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RESEARCH ARTICLE

# Social media and academic performance in international business education: Paradoxical patterns from Thailand

[version 1; peer review: 2 approved with reservations]

Roland Zsolt Szabó [1], Srisongruk Prohmvitak [2,3]

[1]Department of Corporate Leadership and Marketing, Kautz Gyula Faculty of Business and Economics, Szechenyi Istvan University, Győr, Gyor-Moson-Sopron, 9026, Hungary
[2]International College, National Institute of Development Administration, Bangkok, Bangkok, 10240, Thailand
[3]Rangsit University International College, Rangsit University, Muang-Ake, Pathum Thani, 12000, Thailand

**v1** **First published:** 10 Dec 2025, **5**:382
https://doi.org/10.12688/openreseurope.21918.1
**Latest published:** 10 Dec 2025, **5**:382
https://doi.org/10.12688/openreseurope.21918.1

## Abstract

### Background

This study investigates the paradoxical relationship between social media usage and academic performance among international business students in Thailand, challenging conventional assumptions about digital distraction in higher education. While existing literature predominantly documents negative associations between social media use and academic outcomes, emerging evidence suggests more complex dynamics warrant investigation.

### Methods

A cross-sectional survey of 158 international business students at a Thai university examined platform adoption rates, usage intensity, temporal patterns, and their associations with academic achievement measured by GPA. The study employed chi-square tests and comparative analysis to identify statistically significant differences across performance groups.

### Results

Contrary to documented negative relationships, high-performing students (GPA 3.50-4.00) demonstrated significantly greater platform diversity than lower-achieving peers. High performers showed significantly higher adoption rates across multiple platforms: Facebook (89% vs. 67%, p<0.05), YouTube (87% vs. 68%, p<0.05), TikTok (83% vs. 50%, p<0.01), Telegram (71% vs. 46%, p<0.01),

**Open Peer Review**

**Approval Status** ? ?

| | 1 | 2 |
|---|---|---|
| **version 1** 10 Dec 2025 | ? view | ? view |

1. **Ana Jimenez-Zarco**, UOC Open University of Catalonia, - Barcelona, Spain

2. **Amin Hosseinian-Far**, University of Hertfordshire, Hatfield, UK

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LinkedIn (44% vs. 20%, p<0.05), Pinterest (48% vs. 26%, p<0.05), and Viber (48% vs. 13%, p<0.01). Most paradoxically, 85% of high achievers engaged in late-night social media use (9 PM-12 AM) versus 64% of medium and 54% of low performers (p<0.01), despite research linking nighttime usage to sleep disruption and academic decline. Overall engagement was intensive across the sample, with 61.4% spending five or more hours daily on social media, accessed predominantly via smartphones (97%). Platform selection patterns revealed functional differentiation: high performers favored educational content platforms (YouTube), academic coordination tools (Telegram), and professional networking sites (LinkedIn), while low performers demonstrated limited platform diversity.

**Conclusions**

Engagement quality appears more consequential than quantity for academic success. These findings suggest that interventions should focus on cultivating digital literacy and strategic engagement skills rather than advocating blanket usage reduction, with important implications for international business education in Thailand and similar contexts.

**Keywords**
digital literacy, late-night usage, smartphone use, social media usage, higher education, grade point average, platform diversity




This article is included in the Horizon Europe gateway.



This article is included in the Marie-Sklodowska-Curie Actions (MSCA) gateway.

**Corresponding author:** Roland Zsolt Szabó (roland.szabo@sze.hu)

**Author roles: Szabó RZ**: Conceptualization, Data Curation, Formal Analysis, Funding Acquisition, Investigation, Methodology, Project Administration, Supervision, Validation, Visualization, Writing – Original Draft Preparation, Writing – Review & Editing; **Prohmvitak S**: Conceptualization, Data Curation, Formal Analysis, Funding Acquisition, Investigation, Methodology, Resources, Visualization, Writing – Original Draft Preparation

**Competing interests:** No competing interests were disclosed.

**Grant information:** This project has received funding from the European Union's Horizon Europe programme under grant agreement No. 101086381 (Overcoming Digital Divide in Europe and Southeast Asia – ODDEA, HORIZON-MSCA-2021-SE-01-1). This project has also received funding from the János Bolyai Research Scholarship of the Hungarian Academy of Sciences (Grant No. BO/00305/23).
*The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.*

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**How to cite this article:** Szabó RZ and Prohmvitak S. **Social media and academic performance in international business education: Paradoxical patterns from Thailand [version 1; peer review: 2 approved with reservations]** Open Research Europe 2025, **5**:382 https://doi.org/10.12688/openreseurope.21918.1

**First published:** 10 Dec 2025, **5**:382 https://doi.org/10.12688/openreseurope.21918.1

## Introduction

Social media has become a commonplace in millions of people's everyday lives worldwide. With 5.16 billion users globally, social media has risen in popularity Facebook is the most popular social networking site in the world, with 3.07 billion users. With 2.5 billion subscribers, YouTube comes in second, solidifying its position as the most popular site for watching and sharing videos. Instagram, which is popular for sharing photos and videos, and WhatsApp, the texting app, come in third, with two billion users each. With 1.5 billion users, TikTok is at the top five as a major platform for short-form video production (Priori Data, 2025). Students mostly utilize social media to communicate with others, for amusement, and keep up with current trends, where collaborative learning and academic communication also play a vital role. Videos, interactive material, and gamification are contemporary ways in knowledge sharing and learning. Multimedia technology integrated into social media platforms promote individualized learning (Zewdie, 2024). Since social media is accessible even on low-end smartphones and with poor connectivity, it offers a low-barrier entry point for digital learning. New opportunities are being created by technology, which makes it possible for students to connect and access education even in remote areas, hence, there are still ongoing issues with infrastructure, teacher and instructor's readiness, and equal access to technology (UNESCO, 2023). Information gathering and learning through social media also occurs in adulthood and benefits both urban and rural populations (Amon *et al.*, 2025).

Social media users visit an average of 7.2 different social platforms every month. With an average of 11 accounts per person, Indians are the most active social media users, followed by the USA. With four social media accounts per person, Japan has the lowest average social media use, this indicates that Japanese utilized social media platforms selectively (Priori Data, 2025). Southeast Asians use social media for almost three hours a day on average, which is thirty-five minutes more than the global average. Popular platforms like Facebook, Instagram, TikTok, and WhatsApp are used differently in different countries. For instance, TikTok and Instagram draw younger audiences with influencer content and short-form videos, while WhatsApp is widely used in Indonesia, Malaysia, and Singapore for group communication (Hedges, 2025).

The majority of users access social media through mobile devices like smartphones, which are the most popular devices even among rural and lower-income communities because of their portability and cost.

### Research questions and main results

Social media usage among university students has reached unprecedented levels, with many spending 5+ hours daily across multiple platforms (Alotaibi *et al.*, 2022). Research consistently documents negative correlations between social media use and academic performance (Hill *et al.*, 2024; Ntumi *et al.*, 2025). Late-night usage is particularly problematic, associated with sleep disruption, assessment anxiety, and lower GPA (Ntumi *et al.*, 2025). However, this negative narrative may not apply uniformly to all student populations, especially international students who rely on social media for cross-border communication, academic coordination, and professional development. Thus, this study examines two research questions: RQ1: How does social media platform adoption differ between high and low performing international business students? and RQ2: Do temporal usage patterns (particularly late-night engagement) predict academic performance as existing research suggests? Understanding these relationships is essential for developing appropriate digital literacy interventions for international student populations.

Our survey of 158 international business students reveals striking paradoxes that challenge both research questions' underlying assumptions. For RQ1, high-performing students (GPA 3.50-4.00) adopt significantly more platforms than low performers, including YouTube (87% vs. 68%, $p<0.05$), Telegram (71% vs. 46%, $p<0.01$), and LinkedIn (44% vs. 20%, $p<0.05$), contradicting expected negative relationships. For RQ2, 85% of high achievers use social media during late-night hours versus only 54% of low performers ($p<0.01$), inverting predicted patterns. These paradoxes suggest that usage quality—strategic platform selection, functional diversity, and self-regulation—matters more than usage quantity or timing. High performers favor educational platforms (YouTube), academic coordination tools (Telegram), and professional networking (LinkedIn), while low performers show limited platform diversity. The findings indicate that high achievers possess superior self-regulation enabling intensive use without academic cost, or alternatively, that they use platforms strategically for academic purposes rather than passive entertainment. These paradoxical patterns from Thailand challenge simplistic "screen time reduction" interventions, suggesting instead that international business education should cultivate strategic digital engagement skills that enable students to leverage social media for academic and professional advancement.

### Structure of the article

This article is organized into seven main sections that systematically examine the relationship between social media usage and academic performance among international business students in Thailand. Following this introduction, the Literature Review establishes the theoretical foundations by examining social media's dual nature in higher education, organized into three positive impacts (social media as a talent attraction tool, creator of dynamic learning experiences, and facilitator of real-time communication and teamwork without boundaries) and three negative impacts (disinformation and misinformation vulnerabilities, excessive use and distractions, and data security and privacy concerns), alongside empirical evidence on the relationships between social media usage patterns and GPA, device preferences, and age-related behaviors. The Methodology section describes the survey design and sample characteristics of 158 international business students (78.5% Myanmar, 73.4% female, predominantly aged 21–23) from a Thai higher education institution. The Results section presents descriptive findings on platform adoption rates (Table 3), daily

usage hours (Table 4), temporal patterns (Table 5), device preferences (Table 6), and critically, the paradoxical relationships between GPA and platform usage (Table 7), time of day patterns (Table 8), age and device use (Table 9), and usage hours and device preferences (Table 10). The Discussion section interprets these findings, focusing particularly on explaining the counterintuitive patterns where high-performing students demonstrate greater platform diversity and more intensive late-night usage than their lower-performing peers, suggesting strategic platform selection and superior self-regulation rather than simple usage quantity effects. The Implications section addresses practical applications for universities, student support services, and policymakers serving international student populations. Finally, the Limitations and Future Research Directions section acknowledges the study's constraints—including cross-sectional design, self-report bias, sample specificity, measurement limitations, and absence of mediating variables—while proposing longitudinal designs, objective usage tracking, and measurement of self-regulation and usage purpose as priorities for future research. This structure enables a comprehensive examination of social media's complex and paradoxical relationship with academic performance in international business education contexts.

## Literature review

Social media is the most popular online activity among Southeast Asian internet users aged 16 to 24 (99.6%), even outperforming search engine usage (Datareportal, 2021). They spend over 10 hours a day on various devices, with social media being their primary activity, and users often use seven to eight platforms each month (Kemp, 2021). They spend about an hour more on social media each day than the typical person worldwide, and this accounts for about 60% of their waking hours (Hedges, 2025). Their social, cultural, and educational lives are so heavily reliant on social media (Chachavalpongpun, 2023). This age group is more likely to produce and consume locally relevant and culturally appropriate information. Chinese students studying in the U.S., for example, continued using Renren and QQ while also adopting Facebook, with motivations for both bridging and bonding ties predicting dual-platform intensity (Yuan *et al.*, 2014). Social media is widely utilized not only for social engagement and pleasure, but also for academic communication and learning help (Tambuwal *et al.*, 2025).

A 286-student mixed-methods study reported 4–6 hours daily as modal smartphone use, with social media as the primary activity (Khatiwada, 2025). A Saudi university sample (n=545) reported 6–11 hours daily average smartphone use, with 82.6% using phones for social networking and 67.0% meeting smartphone addiction criteria (Alotaibi *et al.*, 2022). A cyberloafing study found 66.9% of students spending ≥3 hours/day on social networks (Dursun & Turan, 2025).

### Social media as a talent attraction tool

Educational institutions (in Thailand) use digital tools to make services more efficient and accessible. They contribute to enhancing service delivery, reduce administrative burden, and improve transparency (Caplanova & Szakadatova, 2025). Social media has become a crucial marketing tool for educational institutions to engage with prospective students, boost enrollment, and build their brand. Universities use platforms like Facebook, Instagram, YouTube, TikTok, and LinkedIn to share interactive and targeted content, host live events, promote educational programs, and run focused advertising campaigns. social media analytics tools enable organizations to track results, improve their digital marketing approach, and successfully target student acquisition (Tangari, 2025).

In order to reach the most relevant audience, including prospective students and increase conversion rates from interest to enrollment, the marketing on these platforms employs accurate targeting based on students' demographics, interests, and behavior. Furthermore, using educational content on social media positions the organization as a thought leader by increasing interaction, boosting brand awareness, brand authority, generating traffic, and cultivating devoted groups of followers (Liviu, 2024).

### Social media as a creator of dynamic learning experiences

Through interactive learning and information evaluation, social media helps develop digital literacy and critical thinking abilities that are necessary for navigating modern schooling and workforce (Maisuroh *et al.*, 2024). Social media platforms enable users to communicate, share, and update vast volumes of decentralized information. Social media promotes informal learning by giving students the chance to interact with peers, exchange knowledge, and gain confidence in a safe online setting (Zhu, 2025). Platforms such as Pinterest and YouTube provide an abundance of educational resources, ranging from lesson plans and instructional videos to suggestions for classroom decor (Saini & Mir, 2023). Social media is crucial for lower-income and rural students to engage with educational communities and access information. Global connectivity enhances learning and exposes individuals to many perspectives and cultures. Social media use improves broader digital skills such as online communication, critical thinking, and responsible digital citizenship, which go beyond device use. These abilities are necessary for both education and future career.

Social media has significantly changed education by democratizing access to information. The internet has become the ultimate library, with social media serving as a doorway to access this abundance of information. This accessibility has enabled learners to investigate numerous subjects and broaden their perspectives beyond what traditional textbooks could provide. Social media provides an environment where students can evaluate information sources, interact critically with content, and take part in discussions in a way that fosters critical thinking (Fazel & Sayaf, 2025).

Furthermore, social media's collaborative character has changed the educational experience. Facebook and Twitter connect people from all around the world, allowing for collaborative

learning across borders. Social media has redefined peer-to-peer learning as it blurs physical and digital boundaries (Saini & Mir, 2023). The shift towards peer-driven learning enables students to take ownership of their education and improves critical thinking and problem-solving abilities. Through the use of interactive social media, students who were previously passive information consumers become active participants in their education (Fazel & Sayaf, 2025). With education becoming learner-centered, social media platforms allow students to customize their educational paths to suit their unique interests and requirements. Moreover, social media algorithms create content and recommendations based on information about users' interests and behavior. Students who find information personally meaningful to them are more likely to interact with and remember it. Learners have access to an extensive selection of online courses and resources on platforms such as LinkedIn and Coursera, many of which are provided by prestigious universities and institutions (Saini & Mir, 2023). Social media also offers individualized learning opportunities, allowing instructors to modify their pedagogical approaches to accommodate each student through personalized feedback, pertinent content, and self-paced learning. Students can showcase their output of a subject by producing short films, interactive presentations, or infographics. Moreover, instructors can identify areas that need more clarification and assess students' understanding using online surveys, tests, and discussion forums.

### Social media as a facilitator of real-time communication and teamwork without boundaries

Social media's ability to link people across geographical and cultural borders is one of its most significant contributions to education. Social media facilitates conversations and real-time contact, which improves student involvement and teamwork in learning communities (Gustafson, 2025). Insufficient communication between instructors and students can lead to a lack of feedback and poor learning outcomes. Therefore, effective communication between both parties can address this issue.

Besides, social media applications encourage teamwork by enabling students to collaborate toward common goals. Social media use in distance learning promotes student connection and communication while lessening emotions of loneliness (Manousou & Koutsogiannopoulou, 2024). Social media facilitates cooperation between educational institutions and students around the world, encouraging resource sharing and multidisciplinary engagement (Joshi & Kumar, 2025). Peer tutoring and collaborative learning are fostered by Facebook pages, WhatsApp groups, and instructional TikTok content, and they are essential in places with limited educational resources (Hedges, 2025). International students use YouTube for lecture videos and language learning while using Facebook and WhatsApp for messaging and academic information exchange, with 68.2% reporting social media use more than twice weekly (Muyingo, 2017). Turkish higher-education students ranked Instagram, WhatsApp, and YouTube as top tools for educational purposes, demonstrating overlapping functional use (Celik *et al.*, 2023).

### Disinformation and misinformation vulnerabilities

Social media use also has drawbacks, including disinformation, online safety issues, and distractions from the educational goal. Research examining university and college students reveals substantial vulnerability to misinformation despite this demographic's status as digital natives, with widespread gaps in formal training and frequent risky sharing behaviors documented across international student populations. A survey of 543 Spanish university students found that 76.7% reported receiving little or no formal instruction on detecting fake news, and approximately 40% were unaware when they encountered false information (del Moral Pérez *et al.*, 2025).

Large-scale studies demonstrate alarming behavioral patterns: in a multi-institutional instrument development study, 75% of participating university students reported behaviors categorized as risky for spreading fake news, and 83% failed to identify a false news story in a test task (Martin *et al.*, 2024). Indonesian university students showed similar vulnerabilities, with 75% admitting to believing a hoax at least once, and only 3 of 8 participants in a qualitative sample consistently verifying information before sharing (Nurrahmi & Syam, 2020). These findings reveal a critical disconnect between students' awareness of misinformation as a general problem and their actual verification practices. Detection abilities among students are uneven and predicted by specific cognitive factors: research with 157 university students found that critical thinking dispositions and new-media literacy together explained 18% of variance in fake news detection, with critical thinking exerting the larger effect (Orhan, 2023). Platform-specific vulnerabilities compound these challenges—qualitative interviews with student TikTok users revealed that short video formats and familiarity with content creators increase trust and make deceptive content more effective, with Mexican college students reporting TikTok videos as more successful at deceiving viewers than static images on other platforms (Lan & Tung, 2024; Galarza-Molina, 2023).

### Excessive use and distractions

In some countries in Southeast Asia, almost 30% of students say social media distracts them from their studies (UNESCO, 2023). Excessive or uncontrolled usage of social media is associated with procrastination, distractions, and poor time management (Arago, 2025).

The academic performance of university students is greatly impacted by the timing of their use of social media platforms. Okeya-Olayinka & Martins-Adediran (2025) highlighted sleep disturbance as a mediator in the detrimental effects of social media. Student sleep deprivation results from late-night social media use, which frequently pushes bedtime past 11 PM or even after midnight, therefore, poorer academic performance and diminished cognitive function are the outcomes of this (Kolhar *et al.*, 2021). Late-night social media usage interacts with hormones like serotonin and melatonin, leading to increased anxiety and lower academic quality. Some students create techniques to use social media for educational objectives, which can offset its negative effects and improve

academic achievements (Chandrasena & Ilankoon, 2022). Besides, a critical threshold can be identified at >2 hours/day associated with maladaptive coping patterns (self-distraction, behavioral disengagement) (Zhao, 2023).

### Data security and privacy concerns

Social media sites demand users to reveal their personal information, this raises questions regarding the security and privacy of student information (Fazel & Sayaf, 2025). University students demonstrate a pronounced privacy paradox, exhibiting high awareness of basic social media security threats yet engaging in persistent disclosure behaviors that expose them to significant data security risks. While 85% of Malaysian university students reported awareness of phishing threats and 78% recognized identity theft risks, only 45% were familiar with data-mining techniques and 40% with algorithmic profiling, revealing substantial gaps in understanding advanced data exploitation practices (Azad *et al.*, 2025). Behavioral data underscores the disconnect between awareness and practice: 66.7% of students frequently used their real names and profile pictures on social media, 53.3% occasionally shared personal information, yet only 16.7% regularly updated privacy settings despite 73.3% claiming awareness of how to adjust them (Peter & Ndinojuo, 2024; Vilar *et al.*, 2024). This privacy paradox—where Nigerian undergraduates (n = 389) held negative perceptions of privacy yet engaged in habitual self-disclosure—is driven by multiple factors including perceived social media benefits, privacy fatigue, and social norms that override security concerns (Akerele-Popoola *et al.*, 2023; Barclay & Harilal, 2025).

The consequences are measurable: 30% of university students reported experiencing online harassment, and research with 353 Bangladeshi college students demonstrated a significant positive relationship between personal information sharing and cybersecurity victimization (Vilar *et al.*, 2024). Educational interventions show promise—a long-term program at a Greek university produced measurable increases in privacy awareness and adoption of protection strategies—but effective approaches must address both cognitive elements (teaching concrete privacy settings management and advanced threat recognition) and motivational factors (building privacy self-efficacy, reducing privacy fatigue, and establishing peer norms that value data protection) to bridge the persistent gap between students' privacy concerns and their actual protective behaviors (Handa *et al.*, 2024; Sideri *et al.*, 2019).

The positive and negative effects listed above and summarized in Table 1 clearly demonstrate the scientific uncertainty surrounding the conclusion that social media has a negative impact on academic performance.

### Social media usage and GPA

Arago (2025) found a strong positive relationship between social media communication and academic achievement. Social media helps students become more involved in their studies and develop their social skills. Positive effects on GPA and overall academic results can result from increased social engagement, which can inspire students and maintain their enthusiasm in learning. Platforms such as YouTube, Facebook, and TikTok give users access to instructional videos, tutorials, and non-formal learning resources that enhance conventional classroom instruction. However, excessive or uncontrolled social media consumption cut down on the amount of time and attention spent on academics, and possibly lower GPA. When students use technology for academic purposes, they achieve higher learning results than when they use it primarily for amusement (Yun & Kim, 2025).

Higher social media exposure frequency is linked to worse academic performance (Lactawan *et al.*, 2024). Utilizing social media during study or class time is a major distraction that impairs concentration and leads to poor academic performance. Taha *et al.* (2025) highlighted that 64.6% of students reported being distracted by social media while studying, and heavy users typically had poorer GPAs than light users. Okeya-Olayinka & Martins-Adediran (2025) found a strong negative association between social media usage and academic performance. Social media negatively impacts students' cognitive abilities and academic performance by causing poor sleep quality and sleep deprivation. University students who are addicted to social media do worse academically (Salari *et al.*, 2025). Spending more than four hours a day on social media has been connected to diversions from studying, poor sleep, and mental tiredness, all of which can have a severe impact on academic performance and personal health. Students who spend a lot of time on social media risk losing attention and failing to succeed in school (Osman, 2025). Nighttime social

**Table 1. The Impacts of Social Media on Academic Performance.**

| Positive | Negative |
|---|---|
| Social media as a talent attraction tool | Disinformation and misinformation vulnerabilities |
| Social media as a creator of dynamic learning experiences | Excessive use and distractions |
| Social media as a facilitator of real-time communication and teamwork without boundaries | Data security and privacy concerns |

media use showed moderate association with sleep disturbances ($r = 0.48$, $p < 0.001$), assessment anxiety ($r = 0.42$, $p < 0.001$), and lower academic performance ($r = -0.28$, $p < 0.001$) in a 1,250-student Ghanaian study (Ntumi *et al.*, 2025). Students using social media at bedtime were more common among average-performing students in a Kenya programming study; high performers avoided early-morning and afternoon use during focused study times (Mvurya & Mwakondo, 2023)

Although, the effect of social media on GPA depends whether students use social media primarily for academic or social, entertainment, or recreational reasons. Therefore, social media use that is intentional and balanced is essential. In a recent study, better performing students reported using social media in a regulated and thoughtful manner, while higher usage was associated with a worse GPA (Taha *et al.*, 2025). Using social media earlier in the day, before study sessions, and outside of crucial academic hours, has fewer negative effects and helps students focus better on academic tasks (Adhikari, 2024). Students who use social media for more than three hours a day typically perform noticeably worse academically. Daily social media use and GPA were found to be negatively correlated in one study, particularly when usage takes place during periods of high academic engagement (Brahmi, 2025). There are typically fewer negative effects on academic performance when using it during truly free or unproductive times, such as break time or leisure time, that do not interfere with study or sleep (Arunachalam *et al.*, 2024). Sahoo & Pradhan (2025) also found that moderate and intentional social media use significantly improved students' academic performance. Study time and the ability to control oneself moderate the association between GPA and social media use (Talsma *et al.*, 2023).

### Social media usage and devices

University students' academic performance is greatly impacted by the devices they use for social media. Smartphones are the most common way to access social media, and using them while multitasking on social media during schoolwork is closely linked to this practice. When people multitask on their smartphones, their attention is fragmented, which lowers their GPA, learning effectiveness, and academic achievement. This is because of the restricted cognitive ability to manage several tasks at once, which leads to distraction and poor job completion (Essien, 2025).

Beside smart phones, laptops and tablets are also popular. Mobile devices and continual accessibility have been related to increased social media addiction and distraction (Irumva, 2023). Approximately 95% of teenagers have access to smartphones and they make great use of them for social media and online activities, although they are still readily available, desktops and laptops are typically less practical than smartphones for impromptu social media use (Anderson *et al.*, 2023). Generation Z exhibits an "almost constant" usage of social media, indicating a pattern of addiction woven into their way of life. Moreover, the fact that nearly one-third of teenagers report "almost constant" use of apps like TikTok, YouTube, and Snapchat highlights their severe addiction to and reliance on technology for social contact (Faverio & Sidoti, 2024). Students use smartphones more frequently for social media browsing because they are more convenient, while desktop computers are used for lengthier tasks and more work, and tablets are used less frequently, since they are digital natives and utilize social media frequently.

### Social media usage and age

University students aged 18-20 reported much greater levels of social media addiction and more hours spent on social media per day than students aged 21-24 or 25-29. Younger students' increasing usage of mobile devices for platforms such as TikTok and Instagram is associated with a higher risk of negative consequences such as poor mental health, which can have an indirect impact on academic performance. Older undergraduates and graduate students use social media devices less frequently and report less addiction. This shows an increase in maturity and self-regulation when utilizing social media devices. Graduate students use social media for less hours and exhibit less addiction than freshmen, demonstrating that age and academic level influence device use and related behaviors (Karayigit & Parlade, 2023).

Younger university students favor highly visual and interactive platforms accessed mostly via mobile devices, such as TikTok and Snapchat, which encourage heavy use and multitasking on devices. Indonesian university students reported 80% Instagram adoption (Setiani *et al.*, 2024). TikTok has become dominant among university students, with one U.S. undergraduate study reporting it as the most commonly used platform, particularly among female students (Woodward *et al.*, 2025). Older students use social media more judiciously, and they may favor sites that facilitate academic and professional networking. There are considerable disparities in usage patterns and satisfaction with certain social media sites among age groups, which are impacted by the accessibility and characteristics of the devices utilized. The earlier students start using digital devices, particularly those used for social media, the more likely they are to spend a lot of time on them throughout their university years, which influences their age-related social media behaviors and consequences. Studies show that early exposure to devices influences later patterns of social media usage and reliance (Slater *et al.*, 2025).

## Methodology

Participants of this research are based upon students in an International Business major at an undergraduate level in a Thai higher education institution who are exposed to and are users of social media platforms. This research is based on 158 respondents. The data was collected in May 2025 via an online questionnaire. The questionnaire contained numerous questions, from which the demographic characteristics of the respondents, the social media platforms they use, their daily usage time, the time of day they use them, the devices they use for the platforms, and their academic performance measured by GPA were examined in this article.

Table 2 presents the demographic characteristics of respondents. The sample consists of international students, mostly students from Myanmar (78.5%) and students from more than 10 other countries (21.5%). GPA categories reflect high academic achievement with 84.8% of students maintaining GPA above 3.00. Age distribution shows traditional undergraduate age range with majority between 21–23 years. Gender ratio shows approximately 3:1 female to male ratio. Socioeconomic status predominantly middle class, with upper/upper-middle (20.9%) and lower/lower-middle (12.0%) representing minorities.

## Results

The social media usage data from the international student sample (N = 158) reveals a distinct multi-platform engagement pattern that diverges notably from global user distribution, reflecting the specific demographic, cultural, and functional needs of this population. The sample demonstrates extremely high adoption rates across visual-oriented platforms and messaging applications, with usage patterns that suggest strategic platform selection based on purpose rather than simple popularity.

Although, Facebook is the most popular social networking site in the world, with 3.07 billion users, the most popular social media platform in the sample of undergraduate students is Instagram (Table 3).

The sample demonstrates intensive social media engagement far exceeding typical recommendations for healthy digital use (Table 4), 61.39% of students spend 5+ hours daily on social media, only 9.49% limit usage to 1–2 hours.

The data reveals a clear usage gradient that increases throughout the day, peaking in the late-night period (9 PM - 12 AM) when 73% of students are active (Table 5).

Smartphone dominance is overwhelming, with multi-device usage common (Table 6). Smartphones are the universal devices, while tablets are laptops are secondary. Desktop usage for social media is minimal. The percentages sum to 184%, indicating students use an average of 1.84 devices for social media access.

**Table 2. Demographic characteristics of respondents (N = 158).**

| Demographic variable | Category | Frequency (n) | Percentage (%) |
|---|---|---|---|
| **Year of study** | 1st Year | 38 | 24.1 |
| | 2nd Year | 41 | 25.9 |
| | 3rd Year | 58 | 36.7 |
| | 4th Year | 21 | 13.3 |
| **GPA** | Above 3.50 (max. 4.00) | 84 | 53.2 |
| | 3.00 – 3.50 | 50 | 31.6 |
| | Below 3.00 | 24 | 15.2 |
| **Home country (Nationality)** | Myanmar | 124 | 78.5 |
| | Other Countries (>10 countries) | 34 | 21.5 |
| **Age range** | 18 – 20 years | 37 | 23.4 |
| | 21 – 23 years | 88 | 55.7 |
| | 24 years and above | 33 | 20.9 |
| **Gender** | Female | 116 | 73.4 |
| | Male | 42 | 26.6 |
| **Estimated family socioeconomic status** | Richest 25% (Upper and Upper-Middle Class) | 33 | 20.9 |
| | Richest 25% – 50% (Middle Class) | 106 | 67.1 |
| | Lower than 50% (Lower-Middle and Lower Class) | 19 | 12.0 |

**Table 3. Platform adoption rates.**

| Social media platform | Monthly active users sample (%) | Monthly active users worldwide (n) |
|---|---|---|
| Instagram | 89 | 2 billion* |
| Facebook | 85 | 3.07 billion* |
| YouTube | 80 | 2.5 billion* |
| TikTok | 76 | 1.5 billion* |
| Messenger | 75 | 947 million* |
| Line | 66 | 178 million** |
| Telegram | 60 | 950 million* |
| Pinterest | 39 | 537 million* |
| Teams | 38 | 320 million** |
| Viber | 37 | 820 million** |
| LinkedIn | 34 | 310 million** |
| Snapchat | 30 | 850 million* |
| WhatsApp | 25 | 2 billion* |
| Discord | 22 | 200 million** |
| X | 22 | 586 million* |
| WeChat | 20 | 1.3 billion* |
| Threads | 16 | 275 million** |
| Twitch | 8 | 240 million** |
| Picsart | 8 | 150 million**** |
| Reddit | 7 | 606 million* |
| Douyin | 7 | 766 million* |
| Xiaohongshu | 4 | 200 million** |
| Weibo | 4 | 599 million* |
| QQ | 3 | 562 million* |
| Quora | 3 | 400 million* |
| imo | 1 | 200 million**** |
| Qzone | 1 | 500 million** |
| Tumblr | 1 | 135 million** |
| Vevo | 0 | 150 million**** |
| Likee | 0 | 150 million**** |
| Tieba | 0 | 676 million*** |
| JOSH | 0 | 150 million**** |
| Kuaishou | 0 | 714 million* |

Sources: *Statista, 2025; **Exploding Topics, 2025; ***Cropink, 2025, ****The Nation, 2023

**Table 4. Social media daily usage hours.**

| Number of hours spent on social media on average per day | Sample (n) | Sample (%) |
|---|---|---|
| 1–2 hours | 15 | 9.49 |
| 3–4 hours | 46 | 29.11 |
| 5–6 hours | 58 | 36.71 |
| More than 6 hours | 39 | 24.68 |

**Table 5. Social media temporal patterns.**

| Time of day | Social media usage sample (%) |
|---|---|
| Early morning (6 AM – 9 AM) | 8 |
| Late morning (9 AM – 12 PM) | 15 |
| Early afternoon (12 PM – 3 PM) | 21 |
| Late Afternoon (3 PM – 6 PM) | 28 |
| Evening (6 PM – 9 PM) | 39 |
| Late night (9 PM – 12 AM) | 73 |
| After midnight (12 AM – 6 AM) | 14 |

**Table 6. Device preferences for social media usage.**

| Device | Device usage sample (%) |
|---|---|
| Smartphone | 97 |
| Tablet | 44 |
| Laptop | 39 |
| Desktop | 4 |

The research examined the relationship between social media platforms and academic performance, which showed a significant difference between GPA and platform use in the case of eight platforms (Table 7). High performing students, compared to low performing students (H>L), are more likely to use Facebook, TikTok, and Viber. High performing students, compared to medium performing students (H>M), are more likely to use YouTube, Telegram, LinkedIn, and Pinterest. Medium

performing students, compared to low performing students (M>L), are more likely to use TikTok, while low performing students compared to medium performing students (L>M), are more likely to use Picsart. LinkedIn's concentration in high performers (44% vs. 20% medium) indicates career awareness and professional identity development among top students.

The study found a significant difference between social media use and academic performance in two time of day (Table 8). High performing students, compared to medium and low performing students (H>M; H>L), are more likely to use social media late at night. Low performing students compared to medium performing students (L>M), are more likely to use social media in the early morning.

The research found no difference between academic performance and device use. In the case of one device, a significant difference was found in the relationship between social media use and age group. Students aged 24 years old and above compared to students aged 21–23 years old (O>M), are more likely to use a desktop for social media usage (Table 9). There is no significant difference between age groups using other devices.

The research found no difference between academic performance and time spent using social media. However, it did find a significant difference in the case of one device in relation to time spent using social media. People using social media for 5–6 hours are more likely to use it on tablets than people using social media for 1–2 hours (Table 10). There are no significant differences for other devices.

**Table 7. Social media platform usage and academic performance.**

| Social media platform | Low (n=24) | Medium (n=50) | High (n=84) | F-Value | Scheffe multiple comparison |
|---|---|---|---|---|---|
| Facebook | 0.67 | 0.86 | 0.89 | 3.859* | H>L |
| YouTube | 0.79 | 0.68 | 0.87 | 3.561* | H>M |
| TikTok | 0.5 | 0.76 | 0.83 | 6.001** | H>L; M>L |
| Telegram | 0.5 | 0.46 | 0.71 | 5.049** | H>M |
| LinkedIn | 0.25 | 0.2 | 0.44 | 4.713* | H>M |
| Pinterest | 0.33 | 0.26 | 0.48 | 3.332* | H>M |
| Viber | 0.13 | 0.3 | 0.48 | 5.985** | H>L |
| Picsart | 0.21 | 0 | 0.08 | 5.331** | L>M |

*p<0.05, **p<0.01

H: High = high performing students with a GPA above 3.50 (maximum 4.00), M: Medium = medium performing students with a GPA between 3.00 and 3.50, L: Low = low performing Students with a GPA below 3.00

**Table 8. Time of day patterns.**

| Time of day | Low (n=24) | Medium (n=50) | High (n=84) | F-Value | Scheffe multiple comparison |
|---|---|---|---|---|---|
| Early Morning | 0.21 | 0.04 | 0.06 | 3.720* | L>M |
| Late Night | 0.54 | 0.64 | 0.85 | 6.450** | H>M; H>L |

*p<0.05, **p<0.01

H: High = high performing students with a GPA above 3.50 (maximum 4.00), M: Medium = medium performing students with a GPA between 3.00 and 3.50, L: Low = low performing Students with a GPA below 3.00

**Table 9. Age and device use for social media.**

| Device | Younger (n=37) | Medium (n=88) | Older (n=33) | F-Value | Scheffe multiple comparison |
|---|---|---|---|---|---|
| Desktop | 0.03 | 0.01 | 0.12 | 4.180* | O>M |

*p<0.05, **p<0.01

Y: Younger = 18–20 years old, M: Medium = 21–23 years old, O: Older = 24 and above

**Table 10. Usage hours and device preferences for social media.**

| Device | 2 (n=15) | 4 (n=46) | 6 (n=58) | 6+ (n=39) | F-Value | Scheffe multiple comparison |
|---|---|---|---|---|---|---|
| Tablet | 0.13 | 0.35 | 0.55 | 0.49 | 3.696* | 6>2 |

*p<0.05, **p<0.01, ***p<0.001

*2 = 1–2 hours, 4=3–4 hours,6=5–6 hours, 6+=More than 6 hours

## Discussions

### Popular social media platforms

The sample shows exceptional penetration of visual-first platforms, with Instagram (89%), Facebook (85%), and YouTube (80%) leading adoption rates. This aligns with research indicating that university students routinely use multiple platforms for distinct purposes, with visual platforms serving as primary channels for self-expression, creativity, and content discovery. The high Instagram usage (89%) is particularly noteworthy given that a study of Indonesian university students reported 80% Instagram adoption (Setiani *et al.*, 2024), suggesting this sample's usage exceeds typical student benchmarks. TikTok's 76% adoption rate in this sample is consistent with findings that TikTok has become dominant among university students, with one U.S. undergraduate study reporting it as the most commonly used platform, particularly among female students (Woodward *et al.*, 2025).

The sample demonstrates remarkably high engagement with messaging platforms, particularly Messenger (75%), Line (66%), and Telegram (60%). This pattern reflects international students' need for coordination, academic information exchange, and maintaining ties across geographic distances. The 66% adoption of Line is particularly significant, as this platform has only 178 million users worldwide, suggesting strong regional or cultural clustering within the sample—likely reflecting the 78.5% Myanmar student majority, as Line is popular in Southeast Asian markets.

A striking finding emerges when comparing sample usage rates to global user bases: WhatsApp, despite having 2 billion monthly active users worldwide (making it one of the largest platforms globally), shows only 25% adoption in this sample. This represents a dramatic inversion of global patterns and likely reflects regional platform availability, cultural preferences, and the specific composition of the sample. Research demonstrates that international students maintain home-country platforms alongside global ones; Chinese students studying in the U.S., for example, continued using Renren and QQ while also adopting Facebook, with motivations for both bridging and bonding ties predicting dual-platform intensity (Yuan *et al.*, 2014). The low adoption of Chinese platforms in this sample (WeChat 20%, QQ 3%, Weibo 4%) despite their massive global user bases (1.3 billion, 562 million, and 599 million respectively) further confirms that the sample is not predominantly Chinese, consistent with the reported 78.5% Myanmar majority.

Professional platforms show moderate adoption: LinkedIn (34%) and Teams (38%) indicate engagement with career networking and academic collaboration tools. These rates are substantial for a student population and suggest awareness of professional digital presence. Conversely, platforms with hundreds of millions of global users show minimal or zero adoption in this sample: Reddit (7% vs. 606 million global users), Twitch (8% vs. 240 million), and multiple platforms with 0% adoption despite 150+ million global users (Vevo, Likee, JOSH, Kuaishou). This pattern indicates highly selective platform adoption driven by specific functional needs, cultural relevance, and peer network effects rather than platform popularity alone.

The data reveals a sophisticated multi-platform strategy consistent with research findings that students maintain accounts on several platforms for distinct purposes. Turkish higher-education students ranked Instagram, WhatsApp, and YouTube as top tools for educational purposes, demonstrating overlapping functional use (Celik *et al.*, 2023). The sample's pattern suggests:

- Visual discovery and identity work: Instagram (89%), TikTok (76%), YouTube (80%);
- Messaging and coordination: Messenger (75%), Line (66%), Telegram (60%);
- Broad social networking: Facebook (85%);
- Professional development: LinkedIn (34%), Teams (38%);
- Content creation and sharing: Pinterest (39%), Snapchat (30%).

This functional segmentation aligns with findings that international students used YouTube for lecture videos and language learning while using Facebook and WhatsApp for messaging and academic information exchange, with 68.2% reporting social media use more than twice weekly (Muyingo, 2017).

### Social media consumption

This sample's usage intensity aligns with the upper range of documented student social media consumption (Alotaibi *et al.*, 2022; Dursun & Turan, 2025; Khatiwada, 2025), 90.51% of this sample exceeds the threshold (2 hours/day) (Zhao, 2023) for potential negative psychological effects. The concentration of usage in the 5–6+ hour range (61,39%) places the majority of students in a high-risk category for sleep disruption (late-night use mediates the relationship between social media time and academic performance), academic displacement (time spent on social media directly competes with study time) and psychological distress (anxiety and depression). The fact that only 9.49% maintain 1–2 hours of daily usage

suggests either (1) normalization of intensive use within this international student community, or (2) functional necessity (academic coordination, maintaining home-country ties), or (3) limited awareness of healthy usage guidelines, or (4) addictive patterns requiring intervention.

The 73% late-night engagement rate suggests that nearly three-quarters of students are potentially compromising sleep quality and next-day cognitive function. Combined with the 61.39% spending 5+ hours daily, this indicates that a substantial portion of the 5–6+ hours occurs during late-night periods when it most disrupts circadian rhythms and academic preparation.

The near-universal smartphone adoption (97%) aligns with global trends showing smartphones as the primary social media access point (Anderson *et al.*, 2023). The substantial tablet (44%) and laptop (39%) usage suggests context-switching behavior (smartphone for mobile/casual use, laptop/tablet for extended sessions or academic contexts), screen size preferences (tablets and laptops may be preferred for content consumption), and functional differentiation (smartphones for messaging and larger screens for visual platforms).

### Paradoxical patterns

Table 7 reveals the study's most counterintuitive finding that high-performing students (GPA 3.50-4.00) use more platforms more intensively than lower-performing peers, contradicting the simple "more social media = worse grades" narrative. This paradoxical pattern suggests several non-mutually-exclusive explanations. First, high performers may use platforms strategically: YouTube (87% in high performers) for educational content and lecture supplements, Telegram (71% in high performers) for Academic coordination and study groups, LinkedIn (44% in high performers) for professional development and career networking, and Pinterest (48% in high performers) for visual organization and project inspiration. Second, high performers may possess better time management, stronger awareness of when usage becomes counterproductive, and goal-oriented usage. Third, platform diversity may reflect to broader social networks, better information access, and collaboration/learning possibilities. Moreover, there could be a reverse causality consideration that high GPA may enable more social media use rather than vice versa. Students who easily maintain high grades have more discretionary time, and academic confidence reduces study anxiety, permitting relaxation via social media.

Table 8 reveals another paradoxical pattern that high-performing students use social media more during late-night hours than their peers, despite research showing late-night use harms academic performance. The finding that 85% of high performers use social media late at night (vs. 64% medium, 54% low) directly contradicts research showing nighttime use associated with sleep disturbances, lower academic performance and assessment anxiety (Ntumi *et al.*, 2025). The following explanations can be given to resolve this paradoxical problem: (1) high performers may have better bedtime and sleeping routines, (2) they are more efficient in their studies and complete their academic work before using social media, and (3) late-night social media may serve as a reward after intensive study and a stress relief mechanism that prevents burnout. Research confirms that high performers avoid early-morning and afternoon use during focused study times (Mvurya & Mwakondo, 2023). In contrast, low performers' higher early-morning usage (21% vs. 4–6% for others) suggests using social media instead of morning preparation. They might wake early but not productively.

### Devices

The significant desktop preference among older students (24+) likely reflects that students now 24+ (born ~2001 or earlier) had more desktop exposure during formative years. Research shows younger students (≤21 years) were more likely to be smartphone-addicted (Alotaibi *et al.*, 2022), consistent with younger cohorts' mobile-first orientation. Besides, older students may have professional experience requiring desktop proficiency. Furthermore, advanced coursework may require desktop tools (statistical software, programming, design) and older students may prioritize screen size and ergonomics for extended sessions.

Tablets are popular second devices for using social media, especially for extended sessions. Tablets may be preferred for larger screen than smartphone but more portable than laptop. Furthermore, heavy users (5–6+ hours) likely to switch between devices throughout the day, use smartphones for quick checks and messaging and tablets for extended content consumption sessions.

## Implications

The paradoxical findings suggest that students should focus on strategic platform selection rather than simple usage reduction. High performers' success despite intensive late-night usage indicates that self-regulation and purposeful engagement matter more than total screen time. Students should prioritize platforms offering educational value (YouTube for tutorials, Telegram for academic coordination, LinkedIn for professional networking) over purely entertainment-focused options. Rather than eliminating social media, students should develop metacognitive awareness of usage patterns, distinguish between productive and distracting engagement, and cultivate time management skills enabling intensive use without academic cost. The key is intentional, goal-oriented usage aligned with academic and professional development objectives.

Universities serving international student populations should recognize that students maintain diverse platform portfolios for different functions. Educational communication strategies should employ multiple channels—particularly Instagram, Facebook, YouTube for broad reach, and Telegram/Messenger for coordination—rather than relying on single-platform approaches. The 38% Teams adoption suggests moderate success with institutional platforms, but organic peer-to-peer communication occurs primarily on consumer social platforms.

The multi-platform engagement pattern (students using 10–15 platforms actively) suggests high digital literacy and comfort with technology, but also potential for information overload and privacy concerns. Student support services should address platform-specific risks: research shows higher self-reported time on TikTok and YouTube associated with more mental health problems in young adults, while Snapchat use associated with fewer issues (Woodward *et al.*, 2025). The 25% WhatsApp adoption, despite its global dominance, indicates

that assumptions about "universal" platforms may not hold for specific international student populations.

The divergence between global user bases and sample adoption rates underscores the importance of context-specific measurement rather than relying on global platform popularity as a proxy for actual usage. The data demonstrates that platform choice reflects complex interactions of cultural background (78.5% Myanmar), functional needs (academic vs. social), peer networks, regional availability, and individual preferences.

## Conclusions

This international student sample exhibits a sophisticated, purpose-driven multi-platform engagement strategy that prioritizes visual platforms for discovery and identity (Instagram, TikTok, YouTube), messaging apps for coordination (Messenger, Line, Telegram), and maintains selective adoption of professional tools (LinkedIn, Teams). The pattern diverges sharply from global user distributions, reflecting the specific demographic composition (78.5% Myanmar, 73.4% female, predominantly 21–23 years old), cultural contexts, and functional needs of international students in higher education. The findings reinforce research demonstrating that students do not simply adopt the most popular platforms globally, but rather construct personalized platform portfolios based on convenience, social ties, language, local availability, and specific use cases. Understanding these nuanced patterns is essential for institutions, educators, and policymakers seeking to effectively engage with and support international student populations in increasingly complex digital ecosystems.

This analysis reveals concerning patterns of intensive usage, late-night engagement, and complex relationships with academic performance. The data presents a paradox: high-performing students (GPA 3.50-4.00) demonstrate both higher platform adoption rates and more intensive late-night usage compared to their lower-performing peers, challenging conventional assumptions about social media's uniformly negative impact on academic achievement. The findings suggest that high achievers may possess superior self-regulation strategies or use platforms more strategically for academic purposes, while lower performers may lack these compensatory mechanisms.

## Limitations and future research directions

This study has several limitations that warrant consideration when interpreting findings. First, the cross-sectional design precludes causal inference: while high-performing students demonstrate greater platform diversity and more intensive late-night usage, we cannot determine whether these usage patterns enable academic success or whether high GPA affords students more discretionary time for social media engagement; longitudinal data tracking students across semesters would be necessary to establish temporal precedence and causal direction. Second, reliance on self-reported data introduces potential biases: students may under- or over-estimate daily usage hours, social desirability may influence reporting of platform choices or usage intensity, and recall bias may affect accuracy of time-of-day patterns, particularly for retrospective estimates of late-night engagement. Third, sample specificity limits generalizability: the predominance of Myanmar nationals (78.5%) and female students (73.4%) may create demographic-specific patterns that differ from other international student populations or gender-balanced samples, and findings from international students navigating cross-cultural educational environments and transnational communication needs may not extend to domestic student populations. Fourth, our measurement of platform adoption (binary yes/no) rather than platform-specific time allocation prevents us from determining whether high performers' greater platform diversity reflects truly higher total usage or merely broader but shallower engagement across more platforms; stratifying total daily hours by GPA category would clarify whether the paradox reflects usage quantity or quality differences. Fifth, the absence of mediating variable measurements limits explanatory power: we lack data on sleep quality, psychological stress, self-regulation capacity, and critically, the distinction between academic versus recreational usage of each platform; without measuring whether high performers use YouTube primarily for educational content or TikTok for study breaks versus entertainment, we cannot definitively attribute the paradoxical patterns to strategic engagement rather than unmeasured confounds. Future research should address these limitations through longitudinal designs, objective usage tracking via smartphone applications, diverse international samples, platform-specific time diaries, and measurement of hypothesized mediators including self-regulation, usage purpose, and sleep quality.

## Ethics and consent

This study was conducted in accordance with the principles stated in the Declaration of Helsinki. Ethical approval for this research study was obtained from the Scientific Advisory Board of the Széchenyi István University (SZE/ETT-90/2025). All participants provided written informed consent prior to participation.

## Data availability

### Underlying and extended data

Zenodo: Social Media Usage Patterns and Academic Performance Among International Business Students: A Cross-Sectional Study from a Thai University, https://doi.org/10.5281/zenodo.17701004 (Prohmvitak & Szabo, 2025)

This project contains the following underlying data:

- Data_.xlsx (Dataset)

This project contains the following extended data:

- Questionnaire.pdf (Consent form and questionnaire questions)

Data is available under the terms of Creative Commons Attribution 4.0 International.

## Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work the authors used Grammarly and DeepL Translate in order to improve the readability and language of the manuscript. After using these tools, the authors reviewed and edited the content as needed and takes full responsibility for the content of the publication.

### Acknowledgements

We would like to thank the anonymous respondents for contributing to the research.

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# Open Peer Review

## Current Peer Review Status: ? ?

**Version 1**

Reviewer Report 10 January 2026

https://doi.org/10.21956/openreseurope.23712.r67551

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**Amin Hosseinian-Far**
University of Hertfordshire, Hatfield, UK

This is an interesting study focusing on examining student achievement and social media addiction within the Thai context. The study focuses on a single Thai university, which makes the generalisability quite cautious (acknowledged by the authors). The findings are certainly interesting, and from a methods perspective, what the authors have done makes sense. The references are current and acknowledge the wider perspectives on the subject matter.

The area that, in my view, needs further strengthening relates to the confounders that may exist within the Thai context. For example, are there normative uses of social media among educators and students? What are the main purposes of social media use by students, and how do these vary across student groups? Are there psychological mediators, such as academic self-efficacy, that may influence the results in this context? Are there still pandemic-related learning effects within the country? Could the notion of a digital divide be a confounder here, in terms of students having more stable internet connections, better devices, or higher digital literacy? In addition, a cautious point is that addiction scales developed in other contexts may not necessarily translate well culturally. For instance, high-frequency use may be misclassified as addiction in certain contexts.

All in all, this is a strong study that offers a different perspective on the ongoing debate around these issues. It has the potential to be a valuable addition to the literature; however, it requires improvements to the narrative, conclusion, and discussion of the above confounders to ensure it does not misguide the reader. I would therefore suggest that the authors make some revisions to provide a more balanced picture of their findings.

In particular, the conclusion section of the abstract should be amended, as it currently seems to reflect confirmation bias. The authors are using findings from a single case study and generalising them to the wider Thai context and beyond. It would be helpful to include a concise section (or within the Discussion section where paradoxes are discussed, yet this can be either within the discussion or the literature review), that provides a more focused overview of the possible confounders in studies of this nature. Some are highlighted in the paradoxes, but these need to

be strengthened in my view. Some of these additional factors have been highlighted above and may unintentionally influence the results, especially in the Thai context. Highlighting them would also strengthen the narrative around future research pathways. The conclusion should be revised to reflect these points. The study limitations are written nicely but should more explicitly refer to some of these potential confounders.

Best of luck to the authors, and thanks in advance for their engagement

**Is the work clearly and accurately presented and does it engage with the current literature?**
Yes

**Is the study design appropriate and is the work technically sound?**
Yes

**Are sufficient details of methods and analysis provided to allow replication by others?**
Yes

**Are all the source data and materials underlying the results available?**
Yes

**If applicable, is the statistical analysis and its interpretation appropriate?**
I cannot comment. A qualified statistician is required.

**Are the conclusions drawn adequately supported by the results?**
No

***Competing Interests:*** No competing interests were disclosed.

***Reviewer Expertise:*** Systems, Sustainability, Operations, Higher Education

**I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.**

Reviewer Report 07 January 2026

https://doi.org/10.21956/openreseurope.23712.r66177

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**Ana Jimenez-Zarco**
UOC Open University of Catalonia, - Barcelona, Spain

The paper investigates the relationship between social media use and academic performance

among international business students enrolled in a Thai higher education institution. Using a cross-sectional survey design (n = 158), the study examines patterns of platform adoption, time spent on social media, temporal usage patterns, and their associations with students' grade point average (GPA).
The authors report a set of "paradoxical" findings, notably that higher-performing students use a greater diversity of social media platforms and report higher levels of late-night social media use compared to lower-performing peers.
The topic is timely and relevant, particularly in light of ongoing debates on digital behavior, student well-being, and academic performance in higher education. The manuscript is clearly motivated, generally well-structured, and engages with recent literature. Also, they adhere commendably to open science practices by making the dataset and questionnaire publicly available and by providing explicit ethical and transparency statements, which aligns well with the principles of Open Research Europe.
However, despite these strengths, the manuscript in its current form does not yet meet the standards required for scientific robustness and interpretive clarity.
Substantial changes are required to ensure that the conclusions are fully supported by the data, that the statistical analysis is appropriate and transparent, and that the interpretive claims remain strictly aligned with what can be inferred from a cross-sectional, self-reported dataset.
The study is clearly presented overall and engages with current literature, but only partly meets this criterion. While the literature review is up-to-date and relevant, the manuscript does not sufficiently distinguish between established empirical findings and speculative interpretations. In particular, the discussion frequently moves from observed associations to explanatory mechanisms—such as superior self-regulation, strategic social media use, or adaptive time management—without directly measuring or testing these constructs. To address this issue, the authors should revise the discussion to clearly separate empirical findings from interpretive hypotheses, explicitly framing the latter as conjectures or directions for future research rather than as explanations supported by the present data.
The study design is appropriate for exploratory analysis, but only partly technically sound in its current implementation. A cross-sectional survey is suitable for identifying associations, but not for drawing causal inferences. Although this limitation is acknowledged in the manuscript, some sections of the discussion implicitly suggest causal or mechanistic explanations. These passages should be carefully revised to avoid causal language. Moreover, the absence of key control variables—such as age, year of study, socioeconomic background, workload, employment status, or language proficiency—raises concerns about unobserved confounding. To strengthen the scientific soundness of the work, the authors should either incorporate a basic multivariable analysis controlling for available covariates or, if this is not feasible, explicitly state that the reported associations may reflect confounding factors and should be interpreted with caution.
Regarding methods and analysis, sufficient detail is provided to understand the general analytical approach, but not enough to allow full replication. Key aspects require clarification, including how variables were coded, how missing data were handled, and the precise analytical steps taken prior to hypothesis testing. In addition, the manuscript alternates between references to chi-square tests and the reporting of ANOVA F-statistics for binary outcome variables (e.g., platform adoption coded as yes/no). This inconsistency must be resolved. The authors should clearly justify their choice of statistical tests, explain why these tests are appropriate for the data structure, and consider whether alternative approaches—such as logistic regression or contingency-table analysis—would be more suitable. Reporting effect sizes and confidence intervals, in addition to p-values, is essential to improve interpretability and rigor.
The statistical analysis and its interpretation are therefore only partly appropriate. In addition to

the issues noted above, the manuscript involves multiple comparisons across platforms and time slots without addressing the increased risk of Type I error. The authors should either apply a correction for multiple testing or explicitly discuss this limitation and its implications for the robustness of the findings. Furthermore, some conclusions—such as the assertion that "quality of use outweighs quantity of use"—are not directly supported by the variables measured, since neither purpose of use nor qualitative dimensions of engagement are operationalized. These conclusions should be either substantiated with additional analyses (if relevant data are available) or reformulated as tentative interpretations.
The conclusions are only partly supported by the results. While the descriptive patterns reported in the results section are generally consistent with the conclusions, the manuscript often extends beyond what can be empirically demonstrated. To make the article scientifically sound, the authors must moderate claims about mechanisms, clearly delimit the scope of inference, and ensure that all conclusions are directly traceable to the presented analyses.
Several additional points should also be addressed. The sample is highly specific, with a strong concentration of female students and students from a single nationality group. This limits generalizability and should be reflected more clearly in the framing of the findings. The section on late-night social media use would also benefit from more cautious interpretation, as no direct measures of sleep quality or fatigue are included; links to sleep disruption should therefore be framed as hypotheses rather than conclusions.
In my opinion, the manuscript addresses an important and timely topic and demonstrates commendable openness in data sharing and ethical reporting. However, substantial revisions are required to improve methodological transparency, statistical appropriateness, and interpretive discipline. The following points must be addressed to make the article scientifically sound: clarification and justification of statistical methods; inclusion of effect sizes and consideration of multiple comparisons; stronger alignment between conclusions and measured variables; explicit avoidance of causal or mechanistic claims unsupported by the data; and clearer discussion of confounding and limits to generalization.

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**Is the work clearly and accurately presented and does it engage with the current literature?**

Partly

**Is the study design appropriate and is the work technically sound?**

Partly

**Are sufficient details of methods and analysis provided to allow replication by others?**

Partly

**Are all the source data and materials underlying the results available?**

Yes

**If applicable, is the statistical analysis and its interpretation appropriate?**

Partly

**Are the conclusions drawn adequately supported by the results?**
Partly

***Competing Interests:*** No competing interests were disclosed.

***Reviewer Expertise:*** Digital Transformation, Business and Marketing

**I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.**