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# Scrolling Into Self-Doubt? TikTok Use Intensity And Global Self-Esteem Among High School Students In Bali, Indonesia

**Ni Wayan Purnami[1], Lidia Sandra[2], I Gusti Agung Ayu Yunita Utami[3]**
[1]Program Studi Psikologi, Fakultas Humaniora dan Ilmu Sosial, Universitas Bali Dwipa, Denpasar, Indonesia, niwayanpurnami2021@gmail.com
[2]Program Studi Psikologi, Fakultas Humaniora dan Ilmu Sosial, Universitas Bali Dwipa, Denpasar, Indonesia, lidiasandra@balidwipa.ac.id
[3]Program Studi Psikologi, Fakultas Humaniora dan Ilmu Sosial, Universitas Bali Dwipa, Denpasar, Indonesia, ayuyunita@balidwipa.ac.id

**Abstrak**

TikTok telah menjadi ruang penting bagi presentasi diri, perbandingan sosial, dan evaluasi teman sebaya pada remaja, tetapi bukti mengenai hubungannya dengan harga diri masih belum konsisten. Penelitian ini menguji apakah intensitas penggunaan TikTok yang multidimensional berhubungan dengan harga diri global pada siswa sekolah menengah di Bali, Indonesia. Survei korelasional potong lintang melibatkan 225 siswa berusia 15–18 tahun dari Bangli, Denpasar, dan Badung. Setelah uji coba dan penyempurnaan butir, instrumen akhir terdiri atas Skala Intensitas Penggunaan TikTok 13 butir dan Rosenberg Self-Esteem Scale versi Indonesia tujuh butir ($\alpha$ = .902 dan .856). Intensitas penggunaan TikTok berhubungan negatif secara moderat dengan harga diri global, $r(223) = -.346$, 95% CI [−.456, −.225], $p < .001$, dengan varians bersama 12,0%. Spearman's $\rho = -.350$ mengonfirmasi hubungan tersebut. Intensitas TikTok tidak berbeda signifikan di antara ketiga wilayah meskipun terdapat perbedaan dalam penggunaan internet pada tingkat populasi, tetapi perbandingan eksploratif ini tidak dapat ditafsirkan sebagai bukti kesetaraan antarwilayah. Temuan menunjukkan bahwa keterlibatan TikTok yang lebih intensif muncul bersamaan dengan evaluasi diri global yang kurang positif pada remaja. Karena desain penelitian potong lintang, kausalitas tidak dapat disimpulkan. Temuan ini menyoroti potensi relevansi kurasi algoritmik, perbandingan sosial, dan umpan balik sosial yang terlihat dalam literasi digital dan konseling, sementara mekanisme tersebut perlu diuji secara langsung dalam penelitian selanjutnya.

**Kata Kunci:** *harga diri global, Indonesia, intensitas penggunaan TikTok, perbandingan sosial, remaja*

**Abstract**

TikTok has become a prominent setting for adolescent self-presentation, social comparison, and peer evaluation, yet evidence regarding its relationship with self-esteem remains inconsistent. This study examined whether multidimensional TikTok use intensity was associated with global self-esteem among high school students in Bali, Indonesia. A cross-sectional correlational survey involved 225 students aged 15–18 years, recruited equally from Bangli, Denpasar, and Badung. Following pilot testing and item refinement, the final measures comprised a 13-item TikTok Use Intensity Scale and a seven-item Indonesian Rosenberg Self-Esteem Scale, with strong internal consistency ($\alpha$ = .902 and .856). TikTok use intensity was moderately and negatively associated with global self-esteem, $r(223) = -.346$, 95% CI [−.456, −.225], $p < .001$, with 12.0% shared variance. Spearman's $\rho = -.350$ confirmed the robustness of the association. TikTok intensity did not differ significantly across the three regions despite substantial differences in population-level internet use. TikTok intensity did not differ significantly across the three regions despite differences in population-level internet use, although these exploratory comparisons should not be interpreted as evidence of regional equivalence. These findings suggest that more intensive

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TikTok engagement co-occurs with less favorable global self-evaluation among adolescents. Because the study was cross-sectional, causality cannot be inferred. The findings highlight the potential relevance of algorithmic curation, social comparison, and visible social feedback for digital literacy and counseling, while these mechanisms require direct examination in future research.

**Keywords:** *adolescence, global self-esteem, Indonesia, social comparison, TikTok use intensity*

**Corresponding Author:**
Ni Wayan Purnami
Universitas Bali Dwipa, niwayanpurnami2021@gmail.com

## INTRODUCTION

Social media is embedded in adolescent social life, where friendships, identity exploration, and self-evaluation increasingly extend into digital environments. This is developmentally important because adolescence involves heightened sensitivity to social evaluation and the consolidation of identity (Erikson, 1968). Digital platforms can therefore function as social environments in which young people present themselves, interpret feedback, and evaluate their position relative to others (Nesi et al., 2018a, 2018b; Pérez-Torres, 2024). At the same time, emerging evidence suggests that the form and quality of social media engagement may be more informative for adolescent outcomes than time online alone (Avci et al., 2025).

TikTok warrants specific attention because its For You feed continuously recommends short-form content from creators, strangers, and highly visible accounts rather than relying primarily on established friendship networks. Algorithmic curation operates alongside visible social metrics such as likes, comments, views, and follower counts, creating a platform environment in which entertainment, trends, lifestyle displays, and social feedback are continuously presented to users (Bhandari & Bimo, 2022). A systematic review of TikTok research among adolescents identified both creative and social benefits and associations with problematic use, body dissatisfaction, and poorer mental health, while also emphasizing substantial heterogeneity in how TikTok engagement is measured (Conte et al., 2025).

Global self-esteem is particularly relevant in this context because it reflects a person's overall evaluation of personal worth (Rosenberg, 2015). However, research cautions against assuming uniformly harmful effects of digital media. Large-scale studies generally report small average associations between technology use and adolescent well-being, while person-specific evidence indicates that social media experiences may be positive, neutral, or negative across different adolescents (Beyens et al., 2020; Odgers & Jensen, 2020; Orben & Przybylski, 2019; P. Valkenburg et al., 2021). These findings reinforce the need to examine platform-specific engagement rather than relying solely on generic measures of screen time.

TikTok-specific evidence remains inconsistent. A 100-day Dutch diary study linked TikTok use to lower daily self-esteem (van der Wal et al., 2025), whereas a Spanish study found no unique association with Rosenberg self-esteem after addictive use behaviors were controlled (Martínez-Iniesta et al., 2025). Indonesian studies have connected TikTok addiction, social comparison, intensity, self-esteem, and body image

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(Rahmalia & Laili, 2025; Yulianto & Virlia, 2023). In contrast, Dewi and Rina (2025) reported a positive TikTok-to-self-esteem path among 383 Denpasar residents aged 18 to 24, despite a negative path from social comparison to self-esteem. Positive findings have also appeared among university students (Nasidi et al., 2024). The contradiction raises a developmental question about whether the positive pattern among emerging adults extends to secondary school adolescents.

Bali provides a useful context for examining this question because digital access varies considerably across its regions. In 2025, the proportion of residents aged five years and older who had used the internet during the preceding three months was reported as 92.24% in Denpasar, 87.48% in Badung, and 73.50% in Bangli (Badan Pusat Statistik Provinsi Bali, 2025). Recruiting students from these three locations makes it possible to study adolescent TikTok engagement beyond the provincial capital and to explore whether population-level differences in connectivity correspond to differences in platform use. The present study therefore examines the association between multidimensional TikTok use intensity and global self-esteem among 225 high school students aged 15 to 18 years in Bangli, Denpasar, and Badung, Bali. It addresses the developmental inconsistency in prior findings, uses an intensity measure that extends beyond screen time or addiction, and broadens local evidence across three Balinese regions. Examining this relationship in secondary-school students is also educationally relevant because self-evaluation, peer feedback, and digital engagement increasingly intersect within students' everyday social and school experiences. A clearer understanding of these patterns may inform school-based digital literacy, counseling, and student well-being initiatives by shifting attention from screen time alone toward the psychological quality of adolescents' platform engagement.

## LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

### TikTok Use Intensity as a Multidimensional Construct

Social media intensity extends beyond frequency of access. The framework of Ellison et al. (2007) combines behavioral participation, emotional connectedness, and integration into daily routines. For TikTok, intensity can include frequency and duration, attentional salience, active participation through posting or sharing, and emotional investment. Active and passive engagement can relate differently to well-being and social support (Godard & Holtzman, 2024), while observed posting has been linked to adolescent adjustment and support processes (Calvin et al., 2025; Fan et al., 2025). Uses and Gratifications Theory explains why these dimensions vary because users select media to meet needs for entertainment, information, social connection, expression, or escape (Falgoust et al., 2022; Katz et al., 1973).

Intensity is not equivalent to problematic use. Problematic engagement additionally involves impaired control, distress, or interference with functioning, whereas high intensity may occur without dysfunction. Problematic social media use is associated with depression, anxiety, and stress (Shannon et al., 2022), and Salerno et al. (2025) identified adolescents with persistently high problematic use and TikTok time who also showed greater social comparison and lower social support. Intensity may therefore indicate greater platform exposure without itself constituting addiction.

### Theoretical Mechanisms Linking TikTok Intensity and Self-Esteem

Several theories explain why intensive TikTok engagement may relate to self-esteem. Social Comparison Theory proposes that people evaluate themselves partly against others (Festinger, 1954). TikTok's visual and algorithmic environment increases opportunities for upward comparison with attractive, successful, or popular users.

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Adolescents report less favorable momentary self-evaluations during upward than downward comparisons (Burnell et al., 2024), and appearance-focused social media use is associated with poorer body image (de Valle et al., 2021; Markey et al., 2025). TikTok-specific work likewise links platform use with body dissatisfaction through upward appearance comparison and body surveillance (Bissonette Mink & Szymanski, 2022).

Sociometer Theory views self-esteem as an internal monitor of relational value (Leary & Baumeister, 2000). TikTok makes approval countable through likes, comments, followers, and views, potentially increasing the salience of social acceptance. Lower self-concept clarity and TikTok approval anxiety can reinforce one another over time (Dodan & Negru-Subtirica, 2025), and short-video use has been associated with reduced self-concept clarity (Wang & Wang, 2024). Self-Discrepancy Theory further suggests that idealized representations can enlarge perceived gaps between the actual and ideal self and generate negative self-relevant affect (Higgins, 1987).

These mechanisms do not imply uniform effects. The Differential Susceptibility to Media Effects Model argues that outcomes depend on dispositional, developmental, and social susceptibility (P. M. Valkenburg & Peter, 2013), consistent with person-specific studies showing negligible effects for many adolescents and positive or negative effects for smaller groups (Beyens et al., 2020; P. Valkenburg et al., 2021). Development may be especially important because longitudinal evidence identifies periods of heightened social media sensitivity in adolescence (Orben et al., 2022), while high school students remain embedded in peer hierarchies where online activity intersects with popularity and status (Schwartz et al., 2025).

**State of the Art and Research Gap**

The most directly relevant literature reveals three unresolved issues. Developmentally, findings from adolescents are often negative or null, whereas the local study of Balinese emerging adults reported a positive association. Conceptually, prior research alternates among time-based use, addiction, general social networking, and multidimensional engagement, while outcomes include daily self-esteem, global self-esteem, body image, and self-concept clarity. Contextually, Indonesian evidence involving secondary school students remains limited outside major urban centers. Table 1 summarizes the studies that most directly define this gap.

**Table 1. Summary of Previous Studies Relevant to TikTok Use and Adolescent Self-Evaluation**

| Author (Year) | Context and design | Variables | Main findings |
|---|---|---|---|
| Valkenburg et al. (2021) | Netherlands; 387 adolescents aged 13-15; experience sampling | Social media use; self-esteem | Most effects were negligible; minorities showed positive or negative effects. |
| Yulianto & Virlia (2023) | Indonesia; adolescents; cross-sectional | TikTok addiction; social comparison; self-esteem | Both predictors were related to self-esteem. |
| Burnell et al. (2024) | United States; adolescents; ecological momentary assessment | Comparison direction; momentary self-evaluation | Upward comparison was linked to lower momentary self-evaluation. |
| Wang & | China; 721 adolescents; | Short-video use; flow; | Short-video use predicted |

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| Author (Year) | Context and design | Variables | Main findings |
|---|---|---|---|
| Wang (2024) | cross-sectional | self-expansion; self-concept clarity | lower self-concept clarity through proposed mediators. |
| Avci et al. (2025) | Systematic review; 32 studies; N = 19,658 | Social media use; identity development | Engagement quality was more informative than time spent. |
| Conte et al. (2025) | Systematic review; 20 studies; N = 17,336 | TikTok; adolescent mental health | Benefits and risks coexisted; measurement was heterogeneous. |
| Dodan & Negru-Subtirica (2025) | Adolescents; N = 328; two waves | Self-concept clarity; TikTok digital stress | Self-concept clarity and approval anxiety were reciprocally linked. |
| Salerno et al. (2025) | Italy; N = 403 aged 13-18; four waves | Problematic use; social comparison; social support | A vulnerable subgroup showed high problematic use and TikTok time. |
| Martínez-Iniesta et al. (2025) | Spain; N = 632 aged 12-17; cross-sectional | Social network use; addictive behaviors; RSES | Addictive behaviors, not use alone, predicted lower self-esteem. |
| Dewi & Rina (2025) | Denpasar; N = 383 aged 18-24; SEM-PLS | TikTok use; social comparison; self-esteem | TikTok use was positive; social comparison was negative. |
| van der Wal et al. (2025) | Netherlands; 479 adolescents; 100-day diary | Platform-specific use; daily self-esteem | TikTok use predicted lower daily self-esteem. |

**Hypothesis**

Social comparison, sociometer, and self-discrepancy mechanisms support the expectation that intensive TikTok engagement may coincide with less favorable self-evaluation, and recent diary evidence points in the same direction (van der Wal et al., 2025). In contrast, Uses and Gratifications Theory and positive findings among emerging adults suggest that intensive use can also reflect creative expression, connection, or entertainment that may support self-esteem (Dewi & Rina, 2025; Nasidi et al., 2024). Because these competing expectations are theoretically credible, the study tested a nondirectional hypothesis. H1 states that TikTok use intensity is significantly associated with global self-esteem among high school students aged 15 to 18 years in Bangli, Denpasar, and Badung, Bali, Indonesia.

## METHOD

### Research Design

A quantitative cross-sectional correlational design examined naturally occurring variation in TikTok use intensity and global self-esteem without manipulation. TikTok intensity was treated as the predictor and self-esteem as the outcome for statistical organization, not causal inference. A 30-student pilot preceded the main survey of 225 students. Instrument refinement followed scale-development recommendations (Boateng

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et al., 2018), while reporting was guided by STROBE for cross-sectional research (Elm et al., 2007) and relevant COSMIN measurement guidance (Gagnier et al., 2025).

**Setting and Participants**

The study was conducted in senior high schools in Bangli Regency, Denpasar City, and Badung Regency, Bali. These locations represent different broader digital contexts: Denpasar had the province's highest reported internet-use proportion, Badung is a major tourism and commercial area with similarly high connectivity, and Bangli had substantially lower population-level internet use (Badan Pusat Statistik Provinsi Bali, 2025). Region was treated as a contextual sampling stratum rather than as a proxy for individual access.

Eligible participants were aged 15 to 18 years, enrolled in a participating senior high school in one of the three regions, had used TikTok during the previous 30 days, and provided the required assent and parental or guardian permission, or consent where legally appropriate. Pilot participants were excluded from the main sample. Purposive sampling with equal regional quotas yielded 75 participants from each region, as summarized in Table 2. No minimum daily-use threshold was imposed because it would restrict predictor variability. Sensitivity analysis with two-tailed $\alpha = .05$ and power = .80 indicated that N = 225 could detect a population correlation of about $|\rho| \geq .19$.

**Table 2. Sample Distribution Across Research Locations (N = 225)**

| Research location | Target sample | Achieved sample | Proportion |
|---|---|---|---|
| Bangli Regency | 75 | 75 | 33.3% |
| Denpasar City | 75 | 75 | 33.3% |
| Badung Regency | 75 | 75 | 33.3% |
| Total | 225 | 225 | 100.0% |

**Instruments**

TikTok use intensity was defined as behavioral and psychological engagement with the platform. Based on Ellison et al. (2007) and active-passive use distinctions (Godard & Holtzman, 2024), 22 Indonesian-language items initially represented frequency, duration, attentional involvement, active participation, and emotional engagement. Responses ranged from 1, strongly disagree, to 4, strongly agree, with unfavorable items reverse-scored. After refinement, 13 items remained, producing scores from 13 to 52. Because the five proposed components were a conceptual blueprint rather than an established factor structure, dimensionality was evaluated before computing a composite score.

Global self-esteem was assessed with an Indonesian-language Rosenberg Self-Esteem Scale (RSES) (Rosenberg, 2015). Items used the same four-point response format, with negative items reverse-scored so higher totals indicated more favorable self-evaluation. Seven items remained after refinement, producing scores from 7 to 28. Because shortening the 10-item RSES changes its composition, internal consistency and dimensionality were re-examined, especially given evidence of wording-related structures and variable psychometric performance in adolescent samples (Greco et al., 2025; Moksnes et al., 2024).

**Pilot Testing and Instrument Refinement**

The 32-item pilot questionnaire, comprising 22 TikTok items and the 10-item RSES, was administered to 30 high school students. At the pilot stage, corrected item-total correlations, α-if-item-deleted, response variability, and conceptual relevance were

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considered jointly, with .30 used as a screening reference rather than an automatic deletion criterion (Boateng et al., 2018). Seven TikTok items and two RSES items were removed at this stage. Because item-level estimates from a 30-participant pilot are inherently unstable, the pilot screening was treated as an exploratory refinement step rather than evidence of construct validation.

The remaining 15 TikTok items and eight RSES items were subsequently re-examined in the main sample. Two additional TikTok items and one RSES item showed comparatively weak item-total performance and were excluded, resulting in the final 13-item TikTok Use Intensity Scale and seven-item RSES used in the association analysis. This second-stage refinement improved internal consistency but was conducted using the same sample in which the study hypothesis was tested. Accordingly, the resulting psychometric estimates should be interpreted as sample-specific evidence rather than independent validation of the shortened measures. Independent replication is required before the final item sets can be regarded as validated versions of the respective scales. Table 3 summarizes item retention and changes in internal consistency across the pilot and main-study stages.

**Table 3. Item Retention and Internal Consistency Across the Pilot and Main Study Stages**

| Instrument | Initial items | Initial α (pilot) | Retained after pilot | α after pilot | Retained after main screening | Final α (main) |
|---|---|---|---|---|---|---|
| TikTok Use Intensity Scale | 22 | .806 | 15 | .893 | 13 | .902 |
| Rosenberg Self-Esteem Scale | 10 | .748 | 8 | .806 | 7 | .856 |
| Total | 32 | - | 23 | - | 20 | - |

*Note. Pilot n = 30; main study N = 225. In the main sample, α for the 15-item TikTok scale and 8-item RSES before final screening was .873 and .820, respectively.*

**Procedure and Ethical Considerations**

Data collection was conducted from September to October 2026 at participating senior high schools in Bangli Regency, Denpasar City, and Badung Regency. Permission to conduct the study was obtained from the participating schools before data collection. Students were recruited through announcements facilitated by their homeroom teachers, who shared information about the study and the survey link with eligible students.

Participation was voluntary and followed age-appropriate permission and consent procedures. For participants younger than 18 years, parental or guardian permission and student assent were obtained before participation, while participants aged 18 years provided their own consent. Participants were informed about the purpose of the study, the voluntary nature of participation, confidentiality, and their right to discontinue participation without academic consequences.

A standardized Indonesian-language electronic questionnaire was administered across the three study locations. Teachers did not have access to individual responses, and identifying information was kept separate from the analytic data. Because some questions concerned personal self-evaluation, participants were informed of available counseling support. Data were analyzed and reported only in aggregate form, and participant confidentiality was maintained throughout the study. The study involved no experimental intervention, and no formal ethics approval number is reported.

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**Data Analysis**

Data screening covered eligibility, duplicate responses, missing data, reverse scoring, and score distributions. Before testing the study hypothesis, the 15-item TikTok scale and eight-item RSES retained from the pilot stage were re-examined using corrected item-total correlations and α-if-item-deleted, resulting in the final 13-item TikTok scale and seven-item RSES. Because this refinement and hypothesis testing were conducted within the same analytic sample, the resulting psychometric estimates should be interpreted as sample-specific and exploratory rather than as evidence of independent validation. Internal consistency was estimated with Cronbach's α, and principal component analysis examined KMO, first-component eigenvalues, variance explained, and loading ranges. H1 was tested using a two-tailed Pearson correlation, Fisher z 95% confidence interval, and $r^2$, with Spearman's ρ used as a robustness check. Regional means were explored using one-way ANOVA and $\eta^2$.

## RESULTS AND DISCUSSION

### Results

### A. Participant Characteristics

The final analytic sample included 225 students, with 75 participants from each region. Female students represented 55.1% of the sample and male students 44.9%. The gender distribution did not differ significantly from parity, $\chi^2(1) = 2.35$, $p = .125$. Grade representation was also balanced, with 32.9% of participants in Grade X, 32.9% in Grade XI, and 34.2% in Grade XII. Participant demographic characteristics are summarized in Table 4.

**Table 4. Demographic Characteristics of Participants (N = 225)**

| Characteristic | Category | n | % |
|---|---|---|---|
| Gender | Male | 101 | 44.9 |
| | Female | 124 | 55.1 |
| Grade level | Grade X | 74 | 32.9 |
| | Grade XI | 74 | 32.9 |
| | Grade XII | 77 | 34.2 |
| School location | Bangli | 75 | 33.3 |
| | Denpasar | 75 | 33.3 |
| | Badung | 75 | 33.3 |

### B. Item Refinement, Reliability, and Dimensionality

The 15-item TikTok scale and 8-item RSES entering the main-sample analysis already showed good internal consistency, with α = .873 and .820, respectively. Two TikTok items and one RSES item showed comparatively weak corrected item-total correlations and their removal increased α. The resulting 13-item TikTok Use Intensity Scale achieved α = .902, while the 7-item RSES achieved α = .856. All retained corrected item-total correlations exceeded the .30 screening reference. Sampling adequacy was also strong. KMO values were .942 for TikTok intensity and .895 for self-esteem. The first components had eigenvalues of 6.009 and 3.766 and accounted for 46.22% and 53.79% of variance, with substantial loadings across all retained items. These findings provided preliminary evidence consistent with the use of a single composite score for each construct in the present sample. However, because the analyses

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were exploratory and the shortened measures were not evaluated using confirmatory factor analysis or an independent validation sample, they should not be interpreted as establishing comprehensive construct validity. The reliability and exploratory dimensionality results are summarized in Table 5.

**Table 5. Reliability and Exploratory Dimensionality of the Final Scales (N = 225)**

| Statistic | TikTok Use Intensity (13 items) | Global Self-Esteem (7 items) |
|---|---|---|
| Cronbach's α before final screening | .873 (15 items) | .820 (8 items) |
| Cronbach's α, final version | .902 | .856 |
| Corrected item-total correlation range | .511-.691 | .570-.675 |
| Kaiser-Meyer-Olkin index | .942 | .895 |
| First-component eigenvalue | 6.009 | 3.766 |
| Variance explained by first component | 46.22% | 53.79% |
| First-component loading range | .581-.752 | .687-.780 |

*Note. Dimensionality was examined with principal component analysis.*

## C. Descriptive Statistics

The mean TikTok use intensity score was 36.69 (SD = 9.17, Mdn = 38.00), corresponding to an average item score of 2.82 on the four-point response scale. Observed TikTok scores ranged from 15 to 52, indicating substantial variability. Global self-esteem had a mean of 19.84 (SD = 5.42, Mdn = 21.00), equivalent to an average item score of 2.83, and observed scores covered the full possible range from 7 to 28. In both distributions, the median was slightly higher than the mean, indicating mild negative skew. Descriptive statistics for both study variables are presented in Table 6.

**Table 6. Descriptive Statistics for TikTok Use Intensity and Global Self-Esteem (N = 225)**

| Variable | Possible range | Observed range | M | SD | Mdn | Mean item score |
|---|---|---|---|---|---|---|
| TikTok use intensity (13 items) | 13-52 | 15-52 | 36.69 | 9.17 | 38.00 | 2.82 |
| Global self-esteem (7 items) | 7-28 | 7-28 | 19.84 | 5.42 | 21.00 | 2.83 |

Regional descriptive statistics for TikTok use intensity and global self-esteem are presented in Table 7. TikTok intensity means were highly similar across Bangli, Denpasar, and Badung. The difference across Bangli, Denpasar, and Badung was not statistically significant, $F(2, 222) = 0.38$, $p = .688$, $\eta^2 = .003$. This similarity is notable because the population-level internet-use gap between Denpasar and Bangli was 18.74 percentage points. Mean self-esteem was somewhat higher in Bangli than in Denpasar and Badung, but the regional difference was also non-significant and small, $F(2, 222) = 1.65$, $p = .195$, $\eta^2 = .015$. These exploratory comparisons should not be interpreted as tests of regional equivalence because the study was not powered for small regional effects.

**Table 7. TikTok Use Intensity and Global Self-Esteem by Region**

| Region | n | TikTok use intensity M (SD) | Global self-esteem M (SD) |
|---|---|---|---|
| Bangli | 75 | 35.99 (9.18) | 20.76 (5.15) |

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| Region | n | TikTok use intensity M (SD) | Global self-esteem M (SD) |
|---|---|---|---|
| Denpasar | 75 | 36.83 (9.67) | 19.31 (5.57) |
| Badung | 75 | 37.27 (8.72) | 19.45 (5.47) |
| F(2, 222) | | 0.38 ($p = .688$; $\eta^2 = .003$) | 1.65 ($p = .195$; $\eta^2 = .015$) |

*Note. F statistics are from one-way ANOVA. Non-significant results should not be interpreted as evidence that the regions are equivalent.*

### D. Association Between TikTok Use Intensity and Global Self-Esteem

Pearson's correlation showed a statistically significant moderate negative association between TikTok use intensity and global self-esteem, $r(223) = -.346$, 95% CI [−.456, −.225], $p < .001$. Students reporting more intensive engagement tended to report less favorable global self-evaluations. The two composite scores shared approximately 12.0% of their variance, $r^2 = .120$. Spearman's $\rho = -.350$, $p < .001$, was almost identical to the Pearson coefficient, indicating that the substantive result was robust to a rank-based specification. The confidence interval excluded correlations smaller in absolute value than .225 and therefore lay beyond the minimum effect detectable by the study's sensitivity analysis. H1 was supported. The correlation results are summarized in Table 8.

**Table 8. Correlation Between TikTok Use Intensity and Global Self-Esteem (N = 225)**

| Statistic | Result |
|---|---|
| Pearson's r | −.346 |
| 95% confidence interval | [−.456, −.225] |
| t(223) | −5.51 |
| p value, two-tailed | < .001 |
| Coefficient of determination, $r^2$ | .120 |
| Spearman's ρ | −.350 ($p < .001$) |

## Discussion

### A. Principal Finding

The study identified a moderate negative association between multidimensional TikTok intensity and global self-esteem. Adolescents reporting stronger behavioral, attentional, participatory, and emotional engagement tended to evaluate their overall worth less favorably. The result was stable with Spearman's correlation and the confidence interval supported at least a small-to-moderate association. Yet only 12% of self-esteem variance was shared with TikTok intensity, consistent with the view that self-esteem reflects many developmental, family, peer, and personal influences (Odgers & Jensen, 2020).

The association is stronger than many estimates based on generic screen time. Large studies often find that digital technology use explains less than 1% of adolescent well-being variance (Orben & Przybylski, 2019), while meta-analytic effects become somewhat larger when engagement quality is considered (Fassi et al., 2024). The present measure may capture more psychologically meaningful involvement because it combines duration with attention, participation, and emotional investment (Avci et al., 2025; Ellison et al., 2007). Shared self-report measurement at a single occasion may also

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inflate covariance, so both substantive and methodological explanations remain plausible.

### B. Developmental Contrast With Emerging Adults

The result contrasts with the positive TikTok-to-self-esteem path reported among 18- to 24-year-old Denpasar residents (Dewi & Rina, 2025) and university students elsewhere (Nasidi et al., 2024). Developmental sensitivity is one explanation. Adolescents are highly responsive to peer evaluation while identity remains under consolidation, and online behavior is embedded in school status systems (Erikson, 1968; Nesi et al., 2018b; Schwartz et al., 2025). Idealized content and countable feedback may therefore carry greater self-evaluative weight, consistent with developmental windows of social media susceptibility (Orben et al., 2022) and with Social Comparison and Sociometer Theory (Festinger, 1954; Leary & Baumeister, 2000).

Use motives and platform experiences may also differ across developmental stages. Emerging adults may use TikTok for information, entertainment, or creative expression, whereas adolescents may be more sensitive to appearance-related comparison and visible social approval (Bissonette Mink & Szymanski, 2022; Falgoust et al., 2022; Markey et al., 2025). These mechanisms were not measured directly in the present study and should therefore be treated as theoretically plausible explanations rather than demonstrated pathways. Dewi and Rina (2025) likewise reported a negative social-comparison path despite a positive overall TikTok-use path. The apparent developmental contrast should remain hypothesis-generating because their mediation coefficient is not equivalent to the present bivariate correlation and the studies used different measures. Direct comparisons using identical instruments and explicit measures of the proposed mechanisms are needed.

### C. Convergence With International Evidence

The negative direction converges with international evidence. TikTok use predicted lower daily self-esteem in a 100-day diary study (van der Wal et al., 2025), short-video use has been linked to lower self-concept clarity (Wang & Wang, 2024), and approval anxiety can reinforce lower self-concept clarity over time (Dodan & Negru-Subtirica, 2025). These findings align with evidence that upward comparison coincides with poorer momentary self-evaluation (Aryal et al., 2025; Burnell et al., 2024). Convergence across daily within-person and stable between-person measures strengthens the case that TikTok engagement is relevant to adolescent self-evaluation.

The Spanish EHDLA study qualifies this interpretation because general social network use was not independently associated with self-esteem after addictive behaviors were controlled (Martínez-Iniesta et al., 2025). The present intensity measure includes emotional and attentional involvement, so one possible explanation is that the observed association partly reflects more psychologically salient forms of engagement. However, the present study did not directly measure problematic use, social comparison, approval sensitivity, self-discrepancy, or body image, and these variables therefore cannot be treated as established mechanisms underlying the observed association. Reverse directionality is also plausible: adolescents with lower self-esteem may be more likely to seek validation, distraction, or sustained engagement through TikTok. Cross-sectional data cannot distinguish among these possibilities, and longitudinal evidence suggests that associations may be bidirectional or attenuate after confounding is considered (Orben et al., 2022; Plackett et al., 2023).

### D. Platform-Saturated Adolescence Across Regional Contexts

TikTok intensity was almost identical across Bangli, Denpasar, and Badung even though population-level internet use differs markedly among these areas. The $\eta^2$ of .003

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indicates that region accounted for very little variation in TikTok intensity within this sample. One interpretation is that smartphone-based short-video use has become a common element of adolescent peer culture that is less sensitive to the broader urban and connectivity differences visible in population statistics. Self-esteem was slightly higher on average in Bangli, but the effect was small and statistically non-significant. Because these regional comparisons were exploratory and not designed to establish equivalence, the similar mean levels should be interpreted descriptively rather than as evidence that regional context is unimportant. The pattern indicates only that, within this sample of TikTok-using students, engagement intensity was broadly comparable across the three locations despite differences in population-level internet use. Further research with regionally representative samples is needed before broader conclusions about geographic differences in adolescent TikTok engagement can be drawn. The regional pattern also helps distinguish access from engagement. Population-level internet statistics describe whether residents use the internet, whereas the present scale captures the intensity with which adolescent TikTok users integrate a specific platform into daily life. Similar TikTok scores across the three regions therefore do not mean that broader digital inequalities have disappeared. Rather, among students who met the study's TikTok-use eligibility criterion, the depth of engagement was comparable. This distinction is important because infrastructure gaps and platform saturation can coexist. Schools in less urbanized areas may face the same social-comparison and feedback-related issues as schools in highly connected urban centers even when the surrounding population differs in internet penetration.

### E. Theoretical and Practical Implications

The findings contribute to platform-specific research on adolescent social media use in three ways. First, the negative association between TikTok use intensity and global self-esteem is consistent with the Differential Susceptibility to Media Effects Model, which emphasizes that developmental characteristics shape responses to media exposure (P. M. Valkenburg & Peter, 2013). The contrast with positive findings reported among emerging adults further suggests that the meaning and consequences of intensive TikTok engagement may vary across developmental stages. Second, the results support conceptualizing TikTok engagement as more than time spent on the platform. By incorporating attentional involvement, active participation, and emotional engagement alongside frequency and duration, the intensity measure captures psychologically meaningful aspects of platform use that may be obscured by screen-time indicators alone (Kross et al., 2021; Odgers & Jensen, 2020). Third, the group-level association should not be interpreted as a uniform effect, because adolescents may differ substantially in their susceptibility to social media experiences (Beyens et al., 2020; P. Valkenburg et al., 2021).

Practically, the findings suggest that digital well-being initiatives should extend beyond recommendations to limit screen time. Schools, counselors, and parents may benefit from helping adolescents understand algorithmic curation, recognize idealized self-presentation, reflect critically on upward social comparison, and reduce the dependence of self-worth on visible feedback such as likes, views, and comments (Bhandari & Bimo, 2022). Counseling assessment may also consider the emotional and attentional significance of TikTok use rather than focusing solely on duration. Because the present study is cross-sectional, these implications should be treated as directions for prevention and support rather than evidence that reducing TikTok use will directly improve self-esteem.

### F. Limitations and Future Research

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Several limitations constrain interpretation. Cross-sectional data cannot establish temporal order, and purposive quota sampling limits generalizability. Students within the same schools may also share unmodeled influences. Both constructs were self-reported at one occasion, creating possible recall, social-desirability, and common-method effects. Item refinement and hypothesis testing were conducted within the same main sample, creating a risk that the final item configuration and its psychometric performance are partly sample-specific. Although the retained scales showed good internal consistency and exploratory dimensionality in the present data, these findings do not constitute independent validation of the shortened measures. The 13-item TikTok scale and seven-item RSES therefore require replication and validation in an independent sample before their final item structures are treated as established. Construct validity was examined only through exploratory dimensionality indicators in the present sample and therefore remains provisional. Future psychometric studies should evaluate the shortened measures in independent samples using confirmatory factor analysis, convergent and discriminant validity evidence, and measurement invariance across relevant groups. For the RSES in particular, potential wording-related factor structures should also be examined.

Future studies should use longitudinal or experience-sampling designs to separate between-person differences from within-person change, directly test social comparison, approval-contingent self-worth, body image, and related mediators, and examine age, gender, peer support, and use motives as moderators (Aryal et al., 2025; Fan et al., 2025). Comparing adolescents and emerging adults with identical measures would directly test the proposed developmental contrast. Objective usage logs or observed posting could supplement self-report data (Calvin et al., 2025), and the TikTok intensity measure should be independently validated across Indonesian settings using transparent COSMIN-aligned reporting (Gagnier et al., 2025).

## CONCLUSION

This study found that more intensive TikTok engagement was associated with lower global self-esteem among high school students in Bangli, Denpasar, and Badung, Bali. The negative association contrasts with positive findings previously reported among Balinese emerging adults, suggesting that developmental stage may shape how TikTok engagement relates to self-evaluation. TikTok use intensity was also broadly similar across the three regions despite differences in population-level internet use, indicating that intensive short-video engagement may extend across diverse local contexts. These findings should not be interpreted as evidence that TikTok use causes lower self-esteem, because the cross-sectional design does not establish temporal or causal relationships. Rather, the findings highlight the importance of considering the psychological quality of adolescents' platform engagement beyond screen time alone. School-based digital literacy and counseling may therefore consider issues such as algorithmic curation, social comparison, and sensitivity to visible social feedback as potentially relevant aspects of adolescents' digital experiences, while future longitudinal research should directly test whether these mechanisms help explain the observed association.

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