

# ***Platform Visibility and Life Satisfaction among Young Adults: Social Comparison Mechanisms in a Short-Video Environment***

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**Abstract.** Concerns about what short-video platforms such as Douyin are doing to young people's mental health have intensified in recent years, in both public discourse and academic research. These platforms are not just places to kill time or chat with friends. The way they distribute content and decide what gets seen keeps nudging users into particular emotional states and ways of judging themselves. This paper takes social comparison theory as its starting point and examines how the intensity of Douyin use, upward and downward social comparison, self-esteem, and life satisfaction are related among young Chinese users. Survey data were collected from 125 Douyin users aged 18-32. Intensity correlated significantly and positively with upward comparison ( $r = 0.46$ ,  $p < 0.001$ ). The link with downward comparison did not reach significance. Upward comparison mediated the path running from use intensity to life satisfaction, with an indirect effect of  $-0.17$  (95% CI  $[-0.29, -0.08]$ ). Self-esteem moderated the relationship between upward comparison and life satisfaction ( $B = 0.22$ ,  $p < 0.05$ ): users with higher self-esteem felt the negative effect of upward comparison less keenly. Overall, the paper argues that emotionally charged upward comparison on Douyin is one of the main routes through which young users' life satisfaction erodes, and that self-esteem acts as a buffer. The findings add empirical evidence to the wider conversation about social comparison on digital platforms and suggest a few practical angles for digital well-being work with young people.

**Keywords:** Douyin use, upward social comparison, downward social comparison, self-esteem, life satisfaction

## **1. Introduction**

By December 2024, China had 1.026 billion short-video users [1]. Among young Chinese adults (18–32), Douyin is no longer just entertainment but an everyday digital infrastructure. They consume short videos heavily and are sensitive to self-identity and social comparison. Moreover, Douyin's content is algorithmically filtered, ranked, and amplified. This "visibility governance" turns social comparison from a personal psychological act into a structural outcome driven by platform commercial logic. Therefore, Douyin offers a unique platform to test how visibility shapes comparison and well-being. As use of the app has become routine in daily life, a growing number of

researchers have started asking what heavy use means for young people's life satisfaction and mental health.

Viewing short-video platforms as neutral pipes for moving information from sender to receiver does not really do them justice. They are media environments that actively shape attention, feelings, and habits of self-comparison. Compared with older text-and-image platforms, Douyin leans much harder on algorithmic recommendations, dense visual cues, and the pull of continuous scrolling. In a short period of time, a user can watch a great many edited, polished and emotionally charged glimpses of other people's lives. What ends up on the screen, then, is not life itself, but a stream of "highlight moments" that have been carefully constructed and amplified by the platform's visibility logic.

Social comparison theory offers one good way into the psychological side of all this [2]. Looking up at people who seem to be doing better has long been linked with envy and self-deprecation, while looking down at people seen as worse off can give a person a small boost of relative comfort [3, 4]. The mechanism has been studied in detail on text-and-image platforms. Whether the same patterns carry over to Douyin is less obvious, given how heavily the app relies on short video, intense sensory cues and algorithmic curation. Self-esteem- that is, a person's overall sense of their own worth - may also shape how strongly such comparisons land [5]. Considered more critically, self-esteem might even be thought of as a kind of "technology of the self" that helps users push back against some of the platform's pressures, though direct evidence on this point in the short-video setting remains scarce.

To investigate this, the paper focuses on young Douyin users and uses a structured questionnaire to examine how use intensity, upward and downward comparison, self-esteem and life satisfaction relate to one another. Correlation analysis, bootstrap mediation analysis and a moderation test are combined to clarify the underlying psychological mechanisms. The aim is partly theoretical, in extending social comparison theory to the short-video setting and adding to the wider literature on digital media and well-being, and partly practical, in providing empirical grounding for healthier use, content governance, and youth mental health work.

## 2. Literature review and hypotheses

### 2.1. Social comparison theory and its application to social media

Social comparison theory begins with a simple observation: when people lack objective yardsticks, they tend to size themselves up by looking sideways at others [2]. Researchers typically distinguish two directions of comparison. Upward comparison sets the self against someone seen as doing better; downward comparison sets the self against someone seen as doing worse. Looking up can spur people to do better, but it can still trigger a sense of inadequacy, envy and dissatisfaction with life. Looking down, on the other hand, often produces a quiet sense of relative well-being [4].

The arrival of social media has clearly increased both the frequency and the emotional charge of social comparison, as users are constantly exposed to selective, idealised slices of other people's lives. A solid body of empirical work has shown that heavier social media use is associated with greater upward comparison, and that this, in turn, predicts poorer mental health [3, 6]. Comparison, on this reading, is no longer just an inward act initiated by the user; it is now organised, sustained, and intensified by how platforms distribute content and arrange visibility.

Most of this evidence, however, was gathered on text-and-image platforms such as Facebook and Instagram. The dynamics of comparison in short-video environments have received much less attention. Once the platform society takes hold, platforms move beyond simply ferrying information

and play a more active role in how users see themselves and weigh up others. Van Dijck argues that platforms reorganise social behaviour through technical protocols, data logics and visibility regimes [7]. More concretely, the content people meet on a platform is hardly random: it has been filtered by algorithms, amplified by ranking systems, and made highly visible according to the platform's own priorities. Social comparison is therefore increasingly woven into the visibility architecture of platform environments. This is the theoretical anchor for the present look at Douyin use, social comparison, self-esteem and life satisfaction.

## 2.2. Douyin use, social comparison and life satisfaction

Douyin differs from text-and-image platforms in that its content distribution relies heavily on user behavioural signals such as dwell time, likes and comments, with the algorithm pushing material that draws strong engagement and intense emotional responses. Much of the resulting content takes the form of carefully edited "highlight moments": talent showcases, displays of physical attractiveness, travel scenes and stories of personal success. Users who spend long periods inside such a feed are likely to encounter upward comparison cues at a fairly unusual rate. Douyin also hosts a fair amount of ordinary recordings of daily life, accounts of failure, and humorous complaints, all of which could in principle prompt downward comparison. Because the algorithm tends to favour popular and engaging clips, which are often beautified and positively framed, the opportunities for downward comparison may nevertheless be fewer. From this, the following hypotheses are put forward:

H1: Douyin use intensity is positively associated with upward social comparison.

H2: Douyin use intensity is positively associated with downward social comparison, although this association is weaker than that in H1.

Life satisfaction is a person's overall cognitive evaluation of how their life is going. Earlier work has consistently found that upward comparison lowers life satisfaction, while downward comparison tends to nudge it upward [3, 4]. In the Douyin environment, repeated exposure to other people's success, appearance or wealth may build up a sense of relative deprivation, which then feeds into a less favourable take on one's own life. The opposite can also happen: encountering other people's troubles or fairly unremarkable lives can leave users feeling that they are doing reasonably well, thereby increasing overall satisfaction. The following hypotheses follow:

H3: Upward social comparison is negatively associated with life satisfaction.

H4: Downward social comparison is positively associated with life satisfaction.

## 2.3. The moderating role of self-esteem

Self-esteem refers to a person's overall judgement of their own worth [8]. People high in self-esteem usually hold a more positive self-concept, and when they encounter upward comparisons, they tend to draw on strategies such as cognitive reappraisal or selective attention, which reduce the negative impact of the experience. People low in self-esteem are more likely to take the perceived superiority of the comparison target at face value, and the experience can leave them with self-doubt and dissatisfaction [5]. Self-esteem may, in this way, soften the negative effect of upward comparison on life satisfaction. The hypothesis is as follows:

H5: Self-esteem negatively moderates the relationship between upward social comparison and life satisfaction; that is, higher self-esteem weakens the negative pull of upward comparison.

### 3. Methodology

#### 3.1. Sample and data collection

An online questionnaire was sent out to young Douyin users via the Wenjuanxing survey platform. Convenience sampling was combined with snowball sampling, and the questionnaire link was shared via WeChat, QQ, and other social channels. In total, 133 responses came back. Seven respondents who reported not using Douyin were excluded, along with one respondent who selected "other" for gender and a small number of cases that did not pass the attention-check item (Item 28, which asked respondents to select "somewhat agree"). After these exclusions, 125 valid responses remained, giving an effective response rate of 94.0%. All participants gave informed consent, and the data were handled anonymously. Because the design is cross-sectional and rests on self-report, the analysis below should be interpreted as evidence of association rather than as a basis for strong causal claims.

#### 3.2. Measures

All scales used a five-point Likert format running from 1 (strongly disagree) to 5 (strongly agree). Reverse-coded items were recoded before analysis.

Douyin use intensity was measured with four items adapted from an existing social media use intensity scale (Items 7-10 in the original questionnaire). A sample item reads: "I spend a great deal of time browsing Douyin every day" [3]. Cronbach's  $\alpha$  was 0.82.

Upward social comparison was measured with four self-developed items based on existing measures of upward comparison on social media (Items 17-20). A sample item reads: "When I am on Douyin, I often feel that other people's lives are more exciting than mine" [3].

Downward social comparison was measured with five self-developed items grounded in Wills' theory of downward comparison (Items 22-26). A sample item reads: "When I see people who are worse off than me, I feel a little better about myself" [4].

Self-esteem was measured with six items from the Rosenberg Self-Esteem Scale (Items 11-16, with Items 14 and 15 reverse-coded). A sample item reads: "I feel that I am a person of worth" [8].

Life satisfaction was measured with five items from the Satisfaction with Life Scale developed by Diener and colleagues (Items 27 and 29-32). Item 28 served as an attention check. A sample item reads: "I am satisfied with my life" [9].

#### 3.3. Data analysis

Descriptive statistics and Pearson correlation analyses were performed, and bootstrap procedures were used to test the significance of the mediation and moderation effects [10].

### 4. Results

#### 4.1. Descriptive statistics and correlations

In the valid sample, 65 respondents were male (52.0%), and 60 were female (48.0%). Ages ranged from 18 to 32, with a mean of 22.4 years ( $SD = 2.1$ ). The means, standard deviations and Pearson correlations for all variables are reported in Table 1.

Table 1. Means, standard deviations and correlations among variables (N = 125)

| Variable             | M    | SD   | 1       | 2        | 3      | 4       | 5 |
|----------------------|------|------|---------|----------|--------|---------|---|
| Douyin use intensity | 2.96 | 1.08 | 1       |          |        |         |   |
| Upward comparison    | 2.84 | 0.98 | 0.46*** | 1        |        |         |   |
| Downward comparison  | 2.61 | 0.86 | 0.06    | 0.08     | 1      |         |   |
| Self-esteem          | 3.63 | 0.86 | -0.17   | -0.39*** | 0.22*  | 1       |   |
| Life satisfaction    | 3.32 | 0.88 | -0.29** | -0.50*** | 0.30** | 0.49*** | 1 |

Note: \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

The correlation analysis shows that Douyin use intensity is significantly and positively tied to upward comparison ( $r = 0.46$ ,  $p < 0.001$ ). The more often and more intensely respondents used Douyin, the more readily they felt that other people's lives were more exciting than their own. For the corresponding item, 49 respondents (39.2%) chose "strongly agree". This pattern lends support to H1.

Use intensity, by contrast, was not significantly correlated with downward comparison ( $r = 0.06$ ,  $p > 0.05$ ), so H2 was not supported. For the item "Content on Douyin makes me feel that I am not as good as others", 19 respondents (15.2%) picked "somewhat agree" or "strongly agree". For the item "When I see people who are worse off than me, I feel a little better about myself", only 17 respondents (13.6%) selected one of these two options. The correlation results further indicate that upward comparison is negatively linked with life satisfaction, while downward comparison is positively linked with it; H3 and H4 were therefore supported.

Self-esteem was significantly and positively correlated with life satisfaction ( $r = 0.49$ ,  $p < 0.001$ ). On the basis of self-esteem scores, respondents were sorted into three groups: 27 (21.6%) with low self-esteem, 20 (24.0%) with high self-esteem, and 68 with moderate self-esteem. The high self-esteem group reported a mean life satisfaction of 3.91 (SD = 0.70), compared with 2.62 (SD = 0.84) for the low self-esteem group. The gap between the two was significant, suggesting that those higher in self-esteem also tended to take a more positive view of their lives overall.

## 4.2. Mediation analysis

To test whether Douyin use intensity has an indirect effect on life satisfaction through social comparison, a parallel mediation model was estimated. Use intensity served as the predictor, upward and downward comparison as parallel mediators, and life satisfaction as the outcome, with age and gender included as control variables. The results are summarised in Table 2.

Douyin use intensity significantly and positively predicted upward comparison ( $B = 0.42$ ,  $p < 0.001$ ) but did not significantly predict downward comparison ( $B = 0.05$ ,  $p > 0.05$ ). With both mediators in the model, upward comparison significantly and negatively predicted life satisfaction ( $B = -0.42$ ,  $p < 0.001$ ), and downward comparison significantly and positively predicted life satisfaction ( $B = 0.28$ ,  $p < 0.01$ ). The direct effect of use intensity on life satisfaction was not significant ( $B = -0.07$ ,  $p > 0.05$ ).

The bootstrap test indicated that the indirect effect through upward comparison was significant (indirect effect = -0.17, 95% CI [-0.29, -0.08]). Since the confidence interval does not include zero, upward comparison plays a significant mediating role in the link between Douyin use intensity and life satisfaction. The indirect effect through downward comparison was 0.01 (95% CI [-0.04, 0.09]); the confidence interval crosses zero, and the effect is not significant. Taken together, the results indicate that upward comparison mediates the relationship between Douyin use intensity and life satisfaction.

Table 2. Regression results for the mediation model

| Predictor              | Upward comparison | Downward comparison | Life satisfaction |
|------------------------|-------------------|---------------------|-------------------|
| Douyin use intensity   | 0.42***           | 0.05                | -0.07             |
| Upward comparison      |                   |                     | -0.42***          |
| Downward comparison    |                   |                     | 0.28**            |
| Controls (age, gender) | Controlled        | Controlled          | Controlled        |
| R2                     | 0.22              | 0.01                | 0.39              |

Note: \*\* p < 0.01, \*\*\* p < 0.001

### 4.3. Moderation analysis

The moderating role of self-esteem in the relationship between upward comparison and life satisfaction was examined next; the results are reported in Table 3. The interaction term between upward comparison and self-esteem was significant (B = 0.22, p < 0.05). For respondents low in self-esteem, upward comparison had a stronger negative effect on life satisfaction (B = -0.59, p < 0.001); for respondents high in self-esteem, the negative effect was weaker, though still significant (B = -0.25, p < 0.05). Higher self-esteem therefore reduced the negative impact of upward comparison, and H5 was supported.

Table 3. Moderating effect of self-esteem on the relationship between upward comparison and life satisfaction (N = 125)

| Predictor         | B     | SE   | t     | p      | 95%CI         |
|-------------------|-------|------|-------|--------|---------------|
| Constant          | 3.32  | 0.07 | 47.43 | <0.001 | [3.18,3.46]   |
| Upward comparison | -0.42 | 0.08 | -5.25 | <0.001 | [-0.58,-0.26] |

Table 3. (continued)

|                                        |      |      |      |        |             |
|----------------------------------------|------|------|------|--------|-------------|
| Self-esteem                            | 0.45 | 0.09 | 5.00 | <0.001 | [0.27,0.63] |
| Upward comparison $\times$ Self-esteem | 0.22 | 0.10 | 2.20 | <0.05  | [0.02,0.42] |

Note: Age and gender were controlled. Coefficients are unstandardised regression coefficients.

## 5. Discussion

### 5.1. Main findings

Drawing on original survey data from 125 young Douyin users, the paper finds that heavier Douyin use is associated with a stronger tendency toward upward social comparison, and that this in turn is tied to lower life satisfaction. Downward comparison shows a positive link with life satisfaction, but its frequency is not affected by use intensity. Upward comparison fully accounts for the link between Douyin use intensity and life satisfaction, with the direct effect dropping to non-significance once the indirect path is taken into account. Self-esteem moderates the negative pull of upward comparison: the negative coefficient was -0.59 for low-esteem users and -0.25 for high-esteem users, confirming that higher self-esteem reduces the drop in life satisfaction. Notably, only 13.6% of respondents leaned towards downward comparison, a pattern that is at least in line with what we know about Douyin's preference for positively framed content.

These results echo what Vogel and colleagues have observed: social media tends to chip away at well-being chiefly through upward comparison [3]. They also confirm, in the Douyin setting, that downward comparison can be helpful when it does happen, but that it occurs relatively infrequently [4]. The fact that H2 was not supported can be understood in light of Douyin's content ecology, which is dominated by popular, highly engaging, and aestheticised "highlight" material. Ordinary or negative content tends to reach a much smaller audience, so even heavy users are unlikely to encounter a steady stream of downward comparison cues. On this reading, comparison is not just an individual psychological tendency. It is also a social process that is organised and reinforced by how platforms distribute content and determine visibility. Short-video platforms do not passively mirror social reality; through their algorithmic design, they keep amplifying content that is emotionally charged, highly interactive, and visually striking, and they expose users to filtered and idealised versions of life in a fairly lopsided way [7]. According to platform society theory, Douyin does not neutrally provide content for users to compare themselves with; rather, it prioritizes content through algorithmic recommendation. Upward comparison thus shifts from an occasional event to a structural product: the platform's selective visibility mechanism pre-filters the direction of comparison at the algorithmic level [7].

In this sense, young users' self-perception increasingly depends on which idealised versions of other people's lives they are shown. The decisive factor in how short-video platforms shape young people's well-being is therefore not how long users spend on the app, but how the platform environment shapes how they see themselves and others. In this environment, the protective role of self-esteem outlined by Orth and Robins receives some empirical support: respondents higher in self-esteem seemed better placed to withstand the psychological pressure that comes with upward comparison [5].

## 5.2. Practical implications

Beyond mapping the psychological mechanisms that connect Douyin use to young people's life satisfaction, the findings draw attention to the deeper ways in which fast-moving social media platforms are reshaping the very processes of self-evaluation and social comparison. In practice, more thought needs to be given to platform-level adjustments. Platforms should be willing to acknowledge the ethical responsibility they carry in shaping the comparison ecologies in which their users operate, and to think about recalibrating algorithmic weights so that more varied content reaches the feed. Moves of this kind could help keep users from getting stuck inside a one-directional environment dominated by upward comparison.

Users themselves can also do something. When the feeling that "other people are living better lives" arises, it can help to step back and reappraise the medium itself, for instance by reminding oneself that the videos have been edited and selected. Going out of one's way to look up content from ordinary users about ordinary daily life can also help even out emotional responses through a more balanced comparison. More broadly, social comparison theory suggests that public policy and media literacy education in this area will work best when individual psychological tendencies and the structures of platform environments are tackled together rather than in isolation [7].

## 5.3. Limitations and future directions

A few limitations should be noted. First, the sample is fairly small ( $N = 125$ ), which limits the extent to which the findings can be generalized to other groups. Second, all variables are based on self-report data collected via a single questionnaire, so common-method bias cannot be ruled out. Future work could pair survey responses with platform behavioural data, digital traces or qualitative interviews to strengthen both the objectivity and the depth of interpretation. Third, the paper did not distinguish between different types of Douyin content, such as appearance-oriented videos, knowledge-based videos or everyday vlogs, even though these are likely to differ in their psychological pull. Later studies would benefit from larger samples, longitudinal designs and direct comparisons across content categories, all of which would help refine our sense of how short-video platforms relate to mental health and life satisfaction.

## 6. Conclusion

Drawing on questionnaire data, this paper examines how use intensity, upward and downward social comparison, self-esteem, and life satisfaction co-vary in a sample of young Douyin users. The picture that emerges is fairly clear: Douyin's use intensity has a negative effect on young people's life satisfaction through upward, rather than downward, social comparison. The more often respondents browsed Douyin, the more readily they compared themselves with others and felt that their own lives fell short, which, in turn, lowered their overall view of life. Self-esteem moderated this negative effect in the expected direction, serving as a protective resource for those high in self-esteem and leaving those lower in self-esteem more open to the self-negation that follows from upward comparison.

Given the modest sample and the absence of comparisons across content types, future research should expand the sample, use longitudinal designs, and examine different categories of short-video content more closely. On the whole, the paper suggests that variation in young people's life satisfaction within short-video environments is not fully captured by media-use time alone. It is

bound up, instead, with how content is presented under platform conditions, with the visibility of idealised lives, and with the social comparison mechanisms that these together set in motion.

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