try not to overly focus on comparing the differences between themselves and those better-off others. Indeed, there is already research that implemented intervention techniques to minimize young adults' self-destruction motivations and contrastive upward social comparison, and these interventions were effective in terms of promoting psychological well-being [52]. All in all, it is the hope that the present study could offer multiple intervention and prevention suggestions that could potentially promote and enhance the psychological well-being of young adult social media users. Of course, more empirical research is needed to examine the effectiveness of these recommended intervention and prevention strategies.

4.4 Strengths, Limitations, and Future Research Directions

One limitation of this study is that the majority of the study sample was female. Male participants and participants of other genders only accounted for approximately 25% of the entire sample. This imbalance of the gender composition of the sample limits the generalizability of the findings. Future research could recruit a sample that is more balanced in terms of gender. Also, all participants in this study were from the U.S., and thus the findings in the current study might not be generalizable to other cultural contexts. Future research could also recruit participants in other cultures to examine whether the relationships between passive social media use, self-improvement/self-destruction motivations, assimilative/contrastive upward social comparison, and psychological well-being differ between cultures. In addition, the effect sizes detected in the current study were mostly small effects. Future research is needed to continue examining the effect sizes of the study variables in order to give a more precise and comprehensive picture. Furthermore, the current study asked participants to answer questions while recollecting what happened during their latest experiences of using social media. This method has been used in multiple studies in the literature of social media and psychological well-being [35–37]. Therefore, it is a valid and reliable method. Nonetheless, participants' self-report on their latest experiences of using social media might be imprecise and biased,

and also increases common method variance. Future research could develop other potentially better ways for measurement. Lastly, this study was cross-sectional, so that the findings were all correlational. Causal relationships between the variables could not be established. Future research could implement an experimental method to examine the causal relationships between the variables of this study.

Although this study has these aforementioned limitations, the present study still makes valuable contributions. Existing research tends to mainly focus on the different types of upward social comparison on social media, and it is unclear for whom and when are the different types of comparison more or less likely to happen. The current study draws on the motivational perspective of social comparison theory and relevant literature on trait self-compassion to clarify these questions, examining how multiple factors are associated with the happening of assimilative or contrastive upward social comparison during young adults' passive social media use, which subsequently is related to more positive or negative psychological well-being. Therefore, this study expands the theoretical insights in the research area of passive social media use, upward social comparison, and psychological well-being of young adults. Findings of the study could also shed light on the practical interventions and preventions on promoting young adults' psychological well-being.

5 Conclusions

In summary, the topic of social media and psychological well-being has increasingly received research attentions [53–55]. This study makes important theoretical contributions to the relevant literature and also provides valuable insight on promoting the psychological well-being of young adult users of social media. Ultimately, as social media has become an indispensable part of the lives of young adults, it is the true hope of the current study that social media could be used by young adults in ways that benefit their psychological well-being and psychological development.

Acknowledgement: None.

Funding Statement: The authors received no specific funding for this study.

Author Contributions: The authors confirm contribution to the paper as follows: Conceptualization, Muheng Yu; methodology, Muheng Yu; formal analysis, Muheng Yu; data curation, Muheng Yu; writing—original draft preparation, Muheng Yu; writing—review and editing, Muheng Yu; supervision, Drew P. Cingel. All authors reviewed and approved the final version of the manuscript.

Availability of Data and Materials: The data that support the findings of this study are available from the Corresponding Author upon reasonable request.

Ethics Approval: The study was conducted in accordance with the Declaration of Helsinki, and approved by the Institutional Review Board of University of California, Davis (protocol code 2009896-1). Informed consent was obtained from all subjects involved in the study.

Conflicts of Interest: The authors declare no conflicts of interest.

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