



## Online Behavioral Addictions and Self-Identity among University Students: A Mixed-Methods Study

**Bahman Moghimi (PhD, DBA)**

Academic Staff at the School of Business and Administrative Studies. The University of Georgia, Tbilisi. Georgia

### Article info

Received: 10.11.2025

Accepted: 28.12.2025

Available Online: 03.01.2025

Checked for Plagiarism: Yes

### Keywords:

Online behavioral addiction, self-identity, university students, social media addiction, digital wellbeing

### ABSTRACT

Online behavioral addictions are an increasing psychosocial concern among university students, a group simultaneously navigating a sensitive period of identity formation and consolidation. This study takes a differentiated approach to problematic digital engagement by examining distinct online addiction profiles and their associations with self-identity outcomes. Using a cross-sectional mixed-methods design, survey data from university students (aged 18-25) were analyzed using correlation, regression, and group-difference tests, and were complemented by a small set of semi-structured interviews to contextualize students' identity-related experiences. Overall, higher problematic online engagement was associated with weaker identity resources (including self-esteem, identity stability, self-regulation, and academic self-concept) and greater identity strain (including identity confusion and identity anxiety). Associations varied by behavior: social media overuse was linked with identity confusion, validation seeking with lower identity stability, smartphone dependency with weaker self-regulation, gaming addiction with lower academic self-concept, and FoMO with higher identity anxiety. Qualitative themes echoed these patterns, highlighting online-only confidence, persistent social comparison, and difficulty maintaining a coherent offline self. Taken together, the findings support a profile-based interpretation of online behavioral addictions and point to targeted, identity-supportive digital wellbeing interventions within university settings.

### Introduction

University students represent a population undergoing rapid psychological and social transitions. During this phase, individuals actively shape their personal identity by exploring values, goals, roles, and interpersonal relationships. At the same time, they are heavily exposed to digital technologies and online platforms, making them particularly vulnerable to online behavioral addictions [1]. Online behavioral addictions are characterized by persistent and compulsive patterns of digital engagement that may lead to loss of control, escalation of use, distress when unable to engage, and functional impairment in everyday functioning [2]. Common examples include social media addiction, online gaming disorder, and problematic smartphone use. Because identity development in emerging adulthood is closely tied to feedback, belonging, achievement, and self-evaluation, excessive dependence on digital

environments may shape identity-related processes in ways that are not always healthy. This study examines how online behavioral addictions relate to self-identity among university students, focusing on cognitive, emotional, and social dimensions. The purpose is to clarify how excessive online behavior may disrupt, distort, or reshape identity formation, and to provide an evidence-informed base for student wellbeing support and prevention strategies [3].

### Research goals

- ✓ To examine the relationship between online behavioral addictions and self-identity among university students.
- ✓ To compare how different forms of problematic online engagement (e.g., social media overuse, gaming addiction, smartphone dependency, validation seeking) relate to identity-related outcomes.

\*Corresponding Author: **Bahman Moghimi** (B.Moghimi@ug.edu.ge - ORCID: 0000-0002-7740-0075)

- ✓ To derive practical implications for student support and digital wellbeing interventions in university settings.

### Research questions

RQ1. How is overall online behavioral addiction related to self-identity outcomes among university students?

RQ2. How is social media addiction related to identity confusion among university students?

RQ3. How are online gaming addiction and smartphone dependency related to academic self-concept and self-regulation?

RQ4. How is online validation seeking related to identity stability among university students?

### Hypotheses

H1. Higher online behavioral addiction is associated with lower self-esteem.

H2. Higher daily social media use (hours per day) is associated with higher identity confusion.

H3. Higher online gaming addiction is associated with lower academic self-concept.

H4. Higher smartphone dependency is associated with lower self-regulation skills.

H5. Higher online validation seeking is associated with lower identity stability.

H6. Higher FoMO is associated with higher identity anxiety.

### Literature Review

#### Online Behavioral Addictions:

Online behavioral addictions are commonly explained through behavioral dependency models in which reward-seeking (e.g., pleasure, stimulation, social approval) and distress-avoidance (e.g., escaping anxiety, boredom, loneliness) reinforce repeated online engagement until it becomes difficult to regulate. In university populations, this pattern is often intensified by irregular routines, academic pressure, and constant access to digital platforms. Empirical work suggests that students experiencing higher psychological distress or those with weaker emotional regulation skills are more vulnerable to problematic online use because online activities can function as a quick, reliable mood-management tool [4]. Over time, repeated reliance on online engagement for relief or reward may contribute to loss of control and functional impairment across academic, social, and personal domains.

#### Self-Identity in Emerging Adulthood

Self-identity refers to a relatively coherent sense of “who I am,” which is reflected in self-esteem, self-concept clarity, perceived autonomy, and stability of self-definition across situations and time. Emerging adulthood especially the university period is a sensitive developmental window because identity is actively negotiated through new social networks,

changing roles, increased independence, and continuous performance feedback (academic and social). In this stage, identity is shaped not only by internal reflection but also by external influences such as cultural norms, peer comparison, and achievement experiences, which can either strengthen identity coherence or amplify uncertainty and self-doubt [5].

#### Mechanisms Linking Online Addictions and Identity

Existing research indicates several mechanisms through which online behavioral addictions may relate to identity outcomes among university students:

- ✓ **Social comparison:** Social media environments frequently expose users to idealized representations of others, which can intensify upward comparison and undermine self-evaluation, especially when self-esteem is already fragile.
- ✓ **Reduced offline engagement:** Excessive online involvement can displace real-world interactions and experiences (friendships, extracurricular activity, community participation) that are central to experimenting with roles and building a stable identity. When offline engagement declines, opportunities for identity consolidation may weaken [6].
- ✓ **Fragmented self-presentation:** Managing different online personas across platforms may encourage inconsistent self-presentation, potentially increasing internal conflict and reducing self-concept clarity.
- ✓ **Dependence on external validation:** Likes, comments, shares, and virtual rewards may become a primary source of self-worth, shifting identity formation from internal values toward external approval.
- ✓ **Escapism and avoidance coping:** Students may use online platforms to avoid stress, social anxiety, or academic pressure. While this may relieve distress short-term, long-term avoidance can reduce coping capacity and contribute to identity confusion.

Overall, the literature suggests that problematic online engagement can influence identity development through both social-cognitive pathways (comparison, validation, self-presentation) and behavioral displacement pathways (reduced offline exploration and interaction). The studies summarized in Table 1 collectively illustrate these relationships and provide the empirical grounding for the current study’s focus on online behavioral addictions and self-identity among university students [7].

**Table 1.** Analytical Literature Review Table

Study Focus	Methodology	Key Findings	Relevance to Current Topic
Social media addiction among young adults	Systematic review	Identified behavioral, emotional, and cognitive symptoms linked to excessive online use	Shows how digital overuse reshapes emotional and identity development
Facebook addiction and personality traits	Cross-sectional survey	Found correlations between Facebook addiction, narcissism, and low self-esteem	Demonstrates how online habits become integrated into self-concept
Internet use and psychological well-being	Meta-analysis	High social media use associated with poorer self-image	Highlights psychological risks shaping identity in students
Smartphone dependency among university students	Quantitative survey	Smartphone overuse linked to identity confusion and reduced self-control	Connects mobile addiction to weakened identity stability
Anxiety and problematic smartphone use	Empirical study	Anxiety predicts excessive smartphone checking and online reassurance-seeking	Explains how digital addiction influences emotional foundations of self-identity
Social-network-use disorder	Theoretical model	Cognitive biases and expectancies drive habitual overuse	Shows how self-identity is shaped by online validation processes
Instagram addiction in students	Survey-based research	Students tied self-worth to online feedback and appearance-focused content	Links self-identity formation directly to online platforms
Fear of missing out (FoMO) and social media addiction	Quantitative analysis	FoMO increases addictive use patterns and reduces self-esteem	Demonstrates how comparison culture affects identity development

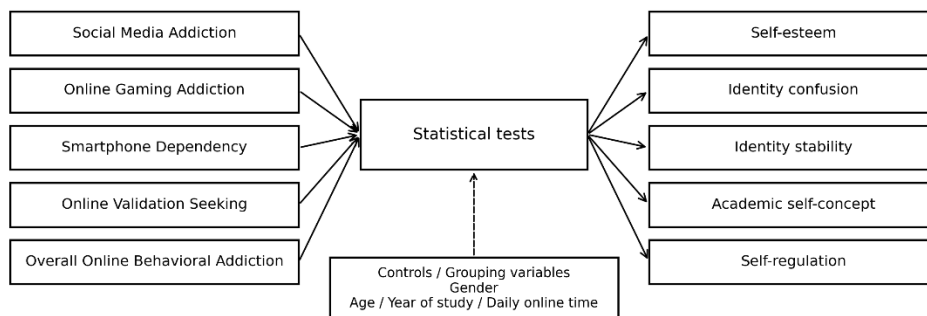
**Conceptual framework**

This study proposes that online behavioral addictions conceptualized as overall problematic online engagement and specific forms such as social media addiction, online gaming addiction, smartphone dependency, and online validation seeking are associated with differences in self-identity among university students [8]. These associations are theoretically explained through proposed pathways including increased social comparison, reduced offline engagement, fragmented self-presentation across digital settings, greater reliance on external validation, and escapism or avoidance coping.

Self-identity is examined through key outcomes relevant to emerging adulthood, including self-esteem, identity confusion, identity stability, academic self-concept, and self-regulation. The

framework also acknowledges that demographic characteristics (e.g., gender and year of study) and intensity of online use may shape the strength of these relationships and should be treated as control or grouping variables during analysis.

The below figure summarizes the study variables and the tested relationships. Online behavioral addiction indicators (social media addiction, online gaming addiction, smartphone dependency, online validation seeking, and overall online behavioral addiction) are examined in relation to self-identity outcomes (self-esteem, identity confusion, identity stability, academic self-concept, and self-regulation). Controls/grouping variables (e.g., gender and, where available, age/year of study/daily online time) are incorporated within the statistical analyses.



**Figure 1.** Empirical association model of online behavioral addictions and self-identity outcomes among university students

This model presents the study's empirical structure: the predictors represent different forms of problematic online engagement, and the outcomes represent key self-identity dimensions relevant to university students. Relationships are tested using correlation, regression, and group comparisons (t-test/ANOVA), depending on the hypothesis and variable type. Controls are included to reduce confounding and to allow subgroup interpretation where relevant. Arrows indicate hypothesized associations, not causal effects.

### Methodology

**Design:** This study used a cross-sectional design based on an online survey of university students, with an additional small qualitative component to contextualize the quantitative patterns.

**Participants:** A total of 350 university students aged 18-25 from multiple faculties participated in the survey. From the survey participants, a subsample of 30 students additionally took part in semi-structured interviews focusing on patterns of online use and perceived identity-related challenges [9].

**Measures:** All constructs were assessed using multi-item Likert-type measures adapted from prior studies. Unless otherwise stated, items were rated on a 5-point scale (1=strongly disagree, 5=strongly agree). For each construct, a composite score was computed as the mean of its items; higher scores indicate higher levels of the construct. The survey included measures of online behavioral addiction indicators (social media addiction, online gaming addiction, smartphone dependency, online validation seeking, overall problematic online engagement) and identity-related outcomes (self-esteem, identity confusion, identity stability, academic self-concept, self-regulation, FoMO, and identity anxiety).

**Procedure:** Survey data were collected electronically and anonymously after voluntary participation. Interviews were conducted using a semi-structured format and focused on students' digital use experiences and perceived identity-related difficulties [10].

**Data analysis:** Quantitative analyses included descriptive statistics, correlation analysis, and regression models examining associations between addiction indicators and identity outcomes. Independent-samples t-tests were used to examine gender differences on key variables, and one-way ANOVA was applied when comparisons involved more than two groups (e.g., addiction-level categories). For the ANOVA, gaming addiction scores were divided into three equal-sized groups (tertiles): low (non-addicted), moderate (mild), and high. Statistical significance was evaluated using conventional thresholds (e.g.,  $p < 0.05$ ). Qualitative interview responses were summarized thematically to support interpretation of the quantitative results.

**Qualitative analysis:** Interview responses were analyzed using a brief thematic analysis. Responses were first read repeatedly to become familiar with the content, then coded into meaning units, and finally organized into broader themes reflecting recurring identity-related experiences in digital contexts. Themes were refined by checking consistency across participants and selecting representative excerpts.

### Ethics Statement

Participation was voluntary, and all participants provided informed consent prior to completing the online questionnaire. Respondents were informed about the purpose of the study, the approximate time required, and their right to discontinue at any time without penalty. No personally identifying information was collected, and responses were recorded anonymously. Data were stored securely and accessed only for research purposes, and findings are reported in aggregate form to protect confidentiality. For the interview subsample, participants provided additional consent for participation and audio-recording (where applicable), and interview responses were de-identified during transcription and analysis. The study procedures were conducted in accordance with standard ethical principles for research involving human participants and local institutional guidelines.

### Findings

#### Statistical approach and reporting conventions:

Because the study is cross-sectional, all results are interpreted as associations (not causal effects). Hypotheses were evaluated using (1) Pearson correlations for bivariate associations, (2) linear regression for predictive association models, and (3) one-way ANOVA for group comparisons.

#### Core formulas:

✓ **Pearson correlation**

$$r_{XY} = \frac{\text{Cov}(X, Y)}{SD_X \cdot SD_Y}$$

✓ **Linear regression**

$$Y = \alpha + \beta X + \varepsilon$$

✓ **One-way ANOVA**

$$F = \frac{MS_{\text{between}}}{MS_{\text{within}}}$$

#### Quantitative results

##### H1/RQ1: Overall online behavioral addiction and self-esteem

A negative association was found between overall online addiction and self-esteem ( $r = -0.47$ ,  $p < 0.001$ ). This indicates that students with higher online addiction scores tended to report lower self-esteem.

**Table 2.** Correlation between Online Behavioral Addiction and Self-Esteem

Variable	Mean	SD	r	p-value
Online Addiction Score	68.4	12.7	-0.47	<0.001
Self-Esteem Score	31.2	6.5	-	-

**Decision: H1 supported.**

**H2 / RQ2: Social media overuse and identity confusion**

Regression results show that social media usage was positively associated with identity confusion

( $\beta=0.52$ ,  $p<0.001$ ). In plain terms: higher daily social media use corresponded to higher reported identity confusion.

**Table 3.** Relationship between Social Media Overuse and Identity Confusion

Predictor	B	SE	$\beta$	t(df)	p	R <sup>2</sup>	F(df)
Social Media Use (hrs/day)	1.94	0.17	0.52	11.36 (348)	<0.001	0.27	128.97 (1,348)

**Decision: H2 supported.**

**H3 / RQ3: Gaming addiction level and academic self-concept**

A one-way ANOVA found significant group differences in academic self-concept across gaming-

addiction levels ( $F=12.54$ ,  $p<0.001$ ). Academic self-concept was highest among non-addicted students and lowest among students in the high-addiction group.

**Table 4.** Effect of Online Gaming Addiction on Academic Self-Concept

Group	Mean	SD	F (ANOVA)	p-value
Non-addicted Students	74.1	9.2	12.54	<0.001
Mild Addiction	68.5	10.3	-	-
High Addiction	59.3	12.1	-	-

Social media use was a significant predictor of identity confusion ( $\beta=0.52$ ,  $t(348)=11.36$ ,  $p<0.001$ ). The model explained approximately 27% of the variance in identity confusion ( $R^2=0.27$ ). In practical terms, higher daily social media use (hours/day) was associated with higher identity confusion.

**Decision: H3 supported.**

**H4 / RQ3: Smartphone dependency and self-regulation**

A negative correlation was observed between smartphone dependency and self-regulation ( $r=-0.41$ ,  $p<0.01$ ). This suggests that higher dependency is associated with weaker self-regulation skills.

**Table 5.** Relationship between Smartphone Dependency and Self-Regulation

Variable	Mean	SD	r	p-value
Smartphone Dependency Score	72.8	11.5	-0.41	<0.01
Self-Regulation Score	28.4	7.3	-	-

**Decision: H4 supported.**

**H5 / RQ4: Online validation seeking and identity stability**

Regression results indicate that online validation seeking was negatively associated with identity

stability ( $\beta=-0.49$ ,  $p<0.001$ ). Students who relied more on online approval tended to report lower stability in their sense of identity.

**Table 6.** Simple linear regression predicting Identity Stability from Validation Seeking

Predictor	B	SE	$\beta$	t(df)	p	R <sup>2</sup>	F(df)
Validation Seeking	-0.40	0.04	-0.49	-10.49 (348)	<0.001	0.24	109.95 (1,348)

Validation seeking significantly predicted lower identity stability ( $\beta=-0.49$ ,  $t(348)=-10.49$ ,  $p<0.001$ ). The model explained approximately 24% of the variance in identity stability ( $R^2=0.24$ ). This indicates that stronger validation-seeking tendencies were associated with lower identity stability.

**H5 supported.**

**H6: FoMO and identity anxiety**

To align the hypothesis set with the reported analysis, an additional hypothesis was tested:

**H6:** Higher FoMO is associated with higher identity anxiety.

A strong positive correlation was found ( $r=0.58$ ,  $p<0.001$ ), indicating that higher FoMO scores corresponded to higher identity anxiety.

**Table 7.** Relationship between FoMO and Identity Anxiety

Variable	Mean	SD	r	p-value
FoMO Score	70.2	9.7	0.58	<0.001
Identity Anxiety Score	25.3	6.4	-	-

**Table 8.** Hypothesis summary (quick view)

Hypothesis	Statistical test	Key result	Decision
H1	Correlation	$r = -0.47, p < 0.001$	Supported
H2	Regression	$\beta = 0.52, p < 0.001$	Supported
H3	ANOVA	$F = 12.54, p < 0.001$	Supported
H4	Correlation	$r = -0.41, p < 0.01$	Supported
H5	Regression	$\beta = -0.49, p < 0.001$	Supported
H6	Correlation	$r = 0.58, p < 0.001$	Supported

**Qualitative findings (interview themes; n=30)**

The qualitative component supported the quantitative pattern by clarifying how heavy online engagement can shape identity-related experiences in everyday life. Three recurring themes were identified:

- ✓ **Online confidence vs. offline uncertainty:** Students described feeling more confident and “more in control” online than in face-to-face settings. Illustrative excerpt (paraphrased): “Online I can present myself better; offline I feel less sure.”
- ✓ **Persistent social comparison:** Many students reported frequent comparison with others’ curated lives, which increased insecurity and self-doubt. Illustrative excerpt (paraphrased): “When I scroll, I always feel I’m behind everyone else.”
- ✓ **Difficulty maintaining a consistent offline self:** Students described challenges “being themselves” offline after prolonged immersion in online communities, including uncertainty about how to act or communicate outside digital spaces. Illustrative excerpt (paraphrased): “Offline, I don’t know how to act like the person I am online.”

Taken together, these themes help interpret why higher online addiction indicators may co-occur with lower self-esteem and identity stability, and with higher identity confusion and identity anxiety, while maintaining the key limitation that the quantitative findings reflect associations rather than causal effects.

**Direct answers to the research questions**

- ✓ **RQ1:** Overall online behavioral addiction is significantly related to self-identity outcomes; specifically, it is negatively associated with self-esteem ( $r=-0.47$ ,  $p<0.001$ ).

- ✓ **RQ2:** Social media addiction/overuse is positively associated with identity confusion ( $\beta=0.52$ ,  $p<0.001$ ).
- ✓ **RQ3:** Online gaming addiction is associated with lower academic self-concept (group differences across gaming-addiction levels;  $F=12.54$ ,  $p<0.001$ ), and smartphone dependency is negatively associated with self-regulation ( $r=-0.41$ ,  $p<0.01$ ).
- ✓ **RQ4:** Online validation seeking is negatively associated with identity stability ( $\beta=-0.49$ ,  $p<0.001$ ).

Additional hypothesis test (not framed as a research question): FoMO is positively associated with identity anxiety ( $r=0.58$ ,  $p<0.001$ ), supporting H6.

**Discussion**

This study examined how different forms of online behavioral addiction relate to self-identity outcomes among university students. Across the tested hypotheses, the results show a consistent pattern: higher levels of problematic online engagement are associated with weaker identity-related resources (lower self-esteem, lower identity stability, lower self-regulation, and lower academic self-concept) and higher identity strain (greater identity confusion and identity anxiety) [24].

**Linking results to research questions and hypotheses**

**RQ1/H1 (overall online addiction and self-esteem):** The negative association between overall online addiction and self-esteem suggests that students with heavier problematic online engagement tend to report weaker self-evaluations. One plausible interpretation is that excessive online involvement increases exposure to social evaluation cues and comparison opportunities, while reducing time for offline roles and relationships that typically reinforce stable self-worth. In this way, self-esteem may become more fragile because it is increasingly

shaped by external signals rather than sustained personal competencies and commitments [11].

**RQ2/H2 (social media addiction and identity confusion):** The positive relationship between social media use and identity confusion aligns with the idea that social media environments continuously present curated and idealized standards for “who to be.” Frequent exposure to such standards can intensify uncertainty about values, goals, and social roles, especially during emerging adulthood when identity is still being consolidated. In effect, social media may amplify identity exploration into identity confusion when comparison and impression-management become central rather than reflective self-definition [12].

**RQ3/H3-H4 (gaming addiction, smartphone dependency, academic self-concept, and self-regulation):** The significant differences in academic self-concept across gaming-addiction groups indicate that higher gaming addiction is linked to weaker academic self-perception. A deductive reading is that intensive gaming can displace academic engagement and mastery experiences key inputs that normally strengthen academic identity and competence beliefs. In parallel, the negative association between smartphone dependency and self-regulation supports the view that persistent access to immediate rewards and constant interruptions can undermine attention control and goal-consistent behavior, reducing the self-regulatory capacity that supports stable identity development and effective functioning [13]. Together, these findings highlight a dual process: gaming is more strongly connected to identity in the academic domain, while smartphone dependency is more strongly connected to identity-relevant self-control capacities.

**RQ4/H5 (validation seeking and identity stability):** The negative association between online validation seeking and identity stability supports the “digital self” argument: when self-worth and self-definition depend heavily on likes, comments, followers, or other external metrics, identity becomes more vulnerable to fluctuation. In this situation, identity stability is weakened because the reference point for “who I am” shifts toward unstable feedback cycles rather than enduring internal standards and commitments [14].

**H6 (FoMO and identity anxiety):** The strong positive relationship between FoMO and identity anxiety is theoretically coherent. FoMO reflects heightened sensitivity to social belonging and relative status, which can increase worry about missing opportunities, falling behind peers, or making the “wrong” life choices. Such pressure fits naturally with identity anxiety, because it promotes monitoring and comparison rather than consolidation and commitment [15].

**Integrating the pattern: two reinforcing pathways**

Taken together, the results support an integrated interpretation built around two reinforcing pathways. First, social-evaluative pressure (comparison and external validation) is linked to higher identity confusion and anxiety and to lower stability and self-esteem [16], [17]. Second, behavioral displacement and attentional disruption (reduced offline engagement, fragmented routines, and weakened self-regulation) is linked to poorer academic self-concept and reduced capacity for goal-directed identity development [17]. The practical meaning is that identity difficulties are not merely “about screen time,” but about how and why students engage digitally whether the dominant pattern is comparison, approval-seeking, escape/immersion, or constant checking and interruption [18], [19].

### **Overall contribution**

The study contributes by distinguishing between multiple forms of online behavioral addiction and showing that they relate to different identity outcomes [20]. This more differentiated view supports theory-building around the “digital self” and provides a clearer basis for targeted student support strategies that address the specific psychological processes most relevant to each form of problematic online engagement [21], [22].

### **Conclusion**

This study examined how multiple forms of online behavioral addiction relate to self-identity outcomes among university students. The findings show a consistent pattern: higher problematic online engagement is associated with lower self-esteem and identity stability, higher identity confusion and identity anxiety, and weaker academic self-concept and self-regulation. Importantly, the results suggest a differentiated structure rather than a single uniform effect: social media addiction is most strongly linked with identity confusion, gaming addiction with reduced academic self-concept, smartphone dependency with weaker self-regulation, validation seeking with reduced identity stability, and FoMO with heightened identity anxiety. Overall, the study supports the view that identity development in emerging adulthood can become more vulnerable when digital engagement is dominated by comparison, external validation, and attentional disruption.

### **Limitations**

First, the cross-sectional design limits causal inference; the observed relationships should be interpreted as associations, and reverse or reciprocal effects remain plausible. Second, the data are based on self-reports, which may introduce common method bias and social desirability effects. Third, the sample (university students aged 18-25 from a single context) may limit generalizability to other

age groups or settings. Future studies using longitudinal designs, behavioral traces, and multi-site samples would strengthen causal and external validity.

### Practical implications

The results can be translated into targeted, low-cost actions for universities, counselors, and student support units. The key is to intervene by addiction profile, not by generic “screen-time” advice.

- ✓ **Screening and early identification (simple and scalable):** Implement a brief digital wellbeing check in student services (or orientation) that screens the five risk patterns: social media addiction, gaming addiction, smartphone dependency, validation seeking, and FoMO.
- ✓ **Profile-based interventions (match the mechanism to the outcome):**
  - **Social media addiction → identity confusion:** deliver short modules on social comparison literacy, “curated-self-awareness,” and value clarification exercises to reduce identity diffusion.
  - **Validation seeking → identity instability:** teach internal anchoring practices (personal values, role commitments, offline competence-building) and reduce metric-dependence (likes/followers) through structured “de-metric” challenges.
  - **FoMO → identity anxiety:** offer cognitive-behavioral micro-skills (reframing, uncertainty tolerance, boundary-setting) and belonging interventions that reduce anxiety-driven checking.
  - **Smartphone dependency → weaker self-regulation:** use attention-control training and environment design (notification hygiene, scheduled checking windows, app limits) combined with short goal-setting routines.
  - **Gaming addiction → lower academic self-concept:** provide academic identity repair strategies (mastery plans, study micro-goals, feedback loops) and time displacement management rather than moralizing about gaming.
- ✓ **Course-level and campus-level design (high leverage).** Embed digital self-regulation into first-year seminars: students set weekly goals, track attention interruptions, and reflect on identity-relevant habits. Pair this with supportive policies (quiet study norms, “phone-free” micro-spaces) that strengthen self-regulation through environment, not only willpower.
- ✓ **Counseling practice: treat identity as the core outcome.** Student counseling can move beyond “reduce usage” to “rebuild identity stability.” A

practical counseling sequence is: (a) map the student’s dominant digital pattern, (b) identify the identity domain harmed (self-esteem, stability, confusion, anxiety, academic self), and (c) build an offline identity reinforcement plan (roles, relationships, competence experiences).

- ✓ **Measurement-driven improvement (showing institutional competence).** Run pre/post evaluation for any intervention using the same identity and addiction indicators. Even simple repeated measures (start-of-semester vs end-of-semester) can demonstrate measurable improvement and strengthen the institution’s evidence-based reputation.

These implications position the work as actionable: universities can reduce identity-related harms of problematic online engagement by combining targeted screening, profile-matched interventions, and environmental design that strengthens self-regulation and identity consolidation in emerging adulthood.

### Future research directions

Future studies should (1) use longitudinal designs to test whether online behavioral addictions precede changes in identity outcomes (and to examine reciprocal effects), (2) incorporate objective digital-trace measures (e.g., screen-time logs, app-use patterns) alongside self-reports to reduce common method bias, and (3) test mediators and moderators explicitly—such as social comparison, external validation dependence, and self-regulation capacity, as well as gender, academic year, stress, and offline social support. In addition, multi-site samples across universities and cultures, and intervention trials that compare profile-based digital wellbeing programs against generic screen-time advice, would strengthen generalizability and practical impact.

### Disclosure Statement

No potential conflict of interest reported by the authors.

### Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

### Authors' Contributions

All authors contributed to data analysis, drafting, and revising of the paper and agreed to be responsible for all the aspects of this work.

### References

- [1] Kuss, D. J., & Griffiths, M. D. (2011). [Online social networking and addiction A review of the psychological literature](#). *International Journal of Environmental Research and Public Health*, 8(9), 3528-3552.

- [2] Andreassen, C. S., Torsheim, T., Brunborg, G. S., & Pallesen, S. (2012). Development of a Facebook addiction scale. *Psychological Reports*, 110(2), 501-517.
- [3] Turel, O., & Serenko, A. (2012). The benefits and dangers of enjoyment with social networking websites. *European Journal of Information Systems*, 21(5), 512-528.
- [4] Montag, C., & Reuter, M. (2015). Internet addiction: Neuroscientific approaches and therapeutics. Springer.
- [5] Panova, T., & Lleras, A. (2016). Avoidance or boredom: Negative mental health outcomes associated with use of technology. *Computers in Human Behavior*, 58, 351-360.
- [6] Przybylski, A. K., Murayama, K., DeHaan, C. R., & Gladwell, V. (2013). Motivational, emotional, and behavioral correlates of problematic digital-game use. *Journal of Adolescent Health*, 53(1), 66-72.
- [7] Pontes, H. M., & Griffiths, M. D. (2015). Measuring DSM-5 internet gaming disorder: Development and validation of a short psychometric scale. *Computers in Human Behavior*, 45, 137-143.
- [8] Pontes, H. M., & Griffiths, M. D. (2016). The role of social networking site addiction in identity processes among youth. *Addiction Research & Theory*, 24(4), 337-350.
- [9] Steers, M.-L. N., Wickham, R. E., & Acitelli, L. K. (2014). Seeing everyone else's highlight reels: How Facebook usage is linked to depressive symptoms. *Journal of Social and Clinical Psychology*, 33(8), 701-731.
- [10] Hsieh, K. Y., & Lee, C. F. (2019). Relationship between self-identity confusion and Internet addiction among college students: The mediating effects of psychological inflexibility and experiential avoidance. *International Journal of Environmental Research and Public Health*, 16(19), 3576.
- [11] Hong, M., et al. (2021). Self-identity, social support and loneliness: Mediating roles in internet addiction among college students. *Journal of Behavioral Addictions*, 10(3), 465-478.
- [12] Kuss, D. J., & Griffiths, M. D. (2017). Social networking sites and addiction: Ten lessons learned. *International Journal of Environmental Research and Public Health*, 14(3), 311.
- [13] Montag, C., Bey, K., Sha, P., Li, M., Chen, Y. F., Liu, W. Y., Zhu, Y., Li, C., & Markowitz, A. (2015). Is it meaningful to distinguish between smartphone addiction and Internet addiction? *Neuropsychiatric Disease and Treatment*, 11, 2761-2771.
- [14] Burén, J., et al. (2021). Gaming and social media addiction in university students: Associations with psychosocial difficulties. *Frontiers in Psychology*, 12, Article 703.
- [15] Teng, H., Zhu, L., Zhang, X., & Qiu, B. (2024). When games influence words: Gaming addiction among college students increases verbal aggression through risk-biased drifting in decision-making. *Behavioral Sciences*, 14(8), 699.
- [16] Marino, C., et al. (2020). Problematic social media use and identity processes in emerging adults: A structural equation model. *Journal of Youth and Adolescence*, 49(9), 1817-1830.
- [17] Satici, S. A., & Uysal, R. (2015). Well-being and problematic social media use: The mediating roles of forgiveness and self-compassion. *Computers in Human Behavior*, 52, 236-246.
- [18] Andreassen, C. S. (2015). Online social network site addiction: A comprehensive review. *Current Addiction Reports*, 2(2), 175-184.
- [19] De Cock, R., et al. (2014). Identity styles and Internet addiction among adolescents: The mediating role of coping. *Cyber psychology, Behavior, and Social Networking*, 17(8), 513-518.
- [20] Kwon, M., et al. (2013). Development and validation of a smartphone addiction scale (SAS). *PLOS ONE*, 8(2), e56936.
- [21] Wegmann, E., Stodt, B., & Brand, M. (2015). Cue-induced craving to use online-games and online social networking sites: Factorial validation of a short scale. *Addictive Behaviors Reports*, 1, 28-35.
- [22] Kircaburun, K., Alhabash, S., Tosuntaş, Ş. B., & Griffiths, M. D. (2018). Uses and gratifications of problematic social media use among Turkish adolescents. *International Journal of Mental Health and Addiction*, 16(3), 710-722.