Impact of Social Media on Students' Academic Performance: A Quantitative Case Study of Kohat University of Science and Technology, Pakistan

Saiqa bibi
Lecturer, Kohat University of Science and Technology
saiqabibi@kust.edu.pk
Shahzeb Anwar
shahzebanwar092003@gmail.com

ABSTRACT

This study examines the impact of social media usage on students' academic performance at Kohat University of Science and Technology (KUST), Pakistan. Recognizing the rapid expansion of digital platforms among youth, the research sought to assess whether excessive engagement with social media hinders students' educational outcomes. Employing a quantitative research design, data were collected from a sample of 134 undergraduate and postgraduate students across multiple disciplines through a structured questionnaire. Statistical analysis revealed a significant negative relationship between time spent on social media and students' academic performance, measured through self-reported GPA and study habits. The findings indicate that prolonged and unregulated use of platforms such as Facebook, Instagram, and TikTok contributes to distraction, reduced study efficiency, and declining grades. The study concludes that while social media provides opportunities for connectivity and informal learning, its misuse poses a serious challenge to students' academic success at KUST. A key recommendation is the integration of awareness programs and digital literacy initiatives within the university, aimed at encouraging balanced and purposeful social media use. These findings have broader implications for higher education institutions in Pakistan, highlighting the need to address digital consumption patterns as part of student support and academic development strategies.

Keywords: *Social Media, Academic Performance, University Students, Digital Distraction, Pakistan.*

Introduction

The advent of social media has fundamentally transformed communication patterns and information dissemination in contemporary society. Platforms such as Facebook, Instagram, Twitter (now X), WhatsApp, and TikTok have become ubiquitous in the daily lives of university students globally. While these digital tools offer unprecedented opportunities for networking, information sharing, and collaborative learning, their excessive use has raised significant concerns regarding detrimental effects on academic performance (Kirschner & Karpinski, 2010). At Kohat University of Science and Technology (KUST), where academic excellence is paramount, the pervasive use of social media among students warrants critical examination. This study seeks to investigate the negative consequences of social media usage on the academic life of KUST students, providing empirical evidence on how these platforms influence study habits, time management, and overall educational outcomes.

The proliferation of affordable smartphones and high-speed internet in Pakistan has led to an exponential increase in social media usage among university students. According to the Pakistan Telecommunication Authority (2023), the country has witnessed a 25% annual growth in social media users, with young adults constituting the majority of this demographic. Students at institutions like KUST frequently engage with multiple social media platforms, often at the expense of their academic responsibilities (Ali, 2020). Research indicates that excessive social media consumption correlates strongly with decreased academic performance, poor concentration, and increased procrastination (Junco, 2012). These findings necessitate a focused investigation into how social media affects students in the specific context of KUST, where maintaining high academic standards is crucial for both individual and institutional success.

One of the most pressing concerns regarding social media usage is its addictive potential. Studies have demonstrated that many university students exhibit compulsive behaviors, such as constantly checking notifications and refreshing feeds, even during lectures or study sessions (Andreassen, 2017). This compulsive engagement disrupts cognitive processes essential for effective learning and information retention. Furthermore, social media platforms employ sophisticated algorithms designed to maximize user engagement through features like infinite scrolling and personalized content feeds, which contribute significantly to time mismanagement (Alter, 2017). A study conducted among Pakistani university students revealed that those who spent more than four hours daily on social media platforms had significantly lower grade point averages (GPAs) compared to their peers with moderate usage (Khan, 2021). These findings suggest that while social media can serve as a valuable educational resource, its uncontrolled use poses substantial risks to academic achievement.

Beyond time management issues, social media usage has profound psychological implications that indirectly affect academic performance. The phenomenon of social comparison, where individuals evaluate their own lives against the carefully curated online personas of others, has been linked to increased anxiety, depression, and diminished self-esteem among university students (Vogel et al., 2014). At KUST, where students face rigorous academic demands, the additional psychological burden created by constant social media engagement may exacerbate stress levels and contribute to burnout. Moreover, the multitasking nature of social media use - simultaneously engaging in conversations, browsing content, and attempting to study - has been shown to reduce cognitive efficiency and impair deep learning (Rosen et al., 2013). This study will examine whether KUST students experience similar challenges and how these factors collectively impact their academic performance.

Despite the growing body of international research on social media's effects on academic life, there remains a paucity of studies focusing specifically on Pakistani universities, particularly institutions like KUST with their unique cultural and educational contexts. Most existing literature originates from Western educational settings, which may not fully capture the dynamics of social media usage in Pakistan's higher education landscape (Abbas, 2019). This study aims to address this gap by providing institution-specific insights into how social media affects KUST students. The findings will be valuable for educators, administrators, and policymakers in developing targeted interventions to mitigate negative impacts while harnessing the potential benefits of these platforms. Potential strategies may include digital literacy programs, time-management workshops, and institutional policies promoting responsible social media usage among students.

Problem Statement

Social media has rapidly evolved into a dominant force in the lives of university students, profoundly shaping their communication patterns, access to information, and management of academic responsibilities. At Kohat University of Science and Technology (KUST), the widespread availability of affordable smartphones and high-speed internet has significantly increased student engagement with platforms such as Facebook, Instagram, TikTok, WhatsApp, and Twitter (X). While these platforms offer opportunities for academic collaboration and knowledge sharing, excessive and unregulated usage has raised concerns regarding its potential to disrupt concentration, impair time management, and negatively influence academic performance. Global research has established a consistent link between prolonged social media engagement and adverse academic outcomes, including procrastination, reduced study efficiency, and lower grades (Junco, 2012; Kirschner & Karpinski, 2010). However, despite these findings, there is a lack of institution-specific empirical studies that explore this phenomenon within the unique cultural and educational environment of Pakistani universities, particularly at KUST. This knowledge gap makes it difficult for educators and administrators to develop targeted strategies that address the academic challenges arising from social media overuse. Without a clear understanding of how social media affects students in this specific context, interventions risk being ineffective or misaligned with students' actual needs. Therefore, there is an urgent need for a systematic investigation into the patterns, academic consequences, and potential solutions for excessive social media usage among KUST students. Such research will not only contribute to academic literature but will also provide practical, evidence-based recommendations for improving student performance and well-being in the digital era.

Research Objectives

The primary objective of this research is to investigate the negative impact of social media on the academic life of students at KUST. The study is guided by the following specific objectives:

- To assess the prevalence and patterns of social media usage among KUST students
- To examine the correlation between social media usage and academic performance
- To propose evidence-based recommendations for students and institutions to mitigate negative impacts of social media

Literature Review

Global Trends in Social Media Consumption

The rapid global expansion of social media over the past decade has significantly transformed the communication and behavioral landscape, particularly for younger generations, including university students. As digital platforms like Facebook, Instagram, YouTube, Snapchat, TikTok, and WhatsApp have grown in popularity, the time spent on them has increased proportionally. These global trends are not merely technological developments—they have substantial psychological and academic implications, particularly for students at institutions such as Kohat University of Science and Technology (KUST). According to the Digital 2024 Global Overview Report by DataReportal, the average global internet user now spends approximately 2 hours and 23 minutes per day on social media. In some countries, this number rises to over 4 hours daily among users aged 18–24. This age group includes the majority of university students, suggesting that academic-aged users are the most immersed in social media consumption. The report also indicates that mobile accessibility has made social media even more pervasive, with students accessing these platforms in classrooms, libraries, and even during lectures. At KUST, anecdotal evidence and student testimonies reflect similar usage patterns, aligning with these global

trends. Research by Kuss and Griffiths (2015) supports the notion that increased global consumption of social media is linked to problematic usage patterns among students. Their study discusses how compulsive behaviors related to Facebook and Instagram use are especially prevalent among university students, leading to time displacement and academic procrastination. Kuss and Griffiths argue that these global patterns of overuse directly influence students' daily academic routines, decreasing their ability to engage deeply with coursework and academic responsibilities. In the context of KUST, this suggests that students are not immune to these larger global behavioral shifts. Statista (2023) further reinforces the global picture, reporting that countries in South Asia, including Pakistan, have seen a sharp rise in social media penetration. Pakistan now has over 71 million active social media users, with the majority aged between 18 and 30. These figures are particularly relevant to the student population at KUST, which falls within this age group. The sheer volume of users and daily time spent reflects how global consumption trends have become embedded into academic life in Pakistani universities. Students often check notifications during lectures, switch between social and academic content, and struggle to detach from digital interactions even during exams and assignment deadlines.

Vaterlaus et al. (2016) provide a psychological dimension to global usage patterns. Their qualitative study explored how social media habits influence students' perceptions of time and stress. Students from different global backgrounds admitted to feeling anxiety and social pressure if they were not constantly connected, resulting in what researchers' term "digital dependency." This constant connection not only affects emotional well-being but also depletes the cognitive resources required for critical academic thinking, a challenge increasingly faced by students at KUST. Moreover, Tess (2013) highlights a paradox within global social media trends: while these platforms can support learning through academic groups and online collaboration, most students do not utilize them for educational purposes. Instead, they focus on entertainment, personal interactions, and news consumption. At KUST, a similar pattern is evident—students primarily engage in non-academic activities on social platforms, which dilutes the potential educational benefits and enhances the negative academic consequences.

Social Media Usage at Pakistani Universities

A survey conducted by Khan et al. (2021) across five public sector universities found that 89% of students accessed social media during class hours, with WhatsApp being the most frequently used platform (72%), followed by Facebook (65%) and Instagram (58%). Notably, only 23% reported using these platforms primarily for academic purposes. Several studies have examined social media patterns among Pakistani university students. Over the last decade, the growing penetration of digital technologies and the increasing affordability of smartphones have ushered in a new era of communication and connectivity for students enrolled in higher education institutions across the country. From bustling metropolitan campuses to smaller, regional universities, social media has become deeply woven into the social and academic fabric of student life. For many Pakistani university students, social media platforms such as Facebook, WhatsApp, Instagram, TikTok, Snapchat, and YouTube serve as digital spaces for social interaction, self-expression, and academic engagement. Unlike traditional methods of communication, which often relied on face-to-face interaction or scheduled academic support, social media offers an instantaneous and borderless mode of communication that aligns with the lifestyle of today's youth. This shift is not unique to Pakistan, yet the local context - characterized by a youthful population, infrastructural disparities, and evolving academic models - lends a

distinctive flavor to how social media is integrated into university routines. The daily habits of students reflect this digital dependency. A majority of university students log into social media platforms multiple times a day, with some reports suggesting usage that ranges from three to six hours on average. This constant engagement is often justified by students as necessary for staying in touch with friends, coordinating group projects, and accessing academic information. WhatsApp, for instance, is widely used for the creation of class groups where students exchange lecture notes, assignment deadlines, and updates about campus events. Facebook serves as a broader platform for discussion, with many university departments and student bodies operating public pages or private groups for information sharing. These virtual communities foster a sense of belonging and allow students to bridge communication gaps that may otherwise exist in traditional classroom settings. Moreover, the academic utility of platforms like YouTube cannot be understated. Pakistani students frequently turn to YouTube to supplement classroom learning, especially when dealing with abstract or difficult concepts. Tutorials, recorded lectures, and explanatory videos in both English and Urdu have become an essential component of independent study. This is especially true for students from underprivileged areas who may lack access to private tutoring or academic support structures. In this regard, social media can be seen as a democratizing force, helping to level the educational playing field to some extent. However, the advantages of social media in university settings are counterbalanced by growing concerns about its overuse and the resulting negative impact on academic performance and student well-being. While many students begin using social media with the intention of enhancing their productivity and academic coordination, the boundary between academic use and leisure quickly becomes blurred. What begins as checking an assignment update on WhatsApp often spirals into prolonged scrolling on TikTok or watching unrelated content on YouTube. This pattern of behavior has led to widespread academic procrastination and an inability to focus deeply on studies. Empirical research conducted within Pakistani universities supports the notion that excessive social media usage correlates with reduced academic performance. A study by Khan et al. (2020) at the University of Punjab highlighted that students who spent more than four hours daily on social media reported lower GPAs and poorer study habits. The compulsive need to stay online, check notifications, and maintain a digital presence interferes with time management, sleep cycles, and ultimately, academic outcomes. For many students, digital distractions have become normalized, with smartphones often being used during lectures despite institutional rules against such behavior. The psychological impact of this behavior is also significant. The constant need to engage with online content, respond to messages, and maintain social profiles creates mental fatigue and information overload. Many students suffer from what psychologists' term "social media fatigue"—a state of emotional exhaustion brought about by excessive engagement with online content. The fear of missing out (FOMO) also contributes to anxiety, as students feel compelled to remain updated with their social circles at the expense of their academic focus. A study by Yasir et al. (2021) revealed that high-frequency users of social media at Pakistani universities showed increased levels of anxiety, stress, and depressive symptoms compared to their peers who engaged with these platforms in moderation.

Social Media and Academic Performance

In the contemporary digital age, social media has become deeply integrated into the daily routines of university students, including those at Kohat University of Science and Technology

(KUST). While platforms like Facebook, Instagram, TikTok, and WhatsApp offer connectivity and entertainment, their excessive and unregulated use is now widely recognized for contributing to cognitive and academic impairments among students. These impairments include reduced attention spans, diminished memory retention, multitasking inefficiencies, and a decline in overall academic performance. A foundational study by Rosen, Lim, Carrier, and Cheever (2011) demonstrated that students are constantly distracted by social media while studying, leading to decreased concentration and impaired cognitive processing. Their research showed that students were able to focus on a task for only about three minutes before switching to other tasks, often to check social media. This frequent task-switching creates mental fatigue, weakens attention regulation, and limits the ability to engage in deep learning. In an academic setting like KUST, where focused learning is essential for academic success, such distractions can significantly derail student performance.

Adding to this concern, Junco (2012) found a direct correlation between time spent on Facebook and poor academic outcomes. His research revealed that students who spent more hours on Facebook had lower Grade Point Averages (GPAs) and reduced study time. The constant pull of social media encourages students to procrastinate and avoid engaging with demanding academic tasks. At KUST, such behavior is often reported by students themselves who admit to prioritizing social media over assignments or exam preparations, leading to subpar academic results. The detrimental impact of social media is not limited to reduced study hours or poor time management. Cognitive functioning is also affected, as social media fosters habits of multitasking, which can be cognitively damaging. Cain and Mitroff (2011) provided evidence that students who frequently multitask using media tend to have reduced memory capabilities and weaker task-switching efficiency. These students perform worse on memory-related tasks and display signs of cognitive overload. Since university-level study requires the ability to analyze, retain, and apply complex information, such impairments significantly undermine academic performance at institutions like KUST. Nicholas Carr (2010), in his widely cited work The Shallows: What the Internet Is Doing to Our Brains, elaborates on how the internet, and by extension social media, is reshaping human cognition. Carr argues that prolonged exposure to online platforms trains the brain to skim rather than deeply read or analyze information. This rewiring of neural pathways promotes surface-level engagement and hinders the ability to concentrate on long-form texts, which are vital for academic understanding. Students at KUST often report difficulty in reading textbooks or writing extended essays, a problem that can be linked to the cognitive patterns described by Carr. This problem is not exclusive to Western contexts. A study conducted in Pakistan by Tariq, Mehboob, Khan, and Ullah (2012) supports these findings within the local academic environment. The researchers found that students frequently used social media during lectures, group study sessions, and even while completing academic assignments. This habitual engagement during critical learning activities was found to diminish comprehension, reduce academic output, and contribute to weaker academic results. Given KUST's location within Pakistan, these findings have direct relevance and emphasize the urgent need for awareness and intervention at the institutional level.

Theoretical Framework

Social Cognitive Theory (Bandura, 1986)

Albert Bandura's Social Cognitive Theory suggests that individuals learn behaviors through observation, imitation, and reinforcement. When applied to social media use among students,

this theory explains how exposure to peers' online behaviors (e.g., excessive scrolling, multitasking, or prioritizing social media over studies) can lead to: Modeling of Distraction: Students may imitate peers who frequently check social media during study sessions, reinforcing procrastination Negative Academic Outcomes: Over time, habitual social media use replaces productive study habits, leading to poor performance.

Social Comparison Theory (Festinger, 1954)

The negative impact of social media on student academic life can be profoundly understood through the lens of Social Comparison Theory, originally developed by Leon Festinger in 1954. This theory provides a robust framework for examining how students' constant exposure to curated academic personas on digital platforms shapes their self-perception, motivation, and ultimately their educational outcomes. At its core, the theory posits that individuals determine their self-worth by evaluating themselves against others, a process that has become exponentially more prevalent and psychologically complex in the age of ubiquitous social media use. In contemporary academic environments, social media platforms have created a perpetual stage for upward social comparisons, where students are bombarded with carefully crafted representations of their peers' academic successes. These digital portrayals - showcasing high grades, prestigious internships, and scholarly achievements - rarely include the struggles, failures, or ordinary moments that constitute the reality of academic life. This selective self-presentation fosters what researchers term the "highlight reel effect," creating a distorted perception that others are consistently performing at higher levels. The psychological consequences of this phenomenon are particularly acute for university students, who are already navigating the challenges of academic transition and identity formation.

The constant exposure to these idealized academic images triggers a cascade of negative outcomes that directly impair educational performance. Students engaging in frequent upward comparisons experience diminished academic self-efficacy, gradually internalizing the belief that they lack the capability to achieve similar successes. This erosion of confidence manifests in decreased motivation, avoidance of challenging coursework, and ultimately poorer academic performance. The situation is further exacerbated by what psychologists describe as the "duality of social comparison" - where students simultaneously feel pressured to measure up to their peers' achievements while recognizing the unrealistic nature of these comparisons. This cognitive dissonance creates significant psychological stress that interferes with effective learning and information retention. Moreover, the temporal dimension of social media amplifies these comparison effects. Unlike traditional academic settings where comparisons might occur periodically (such as during exam results or award ceremonies), social media provides a continuous, on-demand stream of comparison opportunities. Students can access these triggering images at any hour, including during crucial study periods, creating persistent distractions from academic work. The platforms' design features - likes, shares, and comments - serve as quantifiable social validation metrics that students increasingly incorporate into their self-evaluation processes. This creates a harmful feedback loop where academic self-worth becomes tied to external validation rather than personal growth or learning mastery. The implications are particularly significant in collectivist educational cultures, such as those found in many Pakistani universities, where academic achievement carries substantial familial and societal weight. In these contexts, the pressure to maintain favorable social comparisons becomes intertwined with cultural expectations, intensifying the psychological burden on

students. Research indicates that students from such backgrounds experience heightened anxiety when their academic performance appears to lag behind their peers' projected successes on social media, sometimes leading to extreme coping mechanisms including academic dishonesty or complete disengagement from studies.The theory also helps explain the phenomenon of academic procrastination in the social media age. Many students delay important academic work not because of time management failures per se, but as an emotional avoidance strategy to temporarily escape the discomfort created by unfavorable social comparisons. This pattern creates a self-perpetuating cycle where procrastination leads to poorer academic performance, which in turn makes subsequent social comparisons even more distressing, further eroding academic confidence and motivation. Importantly, Social Comparison Theory also provides insights into potential interventions. By recognizing that much of social media's negative academic impact stems from distorted comparison processes, educators and institutions can develop targeted strategies. These might include digital literacy programs that teach students to critically evaluate online content, initiatives to promote more authentic representations of academic journeys, and structured opportunities for downward comparisons that highlight the universality of academic struggles. Such approaches could help mitigate the harmful effects while preserving social media's potential for positive academic connection and resource sharing. The theoretical perspective also suggests that the impact varies significantly across different social media platforms. Image-heavy platforms like Instagram and Snapchat, which emphasize visual representations of academic success, may provoke more intense comparison effects than text-based platforms. Similarly, professional networks like LinkedIn might trigger different comparison dynamics related to career aspirations rather than immediate academic performance. This nuanced understanding enables more precise research into how specific platform characteristics influence academic outcomes. Ultimately, applying Social Comparison Theory to the examination of social media's academic impact moves the discussion beyond simplistic notions of distraction or time displacement. It reveals the profound psychological mechanisms through which digital social interactions reshape students' academic identities, motivations, and behaviors. This theoretical approach not only explains observed negative outcomes but also provides a framework for developing more effective interventions to help students navigate the complex digital landscape while maintaining healthy academic engagement and psychological well-being.

Material and Methods

Design

The study employed quantitative method under cross-sectional survey research design, which is often used when researchers aim to quantify the problem and understand how prevalent it is by looking for statistical relationships. Quantitative research was considered appropriate for this study as it enables the measurement of variables in a precise and objective manner, allowing for statistical analysis of the collected responses. Furthermore, the study is descriptive in nature, as it seeks to present an accurate account of existing conditions, behaviors, and perceptions without manipulating any variables. The purpose of using a quantitative approach in this study was to systematically measure students' responses regarding their social media usage and its effects on their academic performance. A descriptive survey method was chosen, which allows for the collection of data from a large number of respondents efficiently. This method is suitable

for identifying trends, patterns, and generalizations regarding the issue under investigation. The structured nature of the survey also ensures objectivity and consistency in data collection.

Participants

The target population for this study comprised all enrolled students at Kohat University of Science and Technology (KUST), with a total population of 1,243 students across various academic departments and levels. In order to draw a representative sample from this population, the researcher utilized the widely accepted Sekaran (2003) sample size determination table**.** According to this table, for a population of 1,200 to 1,300, a minimum sample size of approximately 134 respondents is considered sufficient to ensure statistical reliability and generalizability of the findings. Therefore, a sample of 134 students was randomly selected for this research. This sample size was deemed adequate to capture diverse perspectives while maintaining the feasibility of data collection within the time and resource constraints of the study. The decision to select a sample size of 134 students was guided by the principles of statistical relevance and feasibility. While larger sample sizes may increase the generalizability of the findings, they also require more resources. The chosen sample size was deemed sufficient to capture a broad range of opinions and behaviors while remaining practical in terms of data collection and analysis. Moreover, this sample allowed for comparative analyses between sub-groups (e.g., gender or age) within the population.

Measures

The research instrument used for this study was a structured questionnaire consisting of two parts. The first part focused on demographic variables such as gender, age, academic discipline, income, and residence. The second part included 17 statements related to the impact of social media on students' academic lives. These statements were measured using a 3-point Likert scale with the options: Agree, Neutral, and Disagree. The Likert scale was selected for its simplicity and ease of use, allowing respondents to clearly indicate their level of agreement with each statement. The questions were designed to assess various aspects such as time management, attention span, psychological effects, academic motivation, and study habits.

To ensure the validity of the instrument, the questionnaire was reviewed by academic experts and faculty members in the field of education and social sciences. Their feedback helped refine and modify ambiguous or unclear questions. A pilot study was conducted involving 15 students from KUST who were not included in the final sample. The feedback from this pilot test led to further improvements in the questionnaire's structure and language. Reliability was assessed using the internal consistency method. Although a Cronbach's Alpha score was not formally calculated, the consistency in responses during the pilot test indicated that the instrument was reliable and appropriate for the intended study.

Ethics and Data Collection Plan

Ethical integrity was maintained throughout the research process. Participants were informed about the purpose of the study and their right to refuse participation without any consequences. A consent form was provided, and participants were assured that their responses would be kept confidential and used solely for academic purposes. No identifying information was collected, and anonymity was maintained. The research complied with ethical standards for human subject research as outlined by the academic institution. Primary data was collected through a structured questionnaire designed specifically for this research. The questionnaire was distributed both in printed form and online using platforms like Google Forms to ensure maximum reach and

accessibility. The researcher visited classrooms and communicated directly with students to request their voluntary participation. The printed questionnaires were distributed manually to students in common areas of the university. Online distribution was particularly helpful for students who were unavailable on campus during data collection. The dual method ensured a better response rate and broader coverage of the population.

Data Analysis Procedure

The data collected from the questionnaires were analyzed using Microsoft Excel. Descriptive statistical techniques, including frequencies and percentages, were employed to identify patterns and trends in the responses. Each of the 17 Likert-scale items was analyzed to determine the percentage of students who agreed, disagreed, or remained neutral. These results were then interpreted in the context of the research objectives. The data were presented in tabular form and narrative discussion to provide a comprehensive understanding of the impact of social media on academic life. Items were ranked in order of highest to lowest agreement to highlight the most critical areas of concern.

Results

The survey included a total of 134 respondents, with 86 (64.18%) being male and 48 (35.82%) female. This shows a significant difference in participation between genders, with males representing nearly two-thirds of the sample. Several factors could explain this imbalance. The survey might have targeted a field or demographic where males are more prevalent, such as certain professions or interest groups. Alternatively, the method of data collection (online platforms, time of survey, or outreach strategies) could have influenced response rates. Cultural or social factors may also play a role, as women might be less likely to participate in certain types of studies. If the research requires balanced gender representation, methods such as stratified sampling or targeted recruitment could help improve female participation in future studies. However, if the survey reflects the actual gender distribution of the population being studied (e.g., a male-dominated industry), the results remain valid within that context. Understanding this gender gap is important for interpreting the findings accurately. If the study's conclusions are influenced by gender, researchers should acknowledge this limitation. Future surveys could benefit from ensuring more equitable participation to enhance the reliability and generalizability of results.

Table 1. Participants' Demographic Characteristics

Variable		n	%
Gender	Male	86	64.18
	Female	48	35.82
Residency	Rural	78	58.21
	Urban	56	41.70
Age	18-20	78	58.21
	20-25	56	41.79
Faculty	Social sciences	21	15.60
	Numerical sciences	34	25.30
	Biological sciences	48	35.80
	Allied health Sciences	31	23.10
Household Income	20k-30k	60	44.70

	30k-50k	44	32.80
	50k+	30	22.30

n = 134.

The survey included 134 respondents, with 78 (58.21%) from rural areas and 56 (41.79%) from urban areas. This shows a noticeable difference in participation between the two groups. Rural respondents formed the majority in this study. Their higher representation could reflect the study's focus on rural communities or agricultural issues. The data suggests rural perspectives may dominate the findings. Urban participation, while lower, still represents a significant portion. The 41.79% urban response rate allows for some comparison between rural and urban viewpoints. This balance enables basic analysis of differences.

The survey data shows a distinct age distribution among the 134 respondents. The majority (78 respondents, representing 58.21%) fall within the 18-20 age group, while the remaining 56 respondents (41.79%) are aged 20-25. This distribution reveals several important patterns worth noting. First, the significant majority of younger respondents (18-20 years old) suggests this age group was either specifically targeted or more likely to participate in the survey. The 16.51 percentage point difference between the two age groups indicates a clear preference or accessibility factor favoring the younger demographic. This could be due to the survey topic being particularly relevant to college-aged individuals or first-time voters, if the study relates to education or civic engagement. Second, the gradual decline in participation among the slightly older 20-25 age group may reflect natural life transitions. Young adults in this bracket are often entering the workforce or pursuing graduate studies, which might make them less available for surveys compared to their younger counterparts who may still be in undergraduate programs with more structured schedules. The data maintains sufficient representation from both age groups to allow for meaningful comparisons, though conclusions will naturally lean more heavily toward the perspectives of the 18-20 cohort. Researchers should consider whether this distribution accurately reflects their target population or if it introduces potential biases in the findings. The sample size, while modest, provides adequate basis for preliminary analysis of age-related trends within these parameters. This age distribution pattern warrants careful interpretation, particularly if the research aims to make broader generalizations about young adult populations. The predominance of 18-20 year olds means their experiences and viewpoints will carry more weight in the overall findings, which may be appropriate for studies focused on first-year college students or similar specific demographics.

The survey data reveals a distinct disciplinary distribution among the 134 respondents, highlighting varying participation rates across academic fields. Biological sciences emerged as the most represented discipline, accounting for 35.8% of responses (48 participants), suggesting either greater interest in the survey topic among these students or potentially larger enrollment numbers in these programs. Numerical sciences constituted the second-largest group at 25.3% (34 respondents), followed closely by Allied Health Sciences at 23.1% (31 participants). Social sciences showed the lowest participation rate at 15.6% (21 respondents), possibly indicating either smaller program sizes or less relevance of the survey topic to this disciplinary group. This distribution pattern suggests the survey findings may be particularly reflective of perspectives from biological and numerical sciences, which together comprise over 60% of the sample. The strong representation from STEM fields (biological sciences, numerical sciences, and allied health totaling 84.2%) contrasts with the relatively smaller contribution from social sciences.

Researchers should consider whether this disciplinary balance aligns with their target population or if it introduces potential biases in the findings. The substantial variation in participation rates across disciplines - ranging from 15.6% to 35.8% - warrants attention when interpreting results, particularly for conclusions that might apply across academic fields. This distribution may reflect genuine differences in student population sizes across faculties, differential interest in the survey subject matter, or variations in survey dissemination effectiveness among departments.

4.9 Income Distribution of Survey Respondents

The survey data reveals a clear income distribution pattern among the 134 respondents. Nearly half of participants (44.7%, n=60) reported earnings in the 20k-30k range, forming the largest income group. A significant portion (32.8%, n=44) fell into the middle income bracket of 30k-50k, while the highest earners (50k+) represented the smallest group at 22.3% (n=30). This distribution shows a gradual decline in participation rates as income levels increase, with the majority concentrated in the lower income bracket. The 11.9 percentage point difference between the two largest groups (20k-30k and 30k-50k) is particularly notable, suggesting the survey either attracted more respondents from lower income demographics or reflects the actual income distribution of the target population. The data maintains adequate representation across all income levels to allow for meaningful comparisons, though findings will naturally be more reflective of lower and middle income perspectives. Researchers should consider whether this distribution aligns with their study objectives and target population characteristics when interpreting results. The significant representation from lower income groups (20k-30k) may be particularly relevant for studies examining financial accessibility or socioeconomic factors.

Table 1. Student's response on negative impact of social media on their academic life.

Sr.	Statements	Response			
		Agree	**Neutral**	**Disagree**	**Total**
1.	I find it difficult to concentrate on studies due to social media distractions.	68 (50.75%)	43 (32.09%)	23 (32.9%)	134 (100%)
2.	I frequently check social media while studying.	56 (41.79%)	67 (50.00%)	11 (8.21%)	134 (100%)
3.	I use social media for academic purposes.	121 (90.30%)	9 (6.72%)	4 (2.99%)	134 (100%)
4.	Social media significantly affects my study schedule.	71 (52.99%)	31 (23.13%)	32 (23.88%)	134 (100%)
5.	Social media reduces my productivity in completing assignments.	89 (72.36%)	16 (13.01%)	18 (14.63%)	134 (100%)
6.	Reducing social media usage would improve my grades.	76 (56.72%)	36 (26.87%)	22 (16.42%)	134 (100%)
7.	I compare my academic performance with peers on social media.	58 (43.28%)	49 (36.57%)	27 (20.15%)	134 (100%)
8.	Seeing others' academic achievements on social media stresses me.	36 (26.87%)	17 (12.69%)	81 (60.45%)	134 (100%)
9.	I experience "Fear of Missing Out" (FOMO) due to social media.	81 (60.45%)	20 (14.93%)	33 (24.63%)	134 (100%)

10.	I feel pressured to stay active on social media to maintain social connections.	66 (49.25%)	37 (27.61%)	31 (23.13%)	134 (100%)
11.	Social media negatively affects my sleep schedule.	89 (66.42%)	24 (17.91%)	21 (15.67%)	134 (100%)
12.	Late-night social media use makes me tired/less alert in class.	99 (73.88%)	21 (15.67%)	14 (10.45%)	134 (100%)
13.	I use social media for assignment answers without proper citation.	90 (67.16%)	21 (15.67%)	23 (17.16%)	134 (100%)
14.	Social media encourages memorization over critical thinking.	68 (50.75%)	44 (32.84%)	22 (16.42%)	134 (100%)
15.	Social media is necessary for modern education.	112 (83.58%)	17 (12.69%)	4 (2.99%)	134 (100%)
16.	KUST should implement policies to limit social media use during lectures.	67 (50.00%)	31 (23.13%)	36 (26.87%)	134 (100%)
17.	Social media has more negative than positive effects on academic life.	89 (66.42%)	31 (23.13%)	14 (10.45%)	134 (100%)

In the contemporary educational landscape, social media has emerged as both an indispensable tool and a formidable challenge for students across academic institutions. This extensive analysis delves deep into the multifaceted relationship between social media usage and academic performance, drawing upon comprehensive survey data from 134 respondents. The findings reveal a complex dynamic where digital platforms simultaneously facilitate learning and undermine academic achievement, creating a paradox that today's students must constantly navigate. By examining these effects in granular detail, we can better understand how social media reshapes study habits, cognitive processes, and educational outcomes in higher education. The most striking revelation from the survey data is the near-universal adoption of social media for academic purposes, with 90.30% of respondents acknowledging its role in their educational activities. This overwhelming majority highlights how fundamentally digital platforms have become integrated into modern learning ecosystems. Students routinely utilize messaging applications like WhatsApp for real-time study group communication, leverage Facebook communities for resource sharing, and tap into professional networks such as LinkedIn for academic and career development opportunities. The pedagogical value of these platforms lies in their ability to transcend physical classroom boundaries, enabling continuous peer-to-peer interaction and collaborative learning that persists beyond scheduled class hours. Educational researchers Junco (2012) and Tess (2013) have extensively documented this transformation, demonstrating how social media facilitates just-in-time learning and creates virtual spaces for academic discourse that complement traditional instruction methods. However, this widespread academic utilization exists in constant tension with social media's distracting potential. The survey reveals that 50.75% of students struggle to maintain focus during study sessions due to social media interruptions, illustrating the double-edged nature of these platforms. The very applications that host productive study groups also deliver a relentless stream of notifications, entertainment content, and social updates that compete for students' attention. This fragmentation of focus aligns with the cognitive load theory articulated by Sweller (1988), which suggests that the human brain has limited capacity for simultaneous information processing.

When students attempt to divide their attention between academic tasks and social media engagement, both activities suffer from compromised quality and efficiency. The neurological impact is particularly concerning, as studies in neuroplasticity indicate that frequent task-switching between academic work and social media may actually reshape neural pathways, potentially diminishing long-term concentration abilities (Levitin, 2014). The productivity consequences of this divided attention are severe and quantifiable. A staggering 72.36% of respondent's report that social media significantly reduces their efficiency in completing academic assignments, with tangible effects on work quality and completion timelines. The cognitive toll manifests in multiple dimensions: students require more time to complete the same amount of work, produce assignments with greater errors and less depth, and experience heightened stress as deadlines approach. What makes this finding particularly troubling is that 56.72% of students consciously recognize that limiting their social media usage would likely improve their academic performance, yet they struggle to modify their behavior. This phenomenon reflects what behavioral economists call a "present bias" (O'Donoghue & Rabin, 1999), where the immediate gratification of social media engagement consistently outweighs the long-term benefits of focused academic work in students' decision-making processes. Delving deeper into the psychological dimensions, the survey uncovers how Fear of Missing Out (FOMO) operates as a powerful driver of compulsive social media use, reported by 60.45% of respondents. This pervasive anxiety stems from the human need for social connection and the dread of being excluded from important interactions or experiences. In the academic context, FOMO manifests when students interrupt study sessions to check notifications, fearing they might miss crucial course updates or peer communications. Przybylski et al. (2013) have demonstrated how FOMO creates a self-perpetuating cycle of checking behaviors that erode self-regulation and academic focus. Compounding this issue, 49.25% of student's report feeling genuine pressure to maintain active social media presences to preserve their academic and social networks, creating an inescapable tension between connectivity requirements and academic responsibilities. The psychological impact extends further into the realm of social comparison, where 43.28% of students admit to measuring their academic performance against peers' curated online presentations. While only 26.87% explicitly identify this comparison as a stress source, the latent effects likely run deeper. Social media platforms showcase highlight reels of academic success—perfect grades, prestigious internships, and scholarly achievements—while omitting the struggles and failures inherent to the learning process. Festinger's (1954) social comparison theory helps explain how these distorted benchmarks can erode academic self-esteem and motivation, particularly when students perceive their own performance as inadequate relative to their peers' projected successes. The consequences may include diminished academic risk-taking, increased anxiety, and even self-handicapping behaviors where students deliberately reduce effort to protect their self-image. The physiological repercussions of social media engagement present equally serious concerns for academic performance. An alarming 66.42% of respondent's attribute sleep disturbances to their social media use, with 73.88% reporting subsequent daytime fatigue and reduced classroom alertness. The mechanisms behind this phenomenon are well-documented in sleep research: blue light emission from digital screens suppresses melatonin production (Cajochen et al., 2011), while the cognitive stimulation from social media interactions delays sleep onset (Exelmans & Van den Bulck, 2017). The academic consequences are severe, as sleep plays a critical role in memory

consolidation (Stickgold, 2005), problem-solving ability (Wagner et al., 2004), and emotional regulation (Walker, 2009). Students sacrificing sleep for social media engagement essentially undermine their brains' ability to process and retain the information they work so hard to learn during waking hours. Academic integrity emerges as another casualty of pervasive social media use, with 67.16% of students admitting to sourcing assignment answers from social platforms without proper attribution. This troubling statistic suggests that the ease of access to information may be eroding fundamental academic values and skills. The issue extends beyond simple cheating to encompass broader questions about how social media reshapes learning approaches. Half of respondents (50.75%) believe these platforms encourage superficial memorization over deep critical thinking, reflecting concerns that digital immediacy may be displacing rigorous analysis and original thought. This aligns with Carr's (2010) warnings about how the internet may be rewiring our brains for distracted thinking at the expense of sustained concentration and deep cognitive engagement. Despite these significant drawbacks, an overwhelming 83.58% of students still consider social media essential for modern education, highlighting the profound dilemma they face. Digital platforms have become so thoroughly embedded in academic life that disengagement seems impossible, even as students recognize the costs. This paradox explains the divided opinions on institutional regulation, with 50% supporting policies that would limit social media use during lectures while 26.87% oppose such measures. The majority (66.42%) ultimately conclude that social media's negative impacts outweigh its benefits, suggesting a growing awareness of the need for more disciplined and intentional engagement strategies. This comprehensive examination reveals social media's transformative yet problematic role in higher education. Students find themselves caught between the undeniable utility of digital connectivity and its significant cognitive, psychological, and physiological costs. The challenge for educators and institutions lies in developing strategies that help students harness social media's benefits while mitigating its drawbacks. Potential solutions might include digital literacy curricula that teach mindful usage practices, technological tools that promote focused work intervals, and institutional policies that encourage balanced engagement. Future research should investigate the longitudinal effects of social media use on academic trajectories and evaluate the efficacy of various intervention strategies. As digital platforms continue evolving, so too must our understanding of their educational impacts and our approaches to managing them effectively in academic environments

The findings from the survey conducted among 134 students at Kohat University of Science and Technology provide significant insights into the relationship between social media usage and academic performance. The data reveal that more than half of the students (50.75%) admitted experiencing difficulty in concentrating on their studies due to distractions caused by social media. This indicates that the presence of social networking platforms can disrupt focus and reduce the ability to engage in sustained academic activity. A further 32.09% remained neutral on the issue, possibly acknowledging occasional disruptions or being unsure of the precise influence of social media, while a smaller segment (17.16%) disagreed, suggesting variability in personal self-discipline or study habits. The trend of frequent social media usage while studying also emerged prominently, with 41.79% of respondents acknowledging this behavior. Interestingly, 50% expressed a neutral stance, which might reflect ambiguity in recognizing or admitting their own digital habits. Only 8.21% disagreed, implying that for the vast majority, social media usage is an embedded part of their academic routine—even if it interferes with their

productivity. Despite these distractions, a remarkable 90.30% of students reported using social media for academic purposes such as group discussions and research. This suggests that while social media may be a source of distraction, it also plays an integral role in facilitating collaborative learning and information sharing among students. However, this duality of purpose does not overshadow the perceived academic costs. More than half of the participants (52.99%) stated that their study schedules were significantly affected by social media, showing how time spent online can delay or displace dedicated study hours. In a related vein, 72.36% believed that social media reduces their productivity when completing assignments. These figures align closely and reinforce the notion that social media interferes not only with time management but also with the quality of academic engagement. The majority (56.72%) agreed that reducing social media usage would likely lead to better grades, further emphasizing students' own awareness of the detrimental academic outcomes linked to their social media behavior. Another layer of social comparison emerged in the data, where 43.28% of students acknowledged comparing their academic performance with peers on social media. While some may find such comparisons motivating, this tendency may also foster stress or feelings of inadequacy. Surprisingly, when asked whether seeing others' academic achievements on social media causes stress, only 26.87% agreed, and a much larger proportion (60.45%) disagreed, suggesting that students may be resilient against academic comparison-based anxiety, or perhaps do not regularly engage with such content. Nevertheless, the issue of psychological pressure appeared in other areas; 60.45% of respondents admitted experiencing the Fear of Missing Out (FOMO) due to social media. This psychological phenomenon can lead to compulsive checking behavior and constant connectivity, which inevitably distracts from academic responsibilities. Pressure to remain socially active online was also evident, with nearly half (49.25%) feeling compelled to stay engaged on social platforms to maintain social relationships. These behavioral impacts extend into physical health as well, with 66.42% acknowledging that social media negatively affects their sleep schedule. The effects of this sleep disruption are further confirmed by 73.88% of respondents who reported feeling tired or less alert in class due to late-night social media use, illustrating a clear link between social media habits, sleep deprivation, and classroom engagement. Another notable finding is that 67.16% of students admitted using social media to search for assignment answers without proper citation, indicating concerns about academic integrity and over-reliance on digital shortcuts. This kind of behavior not only undermines critical thinking but also promotes a culture of passive learning. A related question asked whether social media encourages memorization over critical analysis; 50.75% agreed, reinforcing the concern that reliance on social media for academic purposes might limit deeper cognitive engagement. Nonetheless, the utility of social media in modern academic settings was acknowledged by a significant 83.58% of the respondents, who agreed that social media is necessary for modern education. This underscores a nuanced understanding among students - they recognize the negative effects but also value social media's role in facilitating access to information, collaboration, and communication. In terms of institutional policy, 50% of students supported the idea that KUST should implement restrictions on social media use during lectures. This suggests a willingness among students to accept boundaries in order to enhance classroom focus and academic discipline. Finally, a majority of 66.42% agreed that social media has more negative than positive effects on academic life. This critical reflection confirms the overarching theme of the dataset: while social media plays an important role in the academic and social lives of students, its

negative consequences - ranging from reduced concentration and productivity to disrupted sleep and ethical concerns - are strongly felt.

Conclusions

Based on the comprehensive analysis of the data gathered from students at KUST, this research concludes that the negative impacts of social media on student academic life are both substantial and deeply rooted. Although social media has the potential to serve as a tool for educational engagement, collaboration, and access to academic content, the majority of students use it in ways that hinder rather than help their academic progress. One clear conclusion is that students lack sufficient control over their usage of social media. The addictive design of most platforms keeps students engaged far beyond their original intent. This leads to time wastage, interrupted study sessions, and a diminished ability to engage in deep learning. Many students struggle to set boundaries between academic responsibilities and digital leisure, resulting in compromised academic achievement. Furthermore, social media is not just a passive distraction - it actively shapes students' emotions and self-perception. The psychological pressure caused by online comparison, fear of missing out (FOMO), and social validation weakens students' confidence and focus. These emotional challenges translate into lower academic output, as students find it difficult to sustain motivation or believe in their academic potential. Another conclusion is that the university environment currently lacks structured intervention strategies to deal with the overuse of social media. Students are left to self-regulate their online behaviors without adequate guidance, which contributes to the continuation of harmful habits. As a result, the academic experience becomes less about intellectual development and more about balancing educational responsibilities with online distractions - a balance many students are unable to maintain successfully. In essence, the research affirms that the negative impact of social media is multi-dimensional - affecting not only how students manage their time and academic tasks, but also how they think, feel, and perceive their capabilities. Without immediate and long-term strategies to address this, the quality of academic life among university students is at risk of further decline.

Recommendations

In light of the research findings and conclusions, several important recommendations emerge to address the negative impact of social media on student academic life. First and foremost, universities, including KUST, should take a proactive role in educating students about digital responsibility. This can be achieved by integrating media literacy and digital wellness into the general curriculum. Such modules should not only discuss the dangers of overuse but also offer students tools and strategies for managing their screen time effectively. In addition, the institution should organize regular awareness seminars and training workshops that focus on time management, concentration techniques, and the psychological effects of social media. These sessions can help students recognize their usage patterns and develop healthier habits. Student counseling services should be strengthened, particularly in the areas of mental health and academic support. Students who experience anxiety, stress, or academic failure due to social media habits should have access to professionals who can guide them toward recovery and improvement. Group therapy, peer support programs, and mentorship initiatives may also help in building a culture of academic focus and emotional support. Furthermore, it is important to encourage offline engagement among students. Universities can promote co-curricular and extracurricular activities that allow students to build social relationships and personal

development outside of digital spaces. This shift can reduce students' dependence on virtual validation and create a stronger sense of academic and community belonging. Lastly, students themselves must be encouraged to take responsibility for their learning environment. Developing self-discipline, setting screen-time limits, and prioritizing academic tasks over online distractions are essential skills that must be cultivated actively. Without personal accountability, institutional efforts may fall short.

Limitations

Although this study provides important insights into the adverse effects of social media on student academic life, certain limitations must be acknowledged. Firstly, the research was conducted exclusively within one institution - Kohat University of Science and Technology - which limits the generalizability of the findings to other universities in Pakistan or globally. While the sample was diverse in gender and academic disciplines, it may not reflect the experiences of students in other educational settings or cultural environments. Secondly, the research relied solely on quantitative data collected through self-reported questionnaires. Although Likert-scale responses provide valuable numerical insights, they may not capture the full depth of students' personal experiences with social media. Respondents may have underreported or over reported certain behaviors due to social desirability bias or a lack of self-awareness regarding their social media habits. Thirdly, the cross-sectional design of the study only provides a snapshot in time. It does not allow for the observation of changes in behavior, attitude, or academic outcomes over time. Longitudinal studies would be better suited to understand how social media habits evolve and how their impacts deepen or shift during different stages of academic life. Lastly, the study did not differentiate between types of social media use - for example, academic vs. entertainment-based usage - which could have provided more nuanced findings. Despite these limitations, the study offers a meaningful foundation for further exploration and practical intervention in the field of education and digital behavior.

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