

Impact of social media on higher education: Academic performance, leadership and co- curricular activity engagement



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Abstract This study explores students' perceptions at a Malaysian Technical University toward social media use and its impact on cocurricular activities, leadership, and academic achievement. Using a quantitative cross-sectional survey, a questionnaire was administered to a population of 1,000 students, with 278 respondents determined using Krejcie and Morgan's sampling method. Data analysis included descriptive and inferential statistics. The study achieved a 99.6% response rate with 277 respondents, comprising 77% Malay, 12% Chinese, 8% Indian, and 3% from other races. Educational levels were predominantly bachelor's degrees (93%) and diplomas (7%). WhatsApp was the most frequently used social media application (23%), while other applications were the least used (1%). The highest average time spent on social media was for social purposes ($\mu = 3.30$), followed by online gaming ($\mu = 2.78$). A significant relationship was found between academic achievement and leadership ($r = 0.369$; $p < 0.01$). However, no significant relationship was identified between social media use and involvement in extracurricular activities, academic achievement, or leadership. Sleep deprivation is prevalent, with most students sleeping less than the recommended 7 hours per night. Despite this, many students still achieve high academic performance, indicating resilience and effective time management. Addressing sleep deprivation is crucial for maintaining cognitive function and overall health. The study concludes that while the students have considerable free time, social media usage does not significantly affect academic performance. Increased participation in extracurricular activities is recommended. Additionally, limiting social media use is advised for better health and well-being.

Keywords: university students, leadership, digital engagement, social media addiction, academic, student development

1. Introduction

Social media has become an integral part of daily life for university students, serving as a platform for communication, information sharing, and entertainment. The pervasive use of social media among students has prompted extensive research into its impact on various aspects of their lives, particularly academic performance and leadership skills. Social media addiction and its impact on university students' academic performance have been extensively studied, revealing various outcomes in different contexts and methodologies. One key finding is the general consensus that excessive social media use tends to negatively affect academic performance. For example, a study conducted among medical science students in Iran revealed a significant negative correlation between social media addiction and academic performance, with male students showing higher levels of addiction and poorer academic outcomes than their female counterparts (Azizi et al., 2019). This aligns with another study in Lebanon, where researchers noted that different dimensions of social media addiction—such as compulsive feelings, social consequences, and time displacement—negatively influence students' GPA and attendance rates (Hamam et al., 2023).

Studies from various regions, such as Kinshahaha (Enguta and Andi., 2023), Sindh (Pasand, 2023), and Punjab (Maha et al., 2022), have also shown that social media addiction is associated with lower academic achievements, reduced GPA, and increased levels of anxiety and depression. Additionally, research highlights that addiction to social media leads to compulsive behaviors, social consequences, and time displacement, all of which negatively affect academic outcomes (Maha et al., 2022). These findings emphasize the importance of promoting responsible social media usage among students through awareness sessions and institutional guidelines to mitigate the adverse effects on academic success and overall well-being. Leadership qualities may also be compromised, as addiction can divert time and focus away from activities that foster leadership skills.

Conversely, some studies highlight the complex role of engagement in mediating these effects. Research involving students from government universities in Pakistan suggests that while social media addiction generally hinders academic



performance, high levels of student engagement can mitigate these negative effects (Alvi et al., 2022). This is supported by another study that used the Social Networking Site Addiction Scale and the Utrecht Work Engagement Scale for students to demonstrate that engaged students maintained better academic performance despite high levels of social media use (Li et al., 2019). The psychological effects of social media addiction further complicate its impact on academic performance. A study from Jordan highlighted that social media addiction indirectly affects academic performance through increased levels of stress and anxiety, which in turn impact students' academic outcomes (Malak et al., 2021). This finding is supported by research from Sindh, Pakistan, where it was observed that social media addiction negatively correlates with both academic performance and psychological well-being, with male students exhibiting higher levels of addiction and subsequent academic challenges (Qureshi et al., 2023).

Table 1 shows international findings on social media, methodology and research findings. Interestingly, the impact of social media use varies depending on how students manage their time and the purpose of their social media activities. Studies from Peru and Nigeria indicate that students who primarily use social media for entertainment and nonacademic purposes tend to experience more negative academic outcomes than do those who use it for educational purposes (Quiñonez-Choquecota et al., 2023; Suganya et al., 2020). This suggests that the nature and management of social media use are critical factors in determining its impact on academic performance.

Table 1 International research on social media, methodologies and findings.

Study	Key Findings	Journal Information
The Relationship Between Social Media Addiction and Life Satisfaction and Emotions Among University Students in Malaysia	This study examines the relationship between social media addiction, life satisfaction, and emotions among Malaysian university students, revealing that higher addiction levels correlate with lower life satisfaction and negative emotions	(Sidek, 2022)
The Impact of Social Media Addiction on Academic Performance Among University Students	Negative impact of social media addiction on academic performance	Mensah, et al 2016)
Association of Symptomatologic Depression with Social Media Addiction Among University Students in Malaysia	Strong association between social media addiction and symptomatologic depression	Subramaniam et al 2024
Exploring Determinants of Social Media Addiction in Higher Education Through the Integrated Lenses of Technology Acceptance Model (TAM) and Usage Habit	Determinants include social norms, perceived ease of use, and usage habits	Paiman and Fauzi. (2024).
Relationships Between Social Media Addiction and Self-Esteem Among University Students in Malaysia	Negative correlation between social media addiction and self-esteem	Yi and Ahmad (2023).

Table 2 shows studies related to social media addiction among university students in Malaysia. The findings highlight how social media addiction influences life satisfaction, emotions, academic performance, depression, and self-esteem among university students. "The Relationship Between Social Media Addiction and Life Satisfaction and Emotions Among University Students in Malaysia," conducted by Sidek (2022), explores the direct correlation between social media addiction and overall life satisfaction and emotional states. The study concludes that higher levels of social media addiction are associated with lower life satisfaction and more negative emotions among students. This suggests that as students become more addicted to social media, their overall happiness and emotional well-being deteriorate.

Another crucial study, "The Impact of Social Media Addiction on Academic Performance Among University Students," by Mensah et al. (2016), focused on the academic repercussions of social media addiction. The findings indicate a negative impact, highlighting that students who are heavily addicted to social media tend to perform poorly academically. This connection implies that excessive use of social media can distract students from their studies, leading to lower grades and academic achievements. The study "Association of Symptomatologic Depression with Social Media Addiction Among University Students in Malaysia" by Subramaniam et al. (2024) further emphasized the mental health consequences of social media addiction. These findings reveal a strong association between social media addiction and symptomatic depression, suggesting that students who are addicted to social media are more likely to experience symptoms of depression. This finding is critical, as it underscores the potential mental health crisis linked to social media overuse. Additionally, Paiman and Fauzi (2024), in their study "Exploring Determinants of Social Media Addiction in Higher Education Through the Integrated Lenses of Technology Acceptance Model (TAM) and Usage Habit", identified various factors that contribute to social media addiction. These determinants include social norms, perceived ease of use, and habitual usage, providing a comprehensive understanding of what drives students toward addictive behaviors in the context of social media. This insight is valuable for developing interventions aimed at reducing addiction by targeting these specific determinants. Finally, the study "Relationships Between

Social Media Addiction and Self-Esteem Among University Students in Malaysia" by Yi and Ahmad (2023) revealed a negative correlation between social media addiction and self-esteem. This finding indicates that students who are more addicted to social media tend to have lower self-esteem. This relationship suggests that constant comparison and the need for validation on social media platforms may erode students' self-confidence and self-worth.

Table 2 Research on social media addiction among Malaysian university students.

Literature Title	Methodology	Findings
<ul style="list-style-type: none"> Social networks addictions and academic performance of students at the University of Kinshasa, (Enguta and Andi., 2023). 	<ul style="list-style-type: none"> Survey method supported by Social Network Addictions Assessment Test 	<ul style="list-style-type: none"> Social media addiction negatively impacts academic performance, as nonaddicts outperform addicts. The study does not address the impact of social media addiction on leadership among university students.
<ul style="list-style-type: none"> Effects of social media on psychological wellbeing and academic performance among university students in Sindh (Pasand, 2023) 	<ul style="list-style-type: none"> Survey conducted among 600 undergraduate students from Universities of Sindh. Correlation analysis used to examine relationship between social media addiction, psychological well-being, and academic performance. 	<ul style="list-style-type: none"> Social media addiction negatively impacts university students' academic performance and psychological well-being, potentially affecting their leadership roles due to its correlation with lower GPA.
<ul style="list-style-type: none"> Facebook addiction and affected academic performance among Ethiopian university students: A cross-sectional study (Dule et. Al., 2023) 	<ul style="list-style-type: none"> Bergen Facebook Addiction Scale (BFAS) Rosenberg Self-Esteem Scale (RSES) Hospital Anxiety and Depression Scale (HADS) Study Habit Questionnaire (SHQ) 	<ul style="list-style-type: none"> Facebook addiction among university students negatively impacts academic performance, mental well-being, and self-esteem. Implementing policies for safe usage is crucial to mitigate these detrimental effects.
<ul style="list-style-type: none"> Social media addiction in university students in Lebanon and its effect on student performance (Bassam et al., 2023) 	<ul style="list-style-type: none"> Self-administered questionnaire using Google form Validated scale (Social Media Addiction Scale, SMAS) used in questionnaire 	<ul style="list-style-type: none"> Social media addiction negatively impacts academic performance in university students by reducing GPA, increasing absenteeism, and lowering passing rates, potentially affecting leadership roles indirectly.
<ul style="list-style-type: none"> Role of media on academic performance of students (Iqbal et. Al., 2023) 	<ul style="list-style-type: none"> Multistage sampling method Convenience sampling method 	<ul style="list-style-type: none"> Social media usage positively influences academic performance Significant proportion of participants used social media for academic achievements
<ul style="list-style-type: none"> Social media and university students: trends and effects studies (Maha et al.,2022) 	<ul style="list-style-type: none"> Quantitative study using survey research method Convenient sampling technique was adopted 	<ul style="list-style-type: none"> Social media addiction among university students can positively impact academic results by aiding in academic searches but may negatively affect leadership due to distractions and time wastage.

These studies collectively highlight the multifaceted impact of social media addiction on university students. The adverse effects on life satisfaction, academic performance, mental health, and self-esteem point to a significant public health concern. Addressing social media addiction requires a multifaceted approach that includes education, awareness, and supportive interventions to mitigate its negative consequences for young adults.

2. Materials and Methods

This study employs a quantitative research design and a cross-sectional survey method to investigate the relationship between students' attachment to social networks and their academic performance. The primary instrument for data collection was a structured survey questionnaire. The questionnaire was designed to measure students' perceptions of how their attachment to social networks affects their academic performance. It includes Likert scale items ranging from "Strongly Disagree" to "Strongly Agree" to capture the extent of agreement with various statements related to social media use and academic outcomes. The population for this study comprised students from the UTaM Tuah Residential College, which has various faculties and disciplines, with a total population size of 1000 students. The sampling method used for this study was



based on the Krejcie & Morgan sampling table, which provides guidelines for determining the sample size for a given population. According to this table, a sample size of 277 respondents was deemed appropriate for a population of 1000 students. The participants were selected via simple random sampling to ensure that each student had an equal chance of being included in the study.

The collected data were analyzed via both descriptive and inferential statistical methods. The descriptive analysis included calculating the frequency, percentage, and mean for each survey item to summarize the respondents' perceptions and experiences, providing an overview of the general trends and distributions of the responses. Inferential analysis involves Pearson correlation analysis to examine the relationships between students' attachment to social networks and their academic performance, identifying the strength and direction of the associations between the variables under study.

3. Results and Discussion

In this section, the results are discussed in Section 3.1 Demographic analysis; Section 3.2 Rates and Purposes of Social Media and Online Gaming Usage Compared with Social Activities; Section 3.3 Quality of Social Media Use, Sleep Duration, and Co-Curricular Activities; Section 3.4 Impact of Online Games and Social Media Use on Leadership; Section 3.5 Students' Attachment to Social Networks and Academic Performance; and Section 3.6 Correlation Analysis between Factors.

3.1. Demographic analysis

The demographic breakdown of the study's respondents as in Table 3 reveals a predominant Malay representation, with 213 individuals comprising 76.9% of the sample. This high percentage suggests that the study largely reflects the views and behaviors of the Malay ethnic group, providing specific cultural and social insights. The Chinese community is the second-largest group, with 32 respondents (11.6%), followed by the Indian community, with 23 respondents (8.3%). The "Others" category, which includes other ethnicities such as Kadazan, Murut, Bajau, Indian Muslim and others, accounts for nine respondents (3.2%). The majority of the respondents, 257 individuals, pursue a bachelor's degree, which constitutes 92.8% of the total sample. This dominant representation indicates that the study's findings predominantly reflect the experiences and perspectives of Bachelor's degree students. The analyses on the basis of their year of study reveal that a significant majority are in their first and second years of university. Specifically, 155 respondents, accounting for 56.0% of the total sample, are in their first year, and 109 respondents, accounting for 39.4%, are in their second year. Together, these groups represent 95.4% of the total respondents. The small remaining portions include third-year students (2.9%) and fourth-year students (1.8%). The mean value of 1.51 for the year of study indicates that the majority of respondents are clustered around the early years of their academic journey, primarily years 1 and 2. This concentration is significant because students in their first and second years are typically required to reside in university hostels. This compulsory residence could influence social media usage patterns and addiction levels due to the unique social environment and peer interactions facilitated by on-campus living.

Table 3 Demographic data of the research.

Category	Classification	Frequency (N)	Percentage (%)	Mean (μ)
Race	Malay	213	76.9	1.38
	Chinese	32	11.6	
	Indian	23	8.3	
	Others	9	3.2	
Level of study	Diploma	20	7.2	1.93
	Bachelor's degree	257	92.8	
Year of study	Year 1	155	56.0	1.51
	Year 2	109	39.4	
	Year 3	8	2.9	
	Year 4	5	1.8	
Cgpa	Third class honors	4	1.4	2.99
	Lower second class	75	27.1	
	Upper second-class	119	43.0	
	First-class honors	79	28.5	

The CGPA data reveal that the majority of the respondents perform well academically, with 71.5% of the students falling into the upper second-class and first-class honors categories. The average CGPA of 2.99 supports this observation, suggesting overall high academic achievement among the participants. This distribution highlights that most respondents maintain strong academic standards, which could influence their study habits, time management, and potentially their social media usage patterns. Understanding this academic background is crucial for interpreting a study's findings on social media usage and its impact on students. Figure 1 shows the findings of social media usage and the data show a high level of engagement with

WhatsApp (81.9%) and Instagram (74.0%), indicating that these platforms are central to the respondents' social media activity. TikTok also has significant usage (70.4%), followed by YouTube (56.3%). In contrast, X (Twitter) and Facebook have moderate engagement, with 26.7% and 27.8%, respectively, while Snapchat (15.2%) and other platforms (1.4%) are less commonly used. This distribution reflects the varying preferences and usage patterns of different social media platforms among the respondents, with a strong inclination toward platforms facilitating both social networking and direct communication.

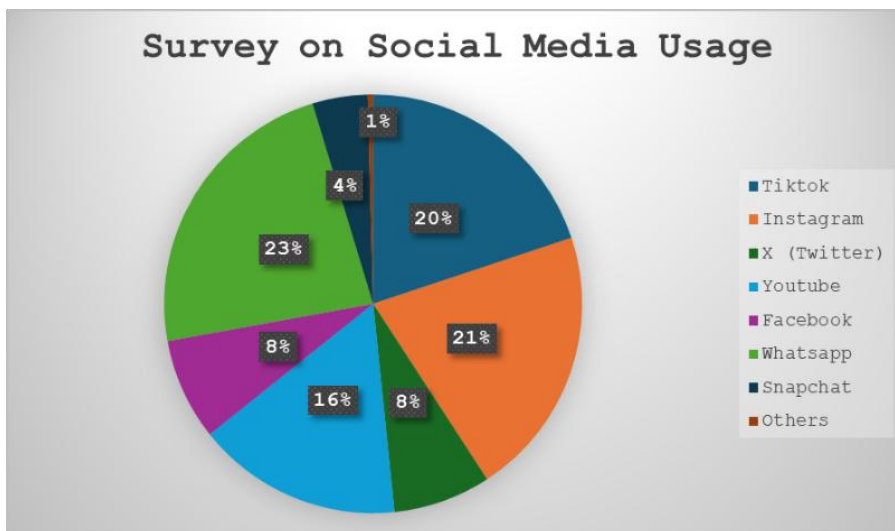


Figure 1 Analyses of the purpose of social media.

3.2. Rates and purposes of social media and online gaming compared with social activities

Figure 2 shows the purpose of students' engagement in social media and the analyses reveal that social media usage is highly prevalent among the respondents, with 41.5% spending 2--4 hours daily on social platforms, 20.6% engaging for 4-6 hours, and 16.6% using social media for more than 6 hour each day. Only a small fraction, 4.3%, spends less than an hour, and a negligible 0.4% report no usage at all. The mean social media usage time is 3.30 hours per day. This high level of engagement suggests that social media plays a central role in the daily lives of students, likely serving as a primary mode of communication, entertainment, and information. However, this extensive usage also raises concerns about its potential negative impacts on academic performance, mental health, and physical well-being due to prolonged screen time.

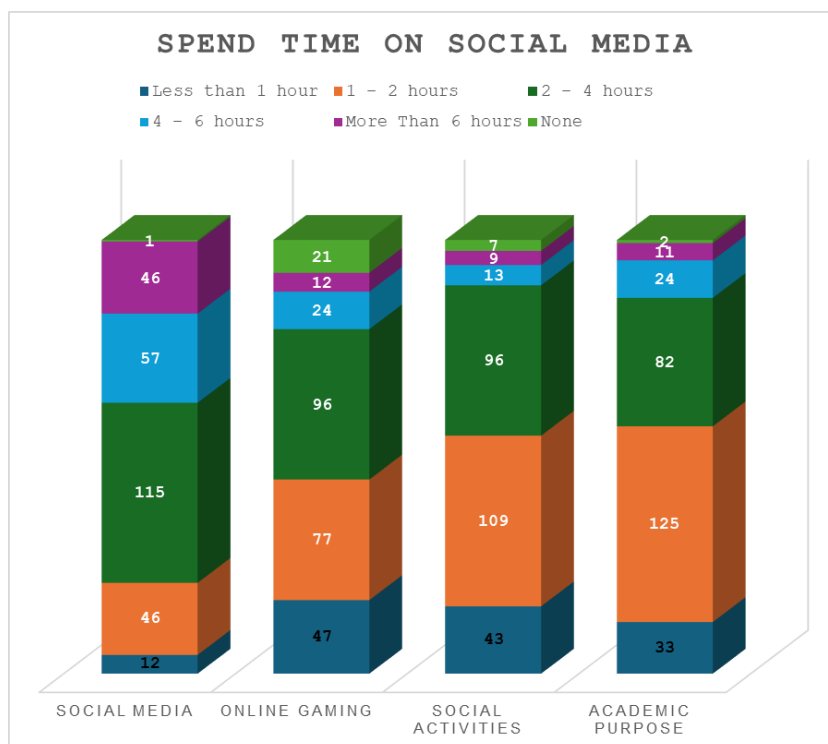


Figure 2 Purpose of students' engagement in social media.



Online gaming is another popular activity, although to a lesser extent than social media. Approximately 34.7% of the respondents played online games for 2--4 hours daily, whereas 27.8% engaged for 1--2 hours. Fewer respondents (8.7%) play for 4--6 hours, and only 4.3% spend more than 6 hours gaming. Notably, 7.6% do not engage in online gaming at all. The mean gaming time is 2.78 hours. These data indicate that while online gaming is a significant leisure activity, it is not as dominant as social media use. The balance between gaming and other activities, such as academics and social interactions, is essential for maintaining a healthy lifestyle.

Social activities are crucial for the mental health and well-being of students. The data show that 39.4% of the respondents spend 1--2 hours on social activities daily, and 34.7% engage in 2--4 hours. A smaller portion, 15.5%, spends less than an hour, and only 7.9% engage for more than 4 hours. The mean time spent on social activities was 2.48 hours. This balanced engagement suggests that students maintain a reasonable amount of social interaction, which is beneficial for their overall well-being. However, these activities do not overshadow academic responsibilities.

Academic engagement is moderate among the respondents. The majority, 45.1%, dedicate 1--2 hours daily to academic purposes, followed by 29.6%, who spend 2--4 hours. Only 11.9% spend less than an hour, whereas 12.7% dedicate more than 4 hours to their studies. The mean time spent on academics is 2.50 hours. These data indicate that academic work is not the primary focus for many students, potentially affecting their academic performance. There is a need to encourage better academic dedication to ensure academic success.

3.3. Quality of social media use, sleep duration, and co-curricular activities

Regarding the quality of social media use, the findings are tabulated in table 4, where most respondents rated their usage as moderate (60.6%). Fewer respondents consider their usage to be bad (22.4%) or good (13.4%), with very few rating it as very bad (3.2%) or very good (0.4%). The mean rating is 2.85. This suggests that while students are aware of their social media habits, there is room for improvement in managing their usage to avoid potential negative impacts on other aspects of their lives (Tess, 2013).

Table 4 Findings on media social usage at Universiti Teknikal Malaysia, Melaka.

Category	Classification	Frequency (N)	Percentage (%)	Mean (μ)
Social Media Use	Very Bad	9	3.2	2.85
	Bad	62	22.4	
	Moderate	168	60.6	
	Good	37	13.4	
	Very Good	1	0.4	
Sleep	Less than 7 hours	179	64.6	1.38
	7 – 9 hours	92	33.2	
	More Than 9 hours	6	2.2	
Cocurricular Activities	Below 2 activities	151	54.5	2.03
	2 – 4 activities	71	25.6	
	5 – 7 activities	18	6.5	
	8 – 10 activities	2	0.7	
	More than 10 activities	4	1.4	
	Not Involving	31	11.2	

Sleep is a critical factor for cognitive function and overall health. The data show that a significant majority (64.6%) of the respondents sleep less than 7 hours per night, which is below the recommended amount for young adults. Approximately 33.2% of the participants slept for 7--9 hours, whereas only 2.2% slept for more than 9 hours. The mean sleep duration was 1.38, indicating insufficient sleep among most respondents. This lack of adequate rest can have serious implications for their academic performance, mental health, and physical well-being. Participation in cocurricular activities is relatively low (Finnerty et al., 2021).

The majority of the respondents (54.5%) were involved in fewer than 2 activities, and 25.6% participated in 2-4 activities. Only 6.5% are involved in 5--7 activities, and a minimum of 2.1% engage in more than 7 activities. Additionally, 11.2% were not involved in any cocurricular activities. The mean level of involvement is 2.03. This low participation rate suggests that students may not be taking full advantage of opportunities to develop soft skills and build social networks outside the classroom (Tess, 2013).

3.4. Impact of online games and social media use on leadership

The analysis of respondents' perceptions of the impact of online games and social media on their leadership skills as in table 5 reveals diverse opinions. A significant portion of the respondents (46.9%) remained neutral about the positive

contribution of online games and social media to their leadership skills. However, a considerable number of students (32.9%) agreed, and 11.9% strongly agreed that engaging in these activities positively contributed to their leadership skills. This suggests that a sizable group of students perceive online games and social media as beneficial for developing leadership abilities, potentially because of the strategic thinking, teamwork, and communication skills often required in such platforms (Foote, 2013). On the other hand, 5.8% disagreed and 2.5% strongly disagreed, indicating that a minority viewed these activities as detrimental or irrelevant to their leadership development.

Table 5 Impact of Online Games and Social Media Use on Leadership.

Category	Classification	Frequency (N)	Percentage (%)	Mean (μ)
Engaging in online games/social media has positively contributed to my leadership skills	Strongly Disagree	7	2.5	3.46
	Disagree	16	5.8	
	Disagree	130	46.9	
	Neutral	91	32.9	
	Agree	33	11.9	
Online games/social media use has had no influence on my leadership skills.	Strongly Disagree	24	8.7	3.00
	Disagree	40	14.4	
	Disagree	144	52.0	
	Neutral	50	18.1	
	Agree	19	6.9	
Impact on Leadership	Strongly Agree			3.25
	Agree			
	Very Low	2	0.7	
	Low	15	5.4	
	Moderate	187	67.5	
	High	58	20.9	
	Very High	15	5.4	

The mean rating of 3.46 suggests a generally positive perception of the impact of online games and social media on leadership skills. When asked whether online games and social media use have had no influence on their leadership skills, the responses are again varied. The largest group, 52.0%, remains neutral, indicating uncertainty or indifference about the lack of influence of these activities. However, 18.1% agree and 6.9% strongly agree that online games and social media have had no effect on their leadership abilities, suggesting that a notable segment believes that these activities neither hinder nor enhance their leadership skills. Conversely, 14.4% disagreed and 8.7% strongly disagreed, implying that they believe these activities do influence their leadership skills in some capacity. The mean rating of 3.00 reflects a neutral stance overall, indicating a balanced view among respondents about the lack of influence.

Regarding the overall perceived impact of online games and social media use on leadership, the majority of respondents (67.5%) rated the impact as moderate. This finding indicates that most students believe that these activities have a balanced effect on their leadership development. Additionally, 20.9% rate the impact as high, and 5.4% as very high, suggesting that a significant portion of students recognize a strong positive influence on their leadership skills from engaging in online games and social media. In contrast, 5.4% rate the impact as low, and only 0.7% as very low, indicating that very few students see these activities as having a minimal or negative impact on their leadership development. The mean rating of 3.25 suggests a generally moderate to high perceived impact on leadership skills.

3.5. Students' attachment to social networks and academic performance

The survey results in table 6 highlight the perceived impact of social networks on students' academic performance. The responses to the statement "My attachment to online social networks negatively affects my academic performance" show varied perceptions among students. A minority of the students (6.1%) strongly disagreed, and 22% disagreed, indicating that they did not perceive a negative impact. However, 46.2% of the students were neutral, 19.1% agreed, and 6.5% strongly agreed, suggesting that many students either experienced or were unsure about the negative impact. The mean response of 2.98 suggests a slight inclination toward agreement.

Regarding the statement "Online social networks often distract me from my studies," a small percentage (4.7%) strongly disagree and 19.1% disagree, whereas a significant portion of the students (40.8%) remain neutral. However, 26% agree, and 9.4% strongly agree, indicating that many students find social networks to be a considerable distraction. The mean score of

3.16 further supports this observation. When asked whether they spend more time on social media than on academic reading, 4.7% of the students strongly disagreed, and 13% disagreed. Notably, 40.4% of the students are neutral, 32.5% agree, and 9.4% strongly agree, highlighting that a substantial number of students feel that they spend more time on social media. The mean score of 3.29 indicates a general tendency toward agreement with this statement.

The perceptions of the impact of social media on grades are mixed. While 11.6% strongly disagree and 24.5% disagree that their grades have not improved since they have used social media extensively, 44% remain neutral. In contrast, 14.8% agree, and 5.1% strongly agree, suggesting that some students feel that their academic performance has not improved. The mean response of 2.77 indicates a slight inclination toward neutrality.

Regarding the impact of social media on thinking ability and writing skills, 9% strongly disagree and 23.8% disagree, whereas 42.6% are neutral. Additionally, 17.7% agree, and 6.9% strongly agree that excessive social media usage has hampered their thinking and writing skills. The mean score of 2.90 reflects a slight tendency toward neutrality.

Finally, when asked if they had missed academic deadlines due to excessive social media use, 19.1% of the students strongly disagreed, and 23.5% disagreed. A moderate 36.1% are neutral, whereas 15.2% agree and 6.1% strongly agree. The mean response of 2.66 indicates a slight tendency toward neutrality.

Table 6 Relationships between students' social media engagement and academic performance.

Category	Classification	Frequency (N)	Percentage (%)	Mean (μ)
My attachment to online social networks negatively affects my academic performance.	Strongly Disagree	17	6.1	2.98
	Disagree	61	22.0	
	Neutral	128	46.2	
	Agree	53	19.1	
	Strongly Agree	18	6.5	
Online social networks often distract me from my studies.	Strongly Disagree	13	4.7	3.16
	Disagree	53	19.1	
	Neutral	113	40.8	
	Agree	72	26.0	
	Strongly Agree	26	9.4	
I spend more time on social media than on academic reading.	Strongly Disagree	13	4.7	3.29
	Disagree	36	13.0	
	Neutral	112	40.4	
	Agree	90	32.5	
	Strongly Agree	26	9.4	
I have not seen any improvement in my grades since I started using social media extensively	Strongly Disagree	32	11.6	2.77
	Disagree	68	24.5	
	Neutral	122	44.0	
	Agree	41	14.8	
	Strongly Agree	14	5.1	
Excessive social media usage has hampered my thinking ability and writing skills.	Strongly Disagree	25	9.0	2.90
	Disagree	66	23.8	
	Neutral	118	42.6	
	Agree	49	17.7	
	Strongly Agree	19	6.9	
I sometime missed academic deadlines (e.g., assignments, exams) due to spending too much time on social media	Strongly Disagree	53	19.1	2.66
	Disagree	65	23.5	
	Neutral	100	36.1	
	Agree	42	15.2	
	Strongly Agree	17	6.1	
Students' attachment to Social Networks and Academic Performance	Very Bad	9	3.2	3.21
	Bad	33	11.9	
	Moderate	146	52.7	
	Good	68	24.5	
	Very Good	21	7.6	

3.6. Correlation analysis

Table 7 shows the correlation between students' social media engagement and academic performance which indicate a complex relationship between students' attachment to social networks and their academic performance. The data show that a significant number of students perceive a negative impact of social networks on their academic performance, with many agreeing that social networks distract them from their studies and that they spend more time on social media than on academic reading. However, a substantial proportion of students remain neutral, suggesting variability in individual experiences and perceptions. The mean responses across the statements generally show a slight tendency toward agreement with the negative impacts of social networks, although neutrality is a prevalent response. This suggests that while there is recognition of potential negative effects, not all students experience these effects uniformly.

Table 7 Correlations between social media usage, the cocurriculum, academic performance and the leadership of students.

		Co-Curricular	Academic Performance	Leadership
Social Media Use	Pearson Correlation	-0.042	0.022	0.002
	Sig. (2-tailed)	0.484	0.710	0.978
Co-Curricular	Pearson Correlation	-	0.009	-0.053
	Sig. (2-tailed)		0.880	0.378
Academic Performance	Pearson Correlation	-	-	0.369**
	Sig. (2-tailed)			0.0001

** . The correlation is significant at the 0.01 level (2-tailed).

Moreover, the perception of the impact on academic performance, thinking ability, and writing skills highlights the potential cognitive and skill-based implications of excessive social media use. The tendency to miss academic deadlines due to social media use further underscores the potential time-management issues associated with high social media engagement. Overall, the results suggest that while social networks can have a negative impact on academic performance for some students, the extent of this impact varies. The high levels of neutrality in the responses indicate that further research is needed to explore the underlying factors contributing to these perceptions and to identify strategies to mitigate the negative effects of social network attachment on academic performance.

The correlation between social media use and participation in cocurricular activities is weakly negative (-0.042), with a significant value ($p = 0.484$) indicating no statistical significance. This suggests that while there might be a slight tendency for higher social media use to correspond with lower participation in cocurricular activities, the relationship is not meaningful. Similarly, the correlation between social media use and academic performance is very weak and positive (0.022), with a high p value (0.710). This finding indicates that the amount of time spent on social media does not significantly impact academic performance. The correlation between social media use and academic performance is very weak and positive, with a Pearson correlation coefficient of 0.022. A high p value (0.710) indicates no statistical significance. This suggests that the amount of time students spend on social media does not significantly affect their academic performance. The weak positive correlation implies that increased social media use is not associated with better or worse academic outcomes in a meaningful way. Despite spending significant time on social media, students are still able to achieve good academic results. This finding consistent with (Lau, 2016) that indicates that students may possess effective time management skills or use social media in a way that does not detract from their studies. The correlation between social media use and leadership is virtually nonexistent (0.002) and statistically insignificant ($p = 0.978$), suggesting that there is no meaningful relationship between these variables.

These findings imply that while social media use and cocurricular activities do not significantly impact academic performance or leadership, academic success is strongly associated with leadership qualities. Universities and educators should focus on fostering academic excellence to develop future leaders. Encouraging better sleep habits, effective time management, and balanced social media use can also support students in achieving their full potential. By understanding these patterns, educational institutions can develop targeted interventions to enhance student development and well-being.

4. Final Considerations

This research provides a comprehensive overview of the interplay between social media use, cocurricular activities, academic performance, and leadership among university students. The findings reveal that high social media usage does not significantly detract from academic performance, indicating that students may effectively balance their digital and academic lives. While beneficial, participation in cocurricular activities does not directly influence academic outcomes or leadership qualities. In contrast, academic performance strongly correlates with leadership potential, underscoring the importance of academic success in developing leadership skills. Educational institutions should focus on promoting academic excellence to nurture future leaders while also supporting students in managing their time effectively to balance social media use, cocurricular activities, and sufficient sleep. Interventions aimed at improving sleep hygiene and encouraging a balanced lifestyle can further increase students' well-being and academic success. By understanding these dynamics, educators can create targeted strategies to support holistic student development and foster a conducive learning environment.

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Ethical Considerations

The study adhered to ethical research guidelines and principles to ensure that participants' rights and anonymity were protected throughout the research process.

Conflict of Interest

The authors declare that they have no conflicts of interest.

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