Contents lists available at GrowingScience

International Journal of Data and Network Science

homepage: www.GrowingScience.com/ijds

Academic excellence and addictive social media use: A social ambivalence perspective

Rober Anibal Luciano-Alipio[a*], Danny Xavier Arevalo-Avecillas[b], Luis Antonio Visurraga-Camargo[a], Grimaldo Wilfredo Quispe-Santivañez[c], David Raul Hurtado-Tiza[a], Ezzard Omar Alvarez-Díaz[d], Currito Rafael Villalba-Gutierrez[c] and Kelly Rocio Arosemena-Castilla[e]

[a]*Faculty of Administrative Sciences, National Autonomous University of the Andes of Tarma, Tarma, 12650, Peru*
[b]*Facultad de Ciencias Sociales y Humanisticas, Escuela Superior Politecnica del Litoral, ESPOL [Litoral Polytechnic Higher School], Campus Gustavo Galindo, Km. 30.5 Vía Perimetral, Guayaquil, 090902, Ecuador*
[c]*Faculty of Engineering, National Autonomous University of the Andes of Tarma, Tarma, 12650, Peru*
[d]*Faculty of Industrial Engineering, National University of San Marcos, Lima, 150101, Peru*
[e]*Public Higher Pedagogical Institute "Gustavo Allende Llavería, Tarma, 12650, Peru*

C H R O N I C L E

Article history:
Received March 4, 2026
Received in revised format March 28, 2026
Accepted May 5 2026
Available online
May 5 2026

Keywords:
High academic achievement
Social ambivalence
Punishment for high achievement
Addictive use of social media
University students

A B S T R A C T

This study examines the relationship between appreciation of high achievement, punishment for high achievement, and addictive social media use among university students, with punishment for high achievement acting as a mediating mechanism. A quantitative, non-experimental, cross-sectional design was employed. The sample comprised 726 university students from Peru (n = 357) and Ecuador (n = 369). Data were analyzed using structural equation modeling (SEM) with maximum likelihood estimation in AMOS. The measurement model demonstrated adequate reliability, as well as convergent and discriminant validity. In the structural model, appreciation of high achievement had a positive and significant effect on punishment for high achievement ($\beta = 0.424$, $p < 0.001$), which in turn positively influenced addictive social media use ($\beta = 0.454$, $p < 0.001$). In contrast, the direct effect of appreciation of high achievement on addictive social media use was not significant ($\beta = 0.084$, $p = 0.075$). However, bootstrapping analysis confirmed a significant indirect effect ($\beta = 0.184$, $p < 0.001$). These findings indicate that high academic achievement elicits ambivalent social responses that shape students' digital behavior, highlighting punishment for high achievement as a key explanatory mechanism. This study contributes to the literature by proposing an integrative model of social ambivalence surrounding academic excellence, linking recognition, social sanction, and addictive social media use in university contexts.

© 2026 by the authors; licensee Growing Science, Canada.

1. Introduction

Over the past two decades, the rapid expansion of digital technologies has profoundly reshaped patterns of social interaction, communication, and identity construction among young people. In this context, social media has become an integral component of university students' daily lives, while its problematic or addictive use has emerged as a growing concern in recent scholarship (Bengtsson & Johansson, 2022; Sivakumar et al., 2023). These platforms have evolved into complex socio-digital environments where individuals construct personal narratives, negotiate their identities, and seek social validation within highly visible settings (Lüders et al., 2022; Zhou et al., 2023). Accordingly, social media functions not only as a communication tool but also as a space for social comparison and symbolic recognition, where status hierarchies and senses

* Corresponding author
E-mail address rluciano@unaat.edu.pe (R. A. Luciano-Alipio)

ISSN 2561-8156 (Online) - ISSN 2561-8148 (Print)
© 2026 by the authors; licensee Growing Science, Canada.
doi: 10.5267/j.ijdns.2026.5.005

of belonging are actively shaped (Ellison et al., 2007; Valkenburg et al., 2006). For university students, these environments provide opportunities to showcase academic achievements and position themselves within their educational communities (Merino et al., 2024).

At the same time, academic performance constitutes a central dimension of social recognition and identity formation in higher education contexts (Lou & Li, 2023). In highly competitive environments, performance operates as a visible marker of merit and future potential (Ibarra-Cisneros et al., 2023). However, growing evidence suggests that the social consequences of high academic achievement are not unidirectional but inherently ambivalent (Putwain & Daly, 2014; Salanova et al., 2010). Academic excellence can simultaneously elicit admiration and rejection, giving rise to complex relational dynamics in which recognition coexists with pressure, rivalry, and social exclusion (Mijs & Paulle, 2016). From a social comparison perspective (Festinger, 1954), visible performance activates evaluative processes that may trigger both positive and negative social responses (Sidorenkov & Borokhovski, 2023). In line with this, the tall poppy syndrome illustrates how high-achieving individuals may be socially penalized for standing out (Feather, 1994; Neill et al., 2024).

Within this framework, high academic achievement can be conceptualized as a socially ambivalent phenomenon that generates two distinct types of responses: appreciation, associated with recognition and support, and punishment, linked to criticism, social pressure, or exclusion (Bari et al., 2025). While prior research has shown that recognition enhances motivation, self-esteem, and a sense of belonging (Sotardi, 2022; Shin, 2022), it can also become a source of pressure when perceived as controlling or conditional (Deci & Ryan, 2000; Ryan & Deci, 2017). In this regard, recognition increases students' social visibility, intensifies comparison processes, and elevates external expectations, thereby increasing the likelihood of social sanction dynamics.

In this context, social media platforms emerge as key spaces where these dynamics are amplified and reconfigured. They function not only as environments for validation and the accumulation of social capital but also as coping mechanisms in response to negative social experiences (Khoa & Huynh, 2024; Wang & Wang, 2025). From the perspective of the compensatory internet use model, individuals tend to intensify their online activity in response to stress, exclusion, or social pressure (Kardefelt-Winther, 2014). Consequently, addictive social media use can be understood not merely as dysfunctional behavior but also as an adaptive response to psychosocial stressors derived from the academic context.

Despite the growing body of research on addictive social media use among university students, important theoretical and empirical gaps remain. First, most studies have treated addictive social media use as an antecedent or independent variable, focusing on its effects on academic performance or well-being, whereas the reverse relationship—namely, how social experiences associated with academic achievement shape addictive use—remains underexplored (Murari et al., 2024). Second, although recognition and academic pressure have been examined separately, few studies have integrated both appreciation and punishment of high achievement within a single explanatory framework. Third, there is a lack of relational approaches that examine the interplay between social dynamics and digital behaviors (Veldman et al., 2022; Merino et al., 2024). These gaps are particularly relevant in Latin American contexts, where educational trajectories are shaped by family expectations, structural inequalities, and pressures related to social mobility (Rentería, 2023).

In response to these limitations, this study proposes a model of the social ambivalence of academic excellence, in which recognition of high achievement increases the likelihood of experiencing social punishment, which in turn acts as a key mechanism explaining addictive social media use. Accordingly, this research contributes to the literature by (i) reversing the dominant analytical direction, (ii) conceptualizing the social ambivalence of high achievement as a central construct, and (iii) proposing an integrative model that links dynamics of social recognition with addictive social media use among university students.

2. Literature review and hypothesis formulation

2.1. Appreciation of high academic achievement and addictive social media use

Recent literature suggests that social media use among university students extends beyond communicative and recreational purposes, emerging as a key space for identity construction, achievement display, and the pursuit of social recognition (Marquès-Donoso et al., 2025; Zhou et al., 2023). Within these digital environments, individuals not only interact but also strategically manage their public image and seek symbolic validation, particularly in contexts where academic performance holds social significance. In this regard, the perception of appreciation for high academic achievement—expressed through explicit recognition, positive feedback, or social reinforcement—may encourage students to engage with social media as platforms for self-expression and academic positioning (Iqbal et al., 2023). When academic performance is valued by peers, teachers, or family members, students' self-esteem and intrinsic motivation are reinforced, increasing their willingness to share learning experiences, participate in online communities, and construct a visible academic identity (Khoa & Huynh, 2024; Sotardi, 2022).

This relationship can be understood through social comparison theory (Festinger, 1954) and digital validation frameworks, which posit that individuals actively seek environments where their abilities are recognized and socially legitimized. However, these mechanisms primarily account for increased engagement and expressive use of social media, rather than necessarily leading to addictive patterns of use. Empirical evidence indicates that when recognition is perceived as authentic

and development-oriented, it enhances both the frequency and quality of online interactions, whereas its absence may result in reduced participation or more defensive engagement strategies (Veldman et al., 2022; Wang & Wang, 2025). Taken together, these arguments suggest that the perception of high academic achievement functions as a driver of social media use oriented toward visibility and social validation. However, its influence on addictive social media use is likely indirect and contingent upon intervening social dynamics. Accordingly, the following hypothesis is proposed:

H_1: *The relationship between appreciation of high academic achievement and addictive social media use is indirect rather than direct among university students.*

2.2. Appreciation and punishment of high academic achievement

In the university context, appreciation of high academic achievement—expressed through explicit recognition, positive feedback, or institutional incentives—has been consistently associated with higher levels of engagement, motivation, and performance, particularly when aligned with students' intrinsic goals (Iqbal et al., 2023). However, growing evidence suggests that the effects of recognition are not unequivocal but potentially ambivalent. From the perspective of self-determination theory, Deci and Ryan (2000) argue that external rewards may produce counterproductive effects when perceived as controlling, thereby undermining intrinsic motivation. Similarly, Schunk et al. (2016) note that such dynamics can shift learning toward more instrumental orientations. In line with this, Bear et al. (2017) contend that recognition loses its formative value when it becomes contingent or conditional, transforming into a source of pressure rather than support.

Within this framework, punishment for high achievement (PHA) is conceptualized as a set of negative social responses directed toward academically outstanding students, arising from their heightened visibility and differentiation within the group. Unlike general academic stress, PHA represents an external social experience characterized by dynamics of devaluation, excessive demands, or social exclusion. These manifestations—including criticism, disproportionate expectations, and peer distancing—are closely aligned with the tall poppy syndrome described by Feather (1994). Accordingly, in this study, PHA is operationalized as a negative relational experience associated with high academic achievement, rather than as a general form of academic pressure.

Furthermore, recognition of high achievement increases students' social visibility in competitive environments, thereby intensifying social comparison processes (Festinger, 1954). When such recognition translates into heightened expectations and pressure to sustain high academic achievement, it may give rise to anxiety and academic stress (Pekrun et al., 2002), as well as a reduced sense of control (Jovanovic & Matejevic, 2014). Consequently, appreciation of high achievement can be understood as a socially ambivalent experience that, under certain conditions, increases the likelihood of social punishment dynamics. Based on these arguments, the following hypothesis is proposed:

H_2: *Appreciation of high academic achievement is positively associated with punishment for high achievement among university students.*

2.3. Punishment for high academic achievement and addictive social media use

Contemporary research in education and digital communication suggests that negative social experiences—such as rejection, persistent criticism, or perceived punishment for academic excellence—play a significant role in shaping students' social media use. Drawing on social comparison theory (Festinger, 1954), perceived punishment for high achievement—manifested through derogatory attitudes, social exclusion, or pressure from peers, teachers, or family members—can elicit negative emotional responses, including frustration, anxiety, and diminished self-esteem (Sidorenkov & Borokhovski, 2023). These experiences not only undermine emotional well-being but also influence patterns of interaction within digital environments.

In this context, social media platforms emerge as alternative spaces for validation and recognition in response to adverse face-to-face experiences (Veldman et al., 2022). When students perceive social punishment for their academic performance, they may intensify their online activity as a compensatory strategy to address unmet social and emotional needs, seeking support, acceptance, and identity affirmation (Marquès-Donoso et al., 2025; Wang & Wang, 2025). This tendency may be reflected in increased screen time and specific interaction patterns, such as sharing achievements, engaging in online communities, or actively seeking positive feedback.

From the perspective of the compensatory internet use model, such intensified digital engagement may evolve into problematic or addictive use, as social media platforms become mechanisms for coping with stress, exclusion, or social pressure (Kardefelt-Winther, 2014). Consistent with this view, empirical evidence indicates that social media can function as a tool for emotional regulation, helping to alleviate the psychological strain associated with negative social experiences (Bozkurt & Tu, 2016; Zhou et al., 2023). Taken together, these arguments suggest that punishment for high achievement not only affects students' well-being but also serves as a key driver of increased and potentially maladaptive social media use. Accordingly, the following hypothesis is proposed:

H_3: *Punishment for high achievement is positively associated with addictive social media use among university students.*

Extant literature further suggests that recognition of high academic achievement increases students' social visibility, thereby intensifying social comparison processes and exposure to external evaluations (Festinger, 1954). In competitive academic

environments, such visibility may give rise to ambivalent dynamics, in which validation coexists with pressure, criticism, and even social exclusion. Moreover, empirical evidence indicates that negative social experiences constitute important antecedents of intensive and problematic social media use. According to the compensatory internet use model, individuals engage more intensively in digital environments to cope with negative emotions and to fulfill social needs that are unmet in face-to-face contexts (Kardefelt-Winther, 2014). In a similar vein, addictive social media use has been conceptualized as a mechanism of emotional regulation and a means of seeking validation under conditions of social pressure (Verduyn et al., 2017).

Within this framework, punishment for high achievement operates as a key explanatory mechanism linking initial recognition of performance to subsequent patterns of social media use, thereby establishing an indirect relationship between these variables. In other words, the social ambivalence surrounding academic excellence unfolds through a process in which appreciation increases the likelihood of experiencing social sanction, which in turn fosters addictive social media use. Accordingly, the following hypothesis is proposed:

H4: *Punishment for high achievement mediates the relationship between appreciation of high academic achievement and addictive social media use among university students.*

Figure 1 presents the proposed theoretical model, in which appreciation of high academic achievement is linked to addictive social media use through punishment for high academic achievement as a mediating variable.

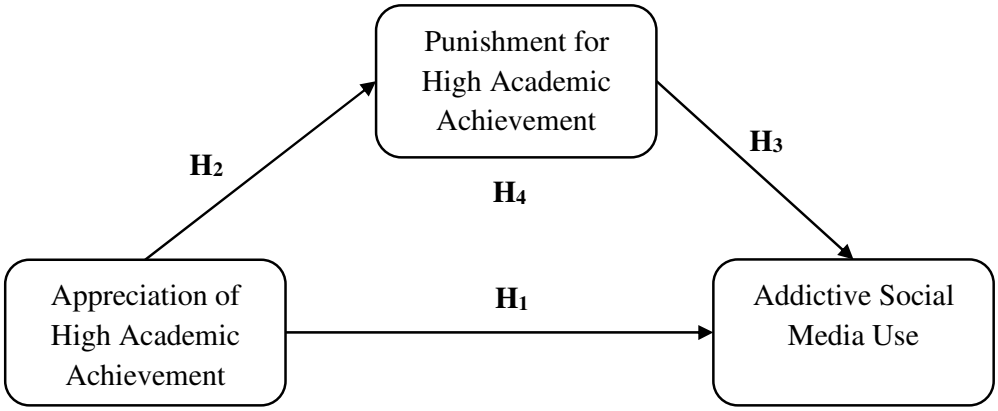

Fig. 1. Theoretical research model

3. Method

3.1. Design and participants

This study adopted a quantitative approach using a non-experimental, cross-sectional design, which is appropriate for examining relationships between variables in natural settings without deliberate manipulation (Hernández-Sampieri & Mendoza, 2018). Such designs are widely employed in organizational and educational research to test theoretical models using empirical data (Kline, 2023). The sample comprised 726 university students from Peru (n = 357; 49.2%) and Ecuador (n = 369; 50.8%), who were recruited through non-probability convenience sampling.

Table 1
Demographic data of the participants

Variables	Category	n	%
Country	Ecuador	369	50.8
	Peru	357	49.2
Gender	Female	427	58.8
	Male	295	40.6
	I prefer not to say	4	0.6
Age (years)	<= 18	116	16.0
	19 - 28	564	77.7
	29+	46	6.3
Type of university	Public	647	89.1
	Private	79	10.9

N=726.

In sociodemographic terms, the sample was predominantly female (58.8%), followed by male participants (40.6%), with a small proportion preferring not to disclose their gender (0.6%). Regarding age, most participants were between 19 and 28 years old (77.7%), followed by those aged 18 years or younger (16.0%) and a smaller group aged 29 and above (6.3%),

indicating a predominantly young sample. Additionally, the sample was largely composed of students from public universities (89.1%), compared to those from private institutions (10.9%). The sample size was considered adequate for structural equation modeling (SEM), as it exceeded the minimum thresholds recommended for robust estimation using maximum likelihood methods (Hair et al., 2019). Furthermore, participants represented a range of academic disciplines and educational levels, ensuring sufficient variability in perceptions related to academic achievement and addictive social media use. Table 1 presents the detailed sociodemographic characteristics of the sample.

3.2. Measuring instruments

The study variables were measured using five-point Likert-type scales (1 = strongly disagree; 5 = strongly agree), following established guidelines for assessing latent constructs in the social sciences (Likert, 1932; Hair et al., 2019). Appreciation of high academic achievement (AHA) and punishment for high academic achievement (PHA) were assessed using an eight-item scale, comprising two dimensions (four items each), adapted from Bari et al. (2025), originally developed in organizational settings. The adaptation process involved the semantic refinement of items to ensure their appropriateness within the university context and their relevance to academic and social interactions. Content validity was established through evaluation by five experts in higher education and organizational behavior. Additionally, a linguistic clarity assessment was conducted with students from Peru and Ecuador to ensure semantic equivalence across both contexts. Prior to the main data collection, a pilot study was carried out, leading to minor revisions in item wording to enhance clarity and comprehensibility. Addictive social media use (ASMU) was measured using six items adapted from the Bergen Social Media Addiction Scale (BSMAS), which has been validated in Spanish-speaking populations (Arrivillaga et al., 2024). This scale captures patterns of intensive and potentially problematic social media use and has been widely applied in recent research on digital behavior.

3.3. Procedure

The data was collected through self-administered questionnaires in digital format. The participation was voluntary and anonymous, guaranteeing the confidentiality of the information. Before participating, the survey respondents were informed about the objectives of the study and gave their informed consent. The study was conducted in accordance with the ethical principles established in the Declaration of Helsinki (World Medical Association, 2013).

3.4. Data Analysis

Data analysis was conducted using structural equation modeling (SEM) with IBM SPSS AMOS software. The maximum likelihood (ML) estimation method was applied, as the data met the assumptions of multivariate normality, assessed through skewness and kurtosis coefficients (Kline, 2023; Hair et al., 2019). Potential common method bias was evaluated using Harman's single-factor test, which indicated that a single factor accounted for 37.8% of the total variance, below the critical threshold of 50%, suggesting that common method bias is unlikely to threaten the validity of the findings. Following the two-step approach proposed by Anderson and Gerbing (1988), the measurement model was first evaluated using confirmatory factor analysis (CFA) to evaluate the reliability and validity of the constructs. Internal consistency was examined using Cronbach's alpha (Cronbach, 1951) and composite reliability (CR), with values above 0.70 considered acceptable (Hair et al., 2019). Convergent validity was assessed through average variance extracted (AVE), with values exceeding 0.50 (Fornell & Larcker, 1981), while discriminant validity was evaluated using the Fornell–Larcker criterion. Subsequently, the structural model was estimated to test the proposed hypotheses, examining standardized path coefficients (β) and their statistical significance. Mediation effects were assessed using a bootstrapping procedure with 2,000 resamples and a 95% confidence interval, following the recommendations of Preacher and Hayes (2008), enabling robust estimation of indirect effects.

4. Results

4.1. Descriptive results

Descriptive analyses were conducted to examine the distribution of items associated with the constructs of appreciation of high academic achievement (AHA), punishment for high academic achievement (PHA), and addictive social media use (ASMU) across the samples from Peru (n = 357) and Ecuador (n = 369) (see Table 2). Means, standard deviations, skewness, and kurtosis were computed in accordance with methodological guidelines for assessing normality prior to structural equation modeling (Hair et al., 2019; Tabachnick & Fidell, 2019).

Overall, the results indicate moderate levels across all three constructs. For appreciation of high academic achievement, mean scores ranged from 2.81 to 3.71 in Peru and from 3.02 to 4.15 in Ecuador, suggesting a slightly higher perception of academic recognition in the Ecuadorian sample. With respect to punishment for high academic achievement, mean values ranged from 2.81 to 3.32 in Peru and from 2.80 to 3.46 in Ecuador, indicating a moderate presence of social pressure and sanction dynamics associated with academic achievement. Similarly, addictive social media use exhibited mean scores near the midpoint of the scale in both countries (Peru: 2.71–3.10; Ecuador: 2.64–3.24), reflecting moderate levels of digital engagement. Standard deviations ranged from 1.035 to 1.202 in Peru and from 0.996 to 1.389 in Ecuador, indicating moderate variability in responses. In terms of normality, skewness (−1.465 to 0.385) and kurtosis (−1.204 to 2.214) values fell within

acceptable thresholds for assuming approximate normality (Hair et al., 2019; Kline, 2023). Taken together, these findings support the adequacy of the data for estimation using maximum likelihood methods.

Table 2
Descriptive results

Country/ Variables	Peru				Ecuador			
	Mean	Standard Deviation	Skewness	Kurtosis	Mean	Standard Deviation	Skewness	Kurtosis
AHA1	2.81	1.197	0.031	-0.813	3.02	1.389	-0.072	-1.204
AHA2	3.71	1.035	-0.935	0.590	4.15	0.996	-1.465	2.214
AHA3	3.61	1.064	-0.785	0.248	3.79	1.121	-0.840	0.200
AHA4	3.58	1.045	-0.792	0.356	3.86	1.106	-0.949	0.459
PHA1	3.18	1.106	-0.328	-0.398	3.33	1.231	-0.238	-0.803
PHA2	3.03	1.061	-0.178	-0.350	3.14	1.143	-0.191	-0.484
PHA3	2.81	1.095	-0.003	-0.577	2.80	1.287	0.194	-0.946
PHA4	3.32	1.202	-0.348	-0.659	3.46	1.237	-0.433	-0.718
ASMU1	3.00	1.114	-0.123	-0.694	3.03	1.231	-0.087	-0.877
ASMU2	2.88	1.100	0.057	-0.725	2.91	1.226	0.016	-0.905
ASMU3	3.10	1.156	-0.182	-0.838	3.24	1.251	-0.322	-0.823
ASMU4	2.97	1.075	0.029	-0.609	3.11	1.213	-0.155	-0.867
ASMU5	2.71	1.097	0.385	-0.415	2.64	1.324	0.298	-1.037
ASMU6	2.80	1.130	0.192	-0.633	2.77	1.304	0.180	-1.042
N	357				369			

Note. AHA= appreciation of high academic achievement. PHA= Punishment for high academic achievement. ASMU= Addictive use of social media.

To examine the bivariate relationships among the study constructs, a Pearson correlation matrix was estimated for appreciation of high academic achievement (AHA), punishment for high academic achievement (PHA), and addictive social media use (ASMU) across the samples from Peru and Ecuador (see Table 3). This analysis constitutes a preliminary step in structural equation modeling, as it enables the identification of initial associations between variables and the assessment of potential multicollinearity prior to estimating the structural model (Hair et al., 2019; Field, 2018). In the Peruvian sample, positive and statistically significant correlations were observed among all constructs. Specifically, appreciation of high academic achievement was positively associated with punishment for high academic achievement ($r = 0.458$, $p < 0.01$) and addictive social media use ($r = 0.259$, $p < 0.01$). Similarly, punishment for high academic achievement was positively related to addictive social media use ($r = 0.349$, $p < 0.01$). Overall, these findings indicate low to moderate associations among the constructs.

A comparable pattern was observed in the Ecuadorian sample, although with slightly stronger correlations. The relationship between appreciation of high academic achievement and punishment for high academic achievement was $r = 0.604$ ($p < 0.01$), while the correlation between appreciation of high academic achievement and addictive social media use was $r = 0.289$ ($p < 0.01$). In turn, punishment for high academic achievement was positively associated with addictive social media use ($r = 0.424$, $p < 0.01$), suggesting moderate-strength relationships in this context. From a methodological standpoint, all correlation coefficients were below the threshold of 0.70, indicating the absence of multicollinearity concerns and supporting the empirical distinctiveness of the constructs (Hair et al., 2019). Taken together, these results provide preliminary empirical support for the estimation of the structural model.

Table 3
Correlations between variables in Peru and Ecuador

	Peru			Ecuador		
Country/ Variables	AHA	PHA	ASMU	AHA	PHA	ASMU
Appreciation of high academic achievement	1			1		
Punishment for high academic achievement	0.458**	1		0.604**	1	
Addictive use of social media	0.259**	0.349**	1	0.289**	0.424**	1

Note. **. Correlation is significant at the 0.01 level (two-tailed).

4.2. Reliability and convergent validity

The reliability and convergent validity of the measurement model were assessed using standardized factor loadings (see Table 4), Cronbach's alpha (α), composite reliability (CR), and average variance extracted (AVE), following widely accepted criteria in the structural equation modeling literature (Hair et al., 2019; Fornell & Larcker, 1981).

In the Peruvian sample, standardized factor loadings ranged from 0.517 to 0.893, with most values exceeding the recommended threshold of 0.70; however, loadings above 0.50 are considered acceptable in studies involving scale validation (Hair et al., 2019). In terms of internal consistency, Cronbach's alpha values indicated satisfactory reliability across all constructs: appreciation of high academic achievement (AHA; $\alpha = 0.811$), punishment for high academic achievement (PHA; $\alpha = 0.852$), and addictive social media use (ASMU; $\alpha = 0.942$). Consistently, composite reliability values were 0.830, 0.833, and 0.938, respectively, all exceeding the recommended threshold of 0.70.

Regarding convergent validity, AVE values were 0.558 (AHA), 0.557 (PHA), and 0.715 (ASMU), all above the minimum criterion of 0.50, indicating that the constructs adequately explain the variance of their respective indicators (Fornell & Larcker, 1981). A similar pattern was observed in the Ecuadorian sample. Factor loadings ranged from 0.534 to 0.942, while Cronbach's alpha values were 0.797 (AHA), 0.850 (PHA), and 0.934 (ASMU). Composite reliability values (0.837, 0.840, and 0.926) also exceeded recommended thresholds, and AVE values (0.569, 0.567, and 0.676) further supported the convergent validity of the constructs.

It is worth noting that item AHA1 exhibited factor loadings slightly below the preferred threshold (0.517 in Peru and 0.534 in Ecuador). Nevertheless, the item was retained due to its conceptual relevance and because its inclusion did not materially affect the overall reliability indices or the convergent validity of the measurement model.

Table 4
Reliability and convergent validity

Country/ Variables	Peru				Ecuador			
	λ	α	CR	AVE	λ	α	CR	AVE
AHA1	0.517	0.811	0.830	0.558	0.534	0.797	0.837	0.569
AHA2	0.776				0.800			
AHA3	0.775				0.800			
AHA4	0.872				0.842			
PHA1	0.829	0.852	0.833	0.557	0.765	0.850	0.840	0.567
PHA2	0.763				0.793			
PHA3	0.656				0.692			
PHA4	0.726				0.759			
ASMU1	0.876	0.942	0.938	0.715	0.799	0.934	0.926	0.676
ASMU2	0.837				0.820			
ASMU3	0.893				0.777			
ASMU4	0.820				0.742			
ASMU5	0.857				0.942			
ASMU6	0.788				0.839			

Note. AHA= appreciation of high academic achievement. PHA= Punishment for high academic achievement. ASMU= Addictive use of social media.

4.3. Discriminant validity

Discriminant validity of the measurement model was assessed using the Fornell–Larcker criterion, which requires that the square root of the average variance extracted (AVE) for each construct exceeds its correlations with other constructs in the model (Fornell & Larcker, 1981; Hair et al., 2019). This criterion ensures that each latent variable shares more variance with its own indicators than with other conceptually distinct constructs. In the Peruvian sample, the square root of the AVE for appreciation of high academic achievement (AHA) was 0.747, exceeding its correlations with punishment for high academic achievement (PHA) ($r = 0.535$, $p < 0.001$) and addictive social media use (ASMU) ($r = 0.278$, $p < 0.001$). Similarly, the square root of the AVE for PHA was 0.746, which was higher than its correlation with ASMU ($r = 0.396$, $p < 0.001$). The ASMU construct showed a square root of the AVE of 0.846, also exceeding its correlations with the remaining constructs.

A consistent pattern was observed in the Ecuadorian sample. The square root of the AVE for AHA was 0.754, surpassing its correlations with PHA ($r = 0.487$, $p < 0.001$) and ASMU ($r = 0.286$, $p < 0.001$). Likewise, the square root of the AVE for PHA was 0.753, exceeding its correlation with ASMU ($r = 0.457$, $p < 0.001$). Finally, ASMU exhibited a square root of the AVE of 0.822, which was higher than its correlations with the other constructs. Overall, these results provide strong evidence of discriminant validity for all constructs in both samples. Detailed results are presented in Table 5.

Table 5
Discriminant validity

Country/Variables	Peru			Ecuador		
	AHA	PHA	ASMU	AHA	PHA	ASMU
AHA	**0.747**			**0.754**		
PHA	0.535***	**0.746**		0.487***	**0.753**	
ASMU	0.278***	0.396***	**0.846**	0.286***	0.457***	**0.822**

Note. AHA= appreciation of high academic achievement. PHA= Punishment for high academic achievement. ASMU= Addictive use of social media.

4.4. Structural model fit indices

Table 6 presents the fit indices of the estimated structural model for the samples from Peru and Ecuador, evaluated using widely accepted indicators in structural equation modeling (SEM). Overall, the results indicate an adequate model fit in both contexts, meeting the recommended methodological criteria (Hair et al., 2019; Kline, 2023).

First, the relative chi-square index (χ^2/df) was 1.349 for Peru and 2.598 for Ecuador, both below the commonly accepted threshold of 3, indicating a good fit between the theoretical model and the observed data. Second, the incremental fit indices showed satisfactory performance. In the Peruvian sample, the Comparative Fit Index (CFI) was 0.992 and the Tucker–Lewis Index (TLI) was 0.990, while in the Ecuadorian sample, the values were 0.967 and 0.956, respectively. All values exceeded

the minimum criterion of 0.90 and, in most cases, the more stringent threshold of 0.95, indicating a strong improvement over the null model.

Furthermore, the Root Mean Square Error of Approximation (RMSEA) was 0.031 for Peru and 0.066 for Ecuador, both below the recommended cutoff of 0.08, suggesting a low level of approximation error. Similarly, the Standardized Root Mean Square Residual (SRMR) values were 0.0396 for Peru and 0.0626 for Ecuador, both within acceptable limits (< 0.08), indicating a good correspondence between the observed and model-implied correlations. Taken together, these results provide robust evidence of an adequate overall fit of the structural model in both samples.

Table 6
Model fit indices

Suitable	Index	Peru	Ecuador	Both countries
χ^2 / df	(<3 o <5)	1.349	2.598	3.353
CFI	(>0.90 o >0.95)	0.992	0.967	0.974
TLI	(>0.90)	0.990	0.956	0.964
RMSEA	(<0.08)	0.031	0.066	0.059
SRMR	(<0.08)	0.0396	0.0626	0.0520

Factorial invariance between the Peruvian and Ecuadorian samples was examined through multigroup analysis, testing configural, metric, scalar, residual, and strict levels of invariance (see Table 7). The configural model demonstrated an adequate fit (CFI = 0.986; RMSEA = 0.045), supporting the equivalence of the underlying factor structure across groups. Metric invariance was established, as indicated by a negligible change in CFI (ΔCFI = 0.010 $\leq$ 0.01), confirming the equivalence of factor loadings between the two samples. Similarly, the scalar model exhibited minimal changes (ΔCFI = 0.001; ΔRMSEA = 0.000), supporting intercept invariance and enabling meaningful comparisons of latent means. Residual invariance also showed only marginal variations (ΔCFI = 0.001; ΔRMSEA = 0.002), indicating consistency in measurement errors across groups. However, the strict invariance model presented a slight deterioration in model fit (CFI = 0.964; RMSEA = 0.057; ΔCFI = 0.012; ΔRMSEA = 0.014), exceeding recommended thresholds and suggesting that full equivalence of residual variances was not achieved. Overall, the results support measurement invariance up to the residual level, providing a robust basis for structural comparisons between the Peruvian and Ecuadorian samples.

Table 7
Multigroup factorial invariance (Peru vs. Ecuador)

Model	χ^2	gl	CFI	RMSEA	ΔCFI	ΔRMSEA
Configural	289.820	135	0.986	0.045	—	—
Metric	287.989	141	0.976	0.045	0.010	0.000
Scalar	298.812	147	0.977	0.045	0.001	0.000
Residual	305.026	150	0.976	0.043	0.001	0.002
Strict	404.750	171	0.964	0.057	0.012	0.014

4.5. Results of the structural model

To evaluate the hypothesized relationships among appreciation of high academic achievement (AHA), punishment for high academic achievement (PHA), and addictive social media use (ASMU), the structural model was estimated using structural equation modeling (SEM) (see Fig. 2 and Table 8). Standardized path coefficients (β), standard errors (SE), critical ratios (CR), and significance levels (p) were reported in accordance with established guidelines for assessing structural relationships (Hair et al., 2019; Kline, 2023). The results indicate that appreciation of high academic achievement has a positive and statistically significant effect on punishment for high academic achievement (β = 0.424, CR = 10.107, p < 0.001), providing support for Hypothesis 2. This finding suggests that higher levels of academic recognition are associated with an increased perception of social pressure or negative responses.

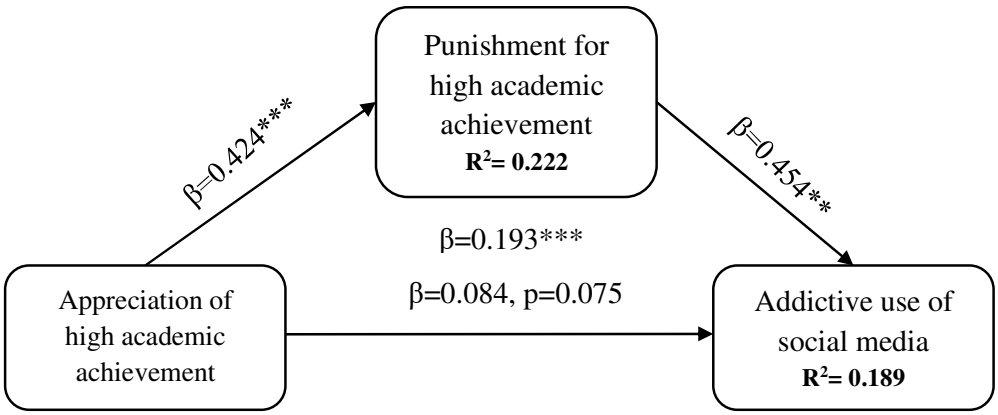

Fig. 2. Results of the mediation model. *Note*. ***=p<0.001.

In contrast, the direct relationship between appreciation of high academic achievement and addictive social media use was not statistically significant (β = 0.084, CR = 1.778, p = 0.075), and therefore Hypothesis 1 was not supported. This result indicates that appreciation of academic achievement does not directly predict addictive social media use in the analyzed sample. Finally, punishment for high academic achievement showed a positive and highly significant effect on addictive social media use (β = 0.454, CR = 7.988, p < 0.001), supporting Hypothesis 3. This finding suggests that higher levels of perceived social pressure or criticism associated with academic achievement are linked to greater addictive social media use.

Table 8
General Hypothesis Testing

Path	β	S.E.	C.R.	*p*	Hypothesis
AHA → PHA	0.424	0.042	10.107	***	Supported
AHA → ASMU	0.084	0.047	1.778	0.075	Not supported
PHA → ASMU	0.454	0.057	7.988	***	Supported

Note. AHA= appreciation of high academic achievement. PHA= Punishment for high academic achievement. ASMU= Addictive use of social media.

4.6. Analysis of the indirect effect (mediation)

To examine the mediating role of punishment for high academic achievement (PHA) in the relationship between appreciation of high academic achievement (AHA) and addictive social media use (ASMU), the indirect effect was estimated using a bootstrapping procedure (see Table 9). This approach is widely recommended for testing mediation in structural equation models due to its robustness and its ability to generate confidence intervals without assuming normality of the indirect effect distribution (Hayes, 2018; Hair et al., 2019). The results indicate that the indirect effect of AHA on ASMU through PHA is positive and statistically significant. Specifically, the unstandardized indirect effect was 0.193, with a 95% bootstrap confidence interval ranging from 0.141 to 0.256, which does not include zero. In addition, the effect was statistically significant (p = 0.001). In standardized terms, the indirect effect reached β = 0.184 (p < 0.001).

These findings suggest that appreciation of high academic achievement indirectly influences addictive social media use through punishment for high academic achievement. In other words, higher levels of perceived academic recognition are associated with increased experiences of social pressure or criticism, which in turn contribute to greater addictive social media use. This pattern indicates that PHA operates as a key explanatory mechanism linking academic recognition to students' digital behavior. Furthermore, given that the direct effect of AHA on ASMU was not statistically significant, whereas the indirect effect was, the results provide evidence of full mediation. This implies that the influence of appreciation of high academic achievement on addictive social media use is primarily transmitted through punishment for high academic achievement.

Table 9
Indirect effect

Indirect Path	Unstandardized Estimate	Lower	Upper	P-Value	Standardized Estimate
AHA→ PHA → ASMU	0.193	0.141	0.256	0.001	0.184***

Note. AHA= appreciation of high academic achievement. PHA= Punishment for high academic achievement. ASMU= Addictive use of social media.

5. Discussion

This study provides empirical evidence on the ambivalent nature of high academic achievement and its implications for social media use by proposing a mediating model that integrates dynamics of social recognition with addictive social media behavior. The findings move beyond traditional linear perspectives by demonstrating that the effects of academic achievement on social media use operate through intermediate psychosocial mechanisms rather than through direct relationships.

First, the absence of a significant direct effect between appreciation of high academic achievement and addictive social media use suggests that social recognition does not automatically translate into increased problematic digital behavior. This finding challenges the dominant view that links recognition to greater social media engagement (Ellison et al., 2007; Valkenburg et al., 2006) and aligns with more recent research indicating that the impact of social media depends on mediating processes such as social comparison and emotional regulation (Verduyn et al., 2017; Kross et al., 2021). Accordingly, social media use should be understood as a contingent phenomenon shaped by individuals' subjective interpretations of their social experiences.

Second, the positive relationship between appreciation of high academic achievement and punishment for high academic achievement confirms the inherently ambivalent nature of academic recognition. This result is consistent with social comparison theory (Festinger, 1954) and prior evidence showing that the visibility of success can simultaneously evoke admiration and social rejection (Mijs & Paulle, 2016; Exline & Lobel, 1999). It also aligns with self-determination theory, which suggests that external rewards may become sources of pressure when perceived as controlling (Deci & Ryan, 2000;

Ryan & Deci, 2017). From the perspective of the Job Demands–Resources model, these findings indicate that recognition may function simultaneously as a resource and a demand, depending on the surrounding social context (Bakker & Demerouti, 2017).

Third, the positive effect of punishment for high academic achievement on addictive social media use supports the compensatory internet use model (Kardefelt-Winther, 2014), which posits that individuals engage in digital environments to cope with social and emotional deficits. This finding is consistent with recent evidence suggesting that social media use can serve functions related to emotional regulation, belonging, and the pursuit of social validation (Kross et al., 2021; Verduyn et al., 2022). In contexts where students experience pressure or exclusion, social media may act as an alternative space for identity reconstruction and the search for social support.

Finally, the central contribution of this study lies in confirming the mediating role of punishment for high academic achievement in the relationship between appreciation of high academic achievement and addictive social media use. This result demonstrates that social media behavior is not directly driven by recognition itself, but rather by the ambivalent social dynamics that recognition generates. From both a methodological and theoretical perspective, this finding is consistent with contemporary approaches that emphasize the importance of intermediary mechanisms in explaining complex behavioral phenomena (Preacher & Hayes, 2008; Hayes, 2018). Taken together, these findings suggest that high academic achievement should be understood not merely as an individual attribute, but as a socially embedded phenomenon that reshapes interpersonal dynamics and influences behavioral patterns in digital environments.

5.1. Theoretical contributions

This study makes a substantial theoretical contribution by conceptualizing academic excellence as a socially ambivalent phenomenon, moving beyond the traditional perspective that views it solely as a positive resource associated with recognition and achievement (Deci & Ryan, 2000; Mijs & Paulle, 2016). In this regard, the study proposes a model of the social ambivalence of academic achievement, in which high achievement not only elicits appreciation but also activates dynamics of pressure, continuous evaluation, and social sanction (Festinger, 1954; Neill et al., 2024). This perspective advances the literature by integrating, within a single conceptual framework, two social responses that have typically been examined in isolation: appreciation and punishment of high academic achievement (Bari et al., 2025). In doing so, it introduces a relational approach that acknowledges the social value of achievement as contingent upon processes of social comparison, visibility, and group norms (Sidorenkov & Borokhovski, 2023).

Furthermore, the proposed model contributes to the literature on digital behavior by reorienting the dominant explanatory focus from the consequences of social media use to its psychosocial antecedents. Specifically, the findings demonstrate that social media use, and particularly its addictive form, is not directly driven by academic recognition, but rather by the social tensions it generates. In this sense, addictive social media use can be understood as an adaptive response to contexts of social ambivalence (Verduyn et al., 2017; Kardefelt-Winther, 2014). Finally, this study advances the understanding of underlying mechanisms by identifying punishment for high academic achievement as a key mediating process that links recognition to social media use. By doing so, it proposes an integrative framework that connects social comparison theory, self-determination theory, and the compensatory internet use model, offering a more nuanced and context-sensitive explanation of student behavior in higher education settings (Ryan & Deci, 2017; Preacher & Hayes, 2008).

5.2. Practical implications

From an applied perspective, the findings highlight the need for universities to strategically manage academic recognition practices to prevent them from fostering excessive pressure, unrealistic demands, or dynamics of social exclusion. In line with self-determination theory, institutions should design recognition systems that promote intrinsic motivation, autonomy, and student well-being, rather than relying predominantly on external rewards or competitive comparisons (Deci & Ryan, 2000). Moreover, addictive social media use should not be interpreted solely as a recreational or individual behavior, but rather as a potential indicator of underlying emotional coping processes in response to experiences of pressure, continuous evaluation, or insufficient recognition within the academic environment. In this regard, universities are encouraged to implement comprehensive intervention strategies that prioritize students' socio-emotional development. These may include psychological support services, digital literacy initiatives, and programs aimed at strengthening emotional regulation skills, with the goal of mitigating the adverse effects associated with highly competitive academic contexts.

5.3. Limitations of the study

This study has several limitations that should be considered when interpreting the findings. First, the cross-sectional design limits the ability to establish causal inferences, particularly in the context of mediation analysis; therefore, the observed relationships should be interpreted as associative rather than causal. Second, the reliance on self-reported measures may introduce common method bias, potentially inflating the relationships among the constructs. Although procedural and statistical checks were conducted, this limitation cannot be entirely ruled out. Finally, the proposed model does not

incorporate potentially relevant variables, such as self-efficacy or social support, which have been identified as important factors in explaining both academic and digital behavior. Future research should consider extending the model to include these variables in order to provide a more comprehensive understanding of the underlying mechanisms.

5.4. Suggestions for future research

Future research should employ longitudinal designs to capture the temporal dynamics of the relationships examined and to enable more robust causal inferences (Maxwell & Cole, 2007). Additionally, it would be valuable to incorporate moderating variables such as self-efficacy, resilience, and social support, in line with the Job Demands–Resources framework, to identify the conditions under which social ambivalence exerts a stronger influence on social media use (Bakker & Demerouti, 2017). Furthermore, future studies should distinguish between different forms of social media use—particularly functional, intensive, and addictive use—in order to more precisely understand the underlying behavioral mechanisms (Kardefelt-Winther, 2014). Finally, the adoption of mixed-method approaches that integrate quantitative and qualitative techniques would provide deeper insights into the subjective experiences of recognition and social pressure, thereby offering a more comprehensive and context-sensitive understanding of the social ambivalence associated with high academic achievement.

6. Conclusions

This study provides robust empirical evidence on the ambivalent nature of high academic achievement and its influence on addictive social media use among university students. In contrast to traditional approaches that assume a direct effect of recognition on digital behavior, the findings demonstrate that this relationship operates indirectly through social dynamics associated with academic achievement. Specifically, the results indicate that appreciation of high academic achievement does not directly predict addictive social media use; rather, it increases the likelihood of experiencing social punishment, which functions as a key explanatory mechanism. This suggests that high academic achievement, beyond being a positive resource, also represents a form of social exposure that may generate pressure, heightened expectations, and negative responses from the surrounding social environment.

Furthermore, the findings show that punishment for high academic achievement significantly drives addictive social media use as a coping and emotional regulation strategy. This reinforces the notion that digital behavior is shaped by underlying psychosocial needs, particularly those related to validation, belonging, and identity reconstruction. In this sense, students' social media use cannot be fully understood without considering the social dynamics that emerge around academic achievement. Overall, this study contributes to the literature by proposing an integrative model of the social ambivalence of academic excellence that links recognition, social pressure, and addictive social media use. By doing so, it offers a more nuanced and context-sensitive understanding of student behavior in higher education settings.

References

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin, 103*(3), 411–423. https://doi.org/10.1037/0033-2909.103.3.411

Arrivillaga, C., Griffiths, M. D., Rey, L., & Extremera, N. (2024). Validation of the Spanish version of the Bergen Social Media Addiction Scale (BSMAS) among Spanish adolescents. *Current Psychology*. https://doi.org/10.1007/s12144-024-06728-5

Bakker, A. B., & Demerouti, E. (2017). Job demands–resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology*, 22(3), 273–285. https://doi.org/10.1037/ocp0000056

Bari, M. W., Khan, Q., & Di Virgilio, F. (2025). Knowledge donation, hoarding, and hiding behaviors of high performers: Mediation role of deviant silence. *European Research on Management and Business Economics, 31*(2), 100276. https://doi.org/10.1016/j.iedeen.2025.100276

Bear, G. G., Slaughter, J. C., Mantz, L. S., & Farley-Ripple, E. (2017). Recompensas, elogios y consecuencias punitivas: Relaciones con la motivación intrínseca y extrínseca. *Teaching and Teacher Education, 65*, 10–20. https://doi.org/10.1016/j.tate.2017.03.001

Bengtsson, S., & Johansson, S. (2022). The meanings of social media use in everyday life: Filling empty slots, everyday transformations, and mood management. *Social Media + Society, 8*(6), 1–13. https://doi.org/10.1177/20563051221130292

Bozkurt, A., & Tu, C.-H. (2016). Digital identity formation: Socially being real and present on digital networks. *Educational Media International*, 53(3), 153–167. https://doi.org/10.1080/09523987.2016.1236885

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16(3), 297–334. https://doi.org/10.1007/BF02310555

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01

Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook "friends:" Social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication, 12*(4), 1143–1168. https://doi.org/10.1111/j.1083-6101.2007.00367.x

Exline, J. J., & Lobel, M. (1999). The perils of outperformance: Sensitivity about being the target of a threatening upward comparison. *Psychological Bulletin*, 125(3), 307–337. https://doi.org/10.1037/0033-2909.125.3.307

Feather, N. T. (1994). Attitudes toward high achievers and reactions to their fall: Theory and research concerning tall poppies. *Advances in Experimental Social Psychology*, 26, 1–73. https://doi.org/10.1016/S0065-2601(08)60151-3

Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, 7(2), 117–140. https://doi.org/10.1177/001872675400700202

Field, A. (2018). *Discovering statistics using IBM SPSS Statistics* (5th ed.). SAGE Publications

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50. https://doi.org/10.2307/3151312

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th ed.). Cengage Learning.

Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (2nd ed.). The Guilford Press

Hernández-Sampieri, R., & Mendoza, C. (2018). *Metodología de la investigación: Las rutas cuantitativa, cualitativa y mixta*. McGraw-Hill Education.

Ibarra-Cisneros, M. A., Vela Reyna, J. B., & Hernández-Perlines, F. (2023). Interacción entre la gestión del conocimiento, el capital intelectual y la innovación en instituciones de educación superior. *Education and Information Technologies*, 28, 9685–9708. https://doi.org/10.1007/s10639-022-11563-x

Iqbal, S., Razalli, M. R., & Taib, C. A. B. (2023). Influence of intrinsic and extrinsic motivation on higher education performance: Mediating effect of quality culture. *Frontiers in Education, 8*, 1099415. https://doi.org/10.3389/feduc.2023.1099415

Iqbal, S., Ahmad, M., & Khan, A. (2023). Academic appreciation and student engagement: Effects of feedback and motivational strategies in higher education. *Educational Psychology Review, 35*(2), 357–379. https://doi.org/10.1007/s10648-023-09750-x

Jovanovic, D., & Matejevic, M. (2014). Relationship between rewards and intrinsic motivation for learning – Researches review. *Procedia - Social and Behavioral Sciences, 149*, 456–460. https://doi.org/10.1016/j.sbspro.2014.08.287

Kardefelt-Winther, D. (2014). A conceptual and methodological critique of internet addiction research: Towards a model of compensatory internet use. *Computers in Human Behavior, 31*, 351–354. https://doi.org/10.1016/j.chb.2013.10.059

Khoa, T. T., & Huynh, P. T. (2024). Social media engagement and academic outcomes: The role of peer recognition and intrinsic motivation. *Computers & Education, 198*, 104832. https://doi.org/10.1016/j.compedu.2023.104832

Khoa, B. T., & Huynh, T. T. (2024). Knowledge-intensive teamwork development through social media adoption after the COVID-19 pandemic in higher education institutions. *Heliyon*, 10(4), e26210. https://doi.org/10.1016/j.heliyon.2024.e26210

Kline, R. B. (2023). *Principles and practice of structural equation modeling* (5th ed.). The Guilford Press

Kross, E., Verduyn, P., Sheppes, G., Costello, C. K., Jonides, J., & Ybarra, O. (2021). Social media and well-being: Pitfalls, progress, and next steps. *Trends in Cognitive Sciences*, 25(1), 55–66. https://doi.org/10.1016/j.tics.2020.10.005

Likert, R. (1932). A technique for the measurement of attitudes. *Archives of Psychology, 140*, 1–55.

Lou, N. M., & Li, L. M. W. (2023). Social mobility and motivational payoff: Achievement motivation is more important in students' performance and well-being in cultures with high versus low social mobility. *Journal of Cross-Cultural Psychology*, 54(8). https://doi.org/10.1177/00220221231195930

Lüders, A., Dinkelberg, A., & Quayle, M. (2022). Becoming "us" in digital spaces: How online users creatively and strategically exploit social media affordances to build up social identity. *Acta Psychologica*, 228, 103643. https://doi.org/10.1016/j.actpsy.2022.103643

Marquès-Donoso, D., Figueroa, P., & Salazar, C. (2025). Social media identity and online validation among university students: The role of academic self-presentation. *Sustainability, 17*(24), 11125. https://doi.org/10.3390/su172411125

Merino, M., Tornero-Aguilera, J. F., Rubio-Zarapuz, A., Villanueva-Tobaldo, C. V., Martín-Rodríguez, A., & Clemente-Suárez, V. J. (2024). Body perceptions and psychological well-being: A review of the impact of social media and physical measurements on self-esteem and mental health with a focus on body image satisfaction and its relationship with cultural and gender factors. *Healthcare*, 12(14), 1396. https://doi.org/10.3390/healthcare12141396

Mijs, J. J. B., & Paulle, B. (2016). The burden of acting wise: Sanctioned success and ambivalence about hard work at an elite school in the Netherlands. *Intercultural Education*, 27(1), 22–38. https://doi.org/10.1080/14675986.2016.1144383

Murari, K., Shukla, S., & Dulal, L. (2024). Social media use and social well-being: A systematic review and future research agenda. *Online Information Review, 48*(5), 959–982. https://doi.org/10.1108/OIR-11-2022-0608

Neill, L., Hemmington, N., & Taylor, A. (2024). *Tall poppy syndrome. In Conflict and hostility in hotels, restaurants, and bars* (1st ed., pp. 25). Routledge.

Pekrun, R., Goetz, T., Titz, W., & Perry, R. P. (2002). Academic emotions in students' self-regulated learning and achievement: A program of qualitative and quantitative research. *Educational Psychologist, 37*(2), 91–105. https://doi.org/10.1207/S15326985EP3702_4

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*(3), 879–891. https://doi.org/10.3758/BRM.40.3.879

Putwain, D. W., & Daly, A. L. (2014). Test anxiety prevalence and gender differences in a sample of English secondary school students. *Educational Studies*, 40(5), 554–570. https://doi.org/10.1080/03055698.2014.953914

Ryan, R. M., & Deci, E. L. (2017). *Self-determination theory: Basic psychological needs in motivation, development, and wellness*. Guilford Press.

Rentería, J. M. (2023). Inequality of educational opportunity and time-varying circumstances: Longitudinal evidence from Peru. *The Journal of Development Studies*, 59(2), 258–278. https://doi.org/10.1080/00220388.2022.2113067

Salanova, M., Schaufeli, W. B., Martínez, I. M., & Bresó, E. (2010). How obstacles and facilitators predict academic performance: The mediating role of study burnout and engagement. *Anxiety, Stress & Coping*, 23(1), 53–70. https://doi.org/10.1080/10615800802609965

Schunk, D. H., Pintrich, P. R., & Meece, J. L. (2016). Revisiting the role of rewards in motivation and learning: Implications of neuroscientific research. *Educational Psychology Review, 28*, 61–93. https://doi.org/10.1007/s10648-015-9310-0

Shin, H. (2022). Social contagion of academic behavior: Comparing social networks of close friends and admired peers. *PLOS ONE, 17*(3), e0265385. https://doi.org/10.1371/journal.pone.0265385

Sidorenkov, A. V., & Borokhovski, E. F. (2023). The role of cohesion and productivity norms in performance and social effectiveness of work groups and informal subgroups. *Behavioral Sciences*, 13(5), 361. https://doi.org/10.3390/bs13050361

Sivakumar, A., Jayasingh, S., & Shaik, S. (2023). Social media influence on students' knowledge sharing and learning: An empirical study. *Education Sciences*, 13(7), 745. https://doi.org/10.3390/educsci13070745

Sotardi, V. A. (2022). On institutional belongingness and academic performance: Mediating effects of social self-efficacy and metacognitive strategies. *Studies in Higher Education*, 47(12), 2444–2459. https://doi.org/10.1080/03075079.2022.2081678

Tabachnick, B. G., & Fidell, L. S. (2019). *Using multivariate statistics* (7th ed.). Pearson.

Valkenburg, P. M., Peter, J., & Schouten, A. P. (2006). Friend networking sites and their relationship to adolescents' well-being and social self-esteem. *Cyberpsychology & Behavior*, 9(5), 584–590. https://doi.org/10.1089/cpb.2006.9.584

Veldman, J., Meeussen, L., & van LAHA, C. (2022). Social background concealment among first-generation students: The role of social belonging and academic achievement concerns. *Group Processes & Intergroup Relations*, 26(3). https://doi.org/10.1177/13684302221089116

Veldman, I., van Tartwijk, J., & Wubbels, T. (2022). Academic identity reconstruction and social media: Students' meaning-making of academic success. *Studies in Higher Education, 47*(5), 952–968. https://doi.org/10.1080/03075079.2020.1828745

Verduyn, P., Ybarra, O., Résibois, M., Jonides, J., & Ethan Kross (2017). Do social network sites enhance or undermine subjective well-being? A critical review. *Social Issues and Policy Review*, 11(1), 274–302. https://doi.org/10.1111/sipr.12033

Wang, J., & Wang, S. (2025). The emotional reinforcement mechanism of and phased intervention strategies for social media addiction. *Behavioral Sciences*, 15(5), 665. https://doi.org/10.3390/bs15050665

World Medical Association. (2013). World Medical Association Declaration of Helsinki: Ethical principles for medical research involving human subjects. *JAMA, 310*(20), 2191–2194. https://doi.org/10.1001/jama.2013.281053

Zhou, Y., Meng, X., Wang, J., Mo, X., Jiang, S., Dai, C., & Liu, M. (2023). Daily peer relationships and academic achievement among college students: A social network analysis based on behavioral big data. *Sustainability*, 15(22), 15762. https://doi.org/10.3390/su152215762

© 2026 by the authors; licensee Growing Science, Canada. This is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC, BY) license (http://creativecommons.org/licenses/by/4.0/).