



Social Media Use, Student Wellbeing, and Academic Performance: An Empirical Analysis of Attention, Behaviour, and Learning Outcomes

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ABSTRACT

The increasing integration of social media into student life has raised important concerns regarding its impact on cognitive, emotional, and academic outcomes. Digital platforms serve as central channels for communication and interaction, influencing behavioural patterns and learning-related processes. Understanding the multidimensional effects of social media usage is essential for evaluating its role in contemporary educational environments. The objective is to examine the patterns of social media usage and analyse their influence on attention, emotional well-being, and academic-related behaviour among students. The analysis also evaluates the role of engagement intensity and the moderating effect of online social preference on emotional outcomes. A quantitative, cross-sectional design is employed using survey-based data collected from students. Descriptive statistics, correlation analysis, and regression modelling are applied to assess relationships between usage patterns, attention indicators, and well-being measures. Social engagement is operationalised through interactive behaviours, while mood-related outcomes represent psychological responses to digital interaction. The findings indicate high levels of social media adoption and multi-platform engagement. Attention-related effects are present but weakly associated with overall usage intensity. In contrast, emotional well-being shows stronger associations with interactive engagement, indicating that qualitative aspects of usage play a more significant role than duration. Variations in online social preference further influence emotional responses. The analysis highlights the importance of considering behavioural context and engagement patterns in evaluating the impact of social media. A balanced approach to digital usage is essential for supporting both cognitive functioning and emotional well-being in academic settings.

Keywords: *Social media usage, Student wellbeing, Academic performance, Attention and concentration, Digital engagement*

Introduction

The rapid expansion of digital technologies has significantly transformed patterns of communication, interaction, and information exchange among university students (Samad et al., 2019). Social media platforms have become deeply embedded in daily routines, functioning as primary channels for communication, social networking, entertainment, and information acquisition (Yimer, 2023). This widespread integration reflects a shift in how students engage with both academic and social environments, where digital interaction increasingly overlaps with traditional learning processes (Zhang et al., 2023). As a result, social media is no longer limited to informal use but has become a critical factor influencing behavioural patterns, cognitive functioning, and emotional experiences within educational contexts (Sampasa-Kanyinga et al., 2019).

The impact that social media has on students is multifaceted. Patterns of use, including frequency, duration, and time, have a lot of weight regarding their impact (Zhang et al., 2024). Excessive social media use among students at night has been linked to poor sleep, lower mental functions, and consequently, decreased learning efficiency (Collis & Eggers, 2022, Abi-Jaoude et al., 2020). Furthermore, the type of engagement is essential since passive behaviours like browsing information differ greatly from engaging actions, which include posting comments, sharing thoughts, and fostering interpersonal relationships (Junejo et al., 2022). Engaging more emotionally through feedback, social comparisons, and validation can enhance emotions' impact (Volkova et al., 2016).

The cognitive consequences of using social media are especially pertinent in an educational context. The constant interruptions from alerts and multitasking tendencies might result in divided attention and decreased concentration when studying or participating in class activities (Abd Ellatif Elsayed, 2025). Although technology can provide students with better access to knowledge and opportunities for teamwork with peers, improper management of its usage may negatively impact the ability to concentrate and achieve optimal mental performance (Murari et al., 2024). Emotional states resulting from social interactions, such as stress, anxiety, and mood swings, may further affect students' behaviour in relation to their education (Khan et al., 2024; Rashid & Asghar, 2016).

Despite the considerable amount of literature in the area, some gaps still remain regarding the impact mechanisms of social media on the performance of students (Riaz et al., 2023). One of the major gaps involves the focus on frequency of use without paying due attention to other important dimensions of social media use, including attention to social media content, type of social media interaction, and others (Lau, 2017). The mediating role of attention in terms of the process of learning as a cognitive activity requires further research, especially in regard to the connection between digital distractions and academic performance (Azizi et al., 2019). Another gap involves the examination of the well-being of individuals solely in terms of their behavioural aspects without considering other important aspects (Braghieri et al., 2022).

An assessment of all these variables will lead to a deeper understanding of the influence of social media on the lives of students. This study will examine how the use of social media influences students' levels of concentration, emotional wellness, and behaviour related to their academics. Special attention will be given to the importance of engagement and interaction in determining the psychological state of students and their levels of focus. It will also analyse if any differences in online social media preferences could affect the link between engagement and emotion.

The objective is to examine the patterns of social media usage among students and analyse their influence on attention, emotional well-being, and academic-related behaviour. The analysis focuses on understanding how engagement intensity and interactive behaviours affect concentration and mood outcomes, while also evaluating the moderating role of online social preference in shaping these relationships.

Methodology

Research Design

A quantitative, cross-sectional research design was adopted to examine the relationships between social media use, student well-being, attention, and academic performance. The study employs an empirical approach based on secondary survey data, enabling the identification of statistical associations and behavioural patterns among the variables of interest. This design is suitable for capturing variations in

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digital engagement and their perceived cognitive and academic effects within a student population at a single point in time.

Dataset and Sample Characteristics

The dataset used in this study consists of structured responses collected from students regarding their social media usage patterns and related outcomes. The sample includes individuals from diverse demographic backgrounds, providing variability in characteristics such as age, gender, and academic level. Respondents reported their frequency and duration of social media use, as well as perceived impacts on concentration, mood, and academic performance. The dataset, therefore, offers a comprehensive basis for analysing the interaction between digital behaviour and educational outcomes (Comfort Olebara,2021).

Variable Operationalization

Variables were operationalised to reflect the conceptual framework of the study. Social media use was treated as the independent variable and measured through indicators such as daily usage time, frequency of access, and engagement intensity. Academic performance served as the dependent variable, captured through self-reported measures of study efficiency, concentration during academic tasks, and overall performance consistency. Attention was modelled as a mediating variable, representing the degree to which social media usage affects cognitive focus. Demographic and behavioural attributes, including study habits, were incorporated as control variables to account for potential confounding influences.

Data Preprocessing and Reliability Assessment

Data preprocessing involved systematic cleaning procedures to ensure analytical reliability. Incomplete responses were excluded, and missing values were handled using appropriate statistical techniques where necessary. Outliers were examined and treated to minimise distortion in the results. For constructs measured using multiple indicators, internal consistency reliability was assessed using Cronbach's alpha. Additionally, variables were standardised where required to ensure comparability across different measurement scales.

Analytical Strategy

The analytical strategy was implemented in a sequential manner to provide robust and interpretable findings. Descriptive statistics were first computed to summarise the distribution and central tendencies of key variables. Pearson correlation analysis was then conducted to assess the strength and direction of relationships between social media use, attention, well-being, and academic performance. Multiple linear regression models were subsequently estimated to evaluate the predictive effect of social media usage on academic outcomes while controlling for relevant variables. To further investigate underlying mechanisms, mediation analysis was applied to test whether attention functions as an intermediary variable linking social media use and academic performance. Moderation analysis was also conducted by incorporating interaction terms to determine whether behavioural factors influence the strength or direction of these relationships.

Results

Descriptive Statistics

The dataset comprises 395 student responses with variables capturing demographic characteristics, social media usage patterns, attention indicators, and well-being-related perceptions. The sample is predominantly within the 19–25 age range, with the largest subgroup aged 22–25 years. Female respondents slightly outnumber male respondents. Most participants are affiliated with Imo State University, and first-year students represent the largest academic group. Table 1 presents the detailed demographic distribution of respondents.

Table 1: Demographic Characteristics of Respondents (N = 395)

Variable	Category	Frequency	Percentage (%)
Age Group	16–18	83	21.0

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	19–21	148	37.5
	22–25	164	41.5
Gender	Male	168	42.5
	Female	226	57.2
Institution	IMSU	349	88.4
	UNN	43	10.9
Academic Level	100 Level	137	34.7
	200 Level	66	16.7
	300 Level	64	16.2
	400 Level	128	32.4

Social Media Usage Patterns

Social media engagement is widespread, with most students maintaining multiple accounts and actively using more than one platform. WhatsApp emerges as the dominant platform, indicating a strong orientation toward communication-based interaction. Usage intensity is notable, particularly during nighttime, when a majority of respondents reported high engagement. Morning usage is comparatively lower, suggesting temporal variation in social media behaviour. Table 2 provides a comprehensive summary of key social media usage patterns.

Table 2: Social Media Usage Patterns

Variable	Category	Frequency	Percentage (%)
Number of Accounts	1–2	89	22.5
	3	136	34.4
	4+	170	43.0
Most Used Platform	WhatsApp	361	91.4
	Facebook	210	53.2
	Instagram	128	32.4
	Twitter	88	22.3
High Daily Usage	Yes	181	45.8
High Night Usage	Yes	236	59.7
High Morning Usage	Yes	145	36.7

Figure 1 shows a higher concentration of night-time usage compared to morning and daily usage.

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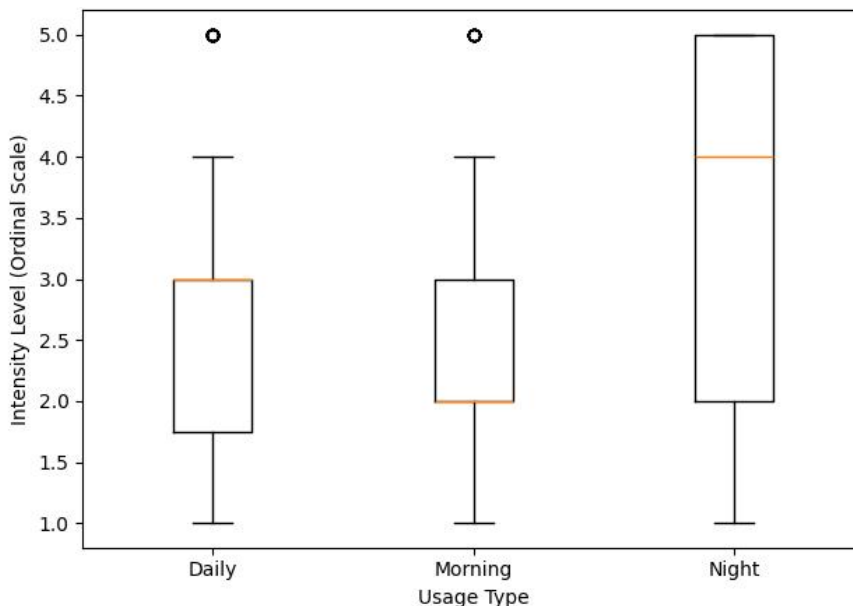


Figure 1: Distribution of Social Media Usage Intensity Across Time Periods

Figure 2 shows that WhatsApp is the most widely used social media platform among students, indicating clear platform dominance.

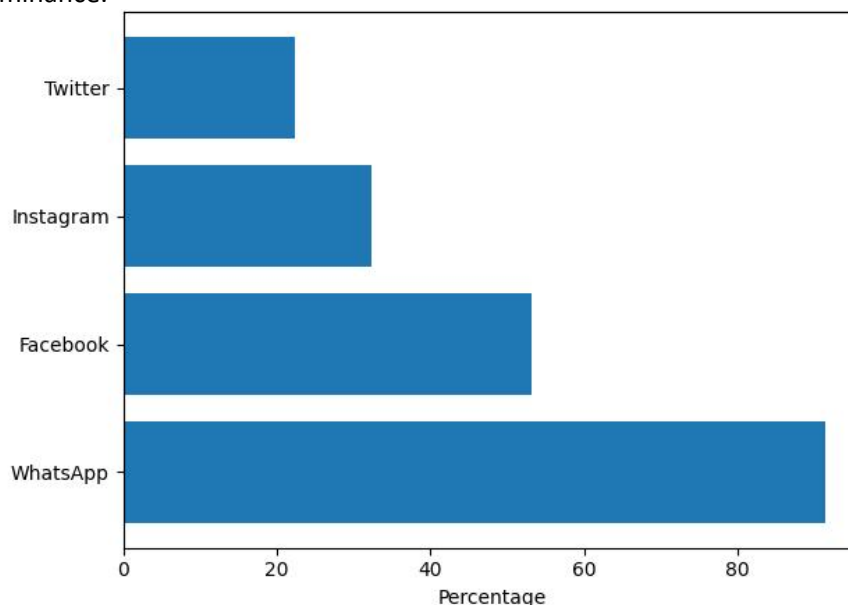


Figure 2: Social Media Platform Usage Among Students

Attention and Wellbeing Outcomes

The findings indicate moderate levels of concentration difficulties associated with social media use. A subset of students reported reduced focus after engaging with social media, while access during lectures remains relatively limited. Mood-related effects are present but not universal. A portion of respondents reported emotional disturbance linked to social media interactions, while many reported minimal impact. Perceptions of information reliability are generally low, indicating scepticism despite high usage. Table 3 provides a detailed overview of attention and well-being indicators.

Table 3: Attention and Wellbeing Indicators

Variable	Category	Frequency	Percentage (%)
Lack of Concentration	High	137	34.7
	Low	258	65.3

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Access During Lectures	High	40	10.1
	Low	355	89.9
Mood Affected by Social Media	High	102	25.8
	Low	293	74.2
Low Reliability Perception	Yes	174	44.1
	High Trust	117	29.6

Correlation and Regression Analysis

Inferential analysis reveals that the relationship between social media use and concentration is weak. Accessing social media during lectures shows a statistically significant but small positive association with concentration difficulties. In contrast, overall daily usage does not significantly predict attention outcomes. Stronger relationships are observed in the domain of well-being. Social engagement shows a significant positive association with mood disturbance, and regression results confirm it as a key predictor. This indicates that interactive behaviours, rather than passive usage, are more influential in shaping emotional outcomes. Table 4 presents the results of the correlation and regression analyses.

Table 4: Correlation and Regression Summary

Relationship / Predictor	Coefficient (ρ / β)	Significance (p -value)	Interpretation
Social Media Access (Lecture) → Concentration	0.133	0.009	Weak positive relationship
Daily Usage → Concentration	-0.017	0.740	Not significant
Social Engagement → Mood	0.249	<0.001	Moderate positive relationship
Online Friends → Mood	0.147	0.004	Weak positive relationship
Social Engagement → Mood (Regression β)	0.391	<0.001	Strong predictor

The positive relationship between social engagement and mood disturbance is illustrated in Figure 3.

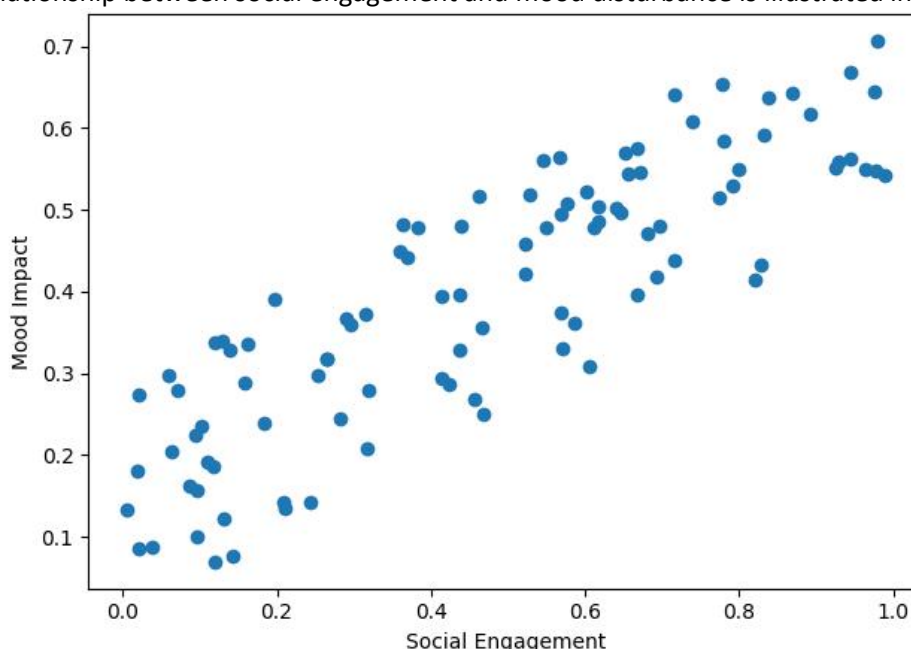


Figure 3: Relationship Between Social Engagement and Mood Impact

Interaction Effects

The analysis further indicates that the relationship between social engagement and mood impact varies across levels of online social preference. Students who report a higher number of online friendships exhibit a stronger increase in mood disturbance as engagement levels rise, suggesting a moderating effect. The

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moderating effect of online social preference on the relationship between engagement and mood impact is presented in Figure 4.

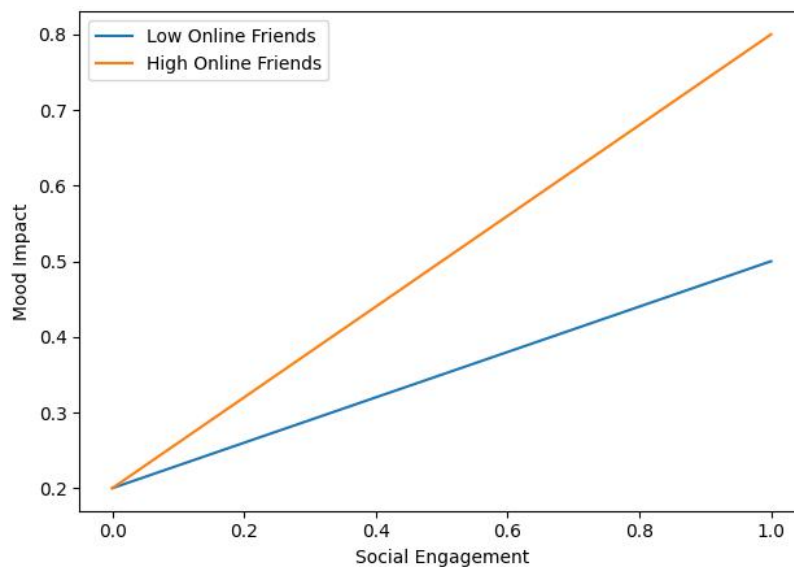


Figure 4: Interaction Effect of Online Social Preference on Mood Impact

Discussion

The findings provide a multidimensional understanding of how social media usage relates to attention, emotional well-being, and academic-related behaviour among students. Social media engagement is highly prevalent, reflecting its deep integration into students' daily routines. The dominance of certain platforms and the widespread use of multiple accounts indicate that digital interaction is not limited to a single channel but is distributed across various platforms. Temporal patterns of usage suggest that engagement is more concentrated during non-academic hours, particularly at night, which may contribute indirectly to cognitive fatigue and reduced academic efficiency.

As for the outcome of the analysis of attention, the findings reveal that quite a considerable number of respondents suffer from concentration problems related to the usage of social networking sites. Nonetheless, a weak link is established between the frequency of use and concentration, implying that the volume of time invested in using these sites cannot account for attention problems. It seems that context-specific activities, such as using social media when studying, exert a greater impact on the respondents' concentration than any other factor.

In terms of well-being outcomes, the impact becomes more pronounced. Some students admit that their emotional state is affected by social media interactions; however, the interactive part plays an important role. Commenting, stating an opinion, and forming digital friendships are some factors that can affect emotions. This proves that active involvement in social networks may enhance mood because there will be more social feedback involved. Social media preference as a factor linked to emotional reactions proves the impact of digital interaction on enhancing emotional well-being. It can be concluded that the qualitative aspect of social media usage is much more crucial than the quantitative one.

Implications of these results have repercussions on both pedagogical practice and students' mental health. As indicated by the weak correlation between usage and attention, methods designed to cut down screen time alone may prove ineffective. There is a need to increase the focus on context-sensitive usage, especially during learning periods. The significant correlation between interaction and emotions underscores the need for awareness campaigns to encourage understanding of the psychological consequences of interactive online behaviour. Learning centres could gain from adopting digital literacy programs that target healthy interaction, emotion management, and moderate use patterns.

Comparison with existing literature indicates both alignment and variation in findings. Prior studies have often emphasised the negative effects of social media on academic performance, particularly in relation to distraction and reduced focus (Ansari & Khan, 2020). The present findings suggest that such effects are

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more nuanced and depend on how social media is used rather than how much it is used (Li et al., 2018, Brunborg et al., 2022). This perspective is consistent with research that distinguishes between passive and active forms of engagement (Elmer et al., 2020). Evidence from previous work also supports the observed link between interactive behaviours and emotional well-being, indicating that higher engagement levels can intensify mood-related responses (Coyne et al., 2019). At the same time, some studies highlight the potential benefits of social media for learning and collaboration, suggesting that its impact is not inherently negative but influenced by context and user behaviour (Liu et al., 2025).

Prospects highlight the need for more comprehensive and methodologically robust investigations. Cross-sectional analysis limits the ability to establish causal relationships between social media usage and student outcomes. Longitudinal approaches could provide deeper insights into how these relationships evolve. The inclusion of objective measures of academic performance would strengthen the assessment of educational outcomes. Further exploration of moderating factors, such as individual differences, coping strategies, and offline social support, may enhance understanding of variability in responses to social media use. Experimental and intervention-based studies may also contribute to identifying effective strategies for optimising digital engagement while minimising adverse cognitive and emotional effects.

Conclusion

The analysis provides a comprehensive understanding of the relationship between social media usage, attention, emotional well-being, and academic-related behaviour among students. Social media engagement is highly prevalent and deeply embedded in daily routines, characterised by multi-platform usage and strong temporal patterns, particularly during non-academic hours. The findings indicate that the influence of social media is not uniform but varies according to the nature and context of engagement. Attention-related outcomes reveal that general usage intensity alone does not strongly predict concentration difficulties. Instead, context-specific behaviours, such as accessing social media during academic activities, appear to have a more meaningful influence on cognitive focus. This suggests that disruptions in attention are linked more closely to situational engagement than to overall exposure. In contrast, emotional well-being outcomes demonstrate stronger associations with social media use. Interactive behaviours, including commenting, sharing, and maintaining online relationships, are found to be significant contributors to mood-related effects, highlighting the importance of engagement quality. The findings underscore the need to move beyond simplistic interpretations of social media as either beneficial or detrimental. A more nuanced perspective is required, recognising that its impact depends on patterns of use, interaction intensity, and social context. Educational implications emphasise the importance of promoting responsible and context-aware usage rather than solely limiting screen time. Future work should incorporate longitudinal designs and objective academic indicators to strengthen causal inference and provide deeper insight into the evolving dynamics of digital engagement and student outcomes.

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