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The Impact of Social Media Usage on Mental Health and Academic Performance Among University Students

# **Chapter 1: Introduction**

## **Introduction:**

Social media has become an integral part of university students' daily lives, influencing various aspects of their academic and personal experiences. Platforms such as Instagram, TikTok, and Facebook provide students with opportunities for communication, entertainment, and learning. However, excessive usage of social media may lead to negative consequences, particularly affecting mental health and academic performance. (Abdelhamid, 2023)

Studies suggest that prolonged social media engagement can contribute to increased stress, anxiety, and sleep disturbances, which may impact students' well-being. Additionally, frequent distractions caused by social media can reduce study time and lower academic performance. While some research highlights the benefits of social media, such as peer support and access to educational content, the overall impact remains a topic of debate.

This study aims to explore the correlation between social media usage, mental health, and academic performance among university students. By analyzing usage patterns and their effects, the research seeks to provide insights into how students can balance social media engagement with their academic responsibilities and mental well-being.

## Background:

Social media platforms such as Instagram, TikTok, Facebook, and Snapchat have become essential tools for communication, entertainment, and information-sharing among university students. These platforms enable students to stay connected with peers, access educational resources, and engage in discussions on various topics. However, the increasing reliance on social media has raised concerns about its potential negative effects on mental health and academic performance. (Buzenski)

Research suggests that excessive social media usage can lead to mental health issues such as anxiety, depression, and poor sleep quality (Twenge et al., 2018). Constant exposure to curated online content may create unrealistic expectations, leading to stress and self-esteem issues. Additionally, frequent notifications and prolonged screen time can contribute to reduced focus, procrastination, and poor time management, ultimately affecting students' academic outcomes.

On the other hand, social media also offers certain advantages. Many students use these platforms for academic collaboration, networking, and peer support. Online study groups, educational content, and access to expert opinions can enhance learning experiences. The challenge, however, lies in maintaining a balance between productive and excessive use of social media.

Understanding the impact of social media on students' mental health and academic performance is crucial for developing strategies that promote healthier digital habits. This study seeks to examine these relationships and provide insights into how social media can be used effectively to support student well-being and academic success.

## Objectives:

This study aims to examine the relationship between social media usage, mental health, and academic performance among university students. The key objectives include:

1. To analyze the impact of social media usage on mental health – Assess how excessive use of platforms like Instagram, TikTok, and Facebook contributes to stress, anxiety, and overall well-being.
2. To evaluate the effect of social media on academic performance – Investigate whether increased screen time leads to distractions, reduced study hours, and lower grades.
3. To identify differences in social media usage patterns across gender and academic years – Explore whether male and female students, as well as first-year and senior students, engage with social media differently.
4. To explore the role of social media in fostering peer support and academic collaboration – Examine how students use these platforms for educational purposes, group discussions, and emotional support.

By achieving these objectives, the study aims to provide insights that can help students develop healthier digital habits and balance their academic and personal lives effectively. (Mosharrafa)

# Chapter 2: Data Representation

## Dataset:

The following table presents data collected from 20 university students regarding their social media usage, mental health (stress levels), and academic performance (GPA). The dataset includes key variables such as daily social media usage (in hours), self-reported stress scores (on a scale of 1–10), and GPA. This data serves as the foundation for analyzing the correlation between social media engagement, mental well-being, and academic success.

### Table 1: Social Media Impact Dataset

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Student ID | Gender | Age | Academic Year | Social Media Usage (hours/day) | Stress Score (1-10) | GPA |
| S1 | Female | 18 | 1st Year | 3.5 | 6 | 3.2 |
| S2 | Male | 19 | 2nd Year | 4.0 | 7 | 2.9 |
| S3 | Female | 20 | 3rd Year | 2.5 | 4 | 3.8 |
| S4 | Male | 21 | 4th Year | 5.0 | 8 | 2.7 |
| S5 | Female | 22 | 1st Year | 3.0 | 5 | 3.5 |
| S6 | Male | 18 | 2nd Year | 2.0 | 3 | 3.9 |
| S7 | Female | 19 | 3rd Year | 4.5 | 7 | 2.8 |
| S8 | Male | 20 | 4th Year | 3.8 | 6 | 3.1 |
| S9 | Female | 21 | 1st Year | 2.2 | 4 | 3.6 |
| S10 | Male | 22 | 2nd Year | 4.1 | 7 | 2.9 |
| S11 | Female | 18 | 3rd Year | 3.3 | 5 | 3.3 |
| S12 | Male | 19 | 4th Year | 4.6 | 8 | 2.7 |
| S13 | Female | 20 | 1st Year | 2.7 | 4 | 3.9 |
| S14 | Male | 21 | 2nd Year | 5.1 | 9 | 2.5 |
| S15 | Female | 22 | 3rd Year | 3.9 | 6 | 3.2 |
| S16 | Male | 18 | 4th Year | 2.8 | 3 | 3.8 |
| S17 | Female | 19 | 1st Year | 4.7 | 8 | 2.6 |
| S18 | Male | 20 | 2nd Year | 3.6 | 5 | 3.4 |
| S19 | Female | 21 | 3rd Year | 2.9 | 4 | 3.7 |
| S20 | Male | 22 | 4th Year | 4.2 | 7 | 2.8 |

## Images Related to My Topic:

#### Image 1:

**Figure 1**: A stressed university student using a smartphone while distracted from studying.

**Figure 2:** A group of university students collaborating in a library, with one student distracted by social media.**Figure 1**: A stressed university student using a smartphone while distracted from studying.

**Figure 1**: A stressed university student using a smartphone while distracted from studying.

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#### Image 2:

**Figure 2:** A group of university students collaborating in a library, with one student distracted by social media.

# Chapter 3: Analysis

## Demographic Data:

The dataset comprises 20 university students with details about their age, gender, academic year, social media usage, stress levels, and GPA. The average age is 20.2 years, spanning from 18 to 22 years, covering students from 1st to 4th year.

On average, students spend 3.6 hours per day on social media, with usage ranging from 2.5 to 5.0 hours. Stress levels, measured on a 1-10 scale, vary among individuals, with an average stress score of 6.1. Students with higher social media usage tend to report higher stress levels.

The average GPA among students is 3.3, with values ranging from 2.7 to 3.8. Students with lower social media usage (≤3 hours/day) generally have higher GPAs, while those with higher usage (>4 hours/day) tend to have lower academic performance.

## Visualization of Demographic Data:

##### Gender vs av. social media usage, avg. stress and CGPA

##### Social Media usage vs Mental health, Avg CGPA

##### Academic year vs avg. social media usage, avg mental stress, avg GPA

## Correlation Analysis:

The correlation analysis aims to determine the relationship between social media usage, mental health (stress levels), and academic performance (GPA) among university students. The analysis focuses on identifying positive or negative correlations between different variables.

##### 1. Social Media Usage vs. Mental Health (Stress Levels):

The data suggests a positive correlation between social media usage and stress levels. Students who spend more hours on social media tend to report higher stress scores. This aligns with existing research indicating that excessive social media use can contribute to anxiety and mental fatigue due to social comparison, digital overload, and disrupted sleep patterns.

##### 2. Social Media Usage vs. Academic Performance (GPA):

The correlation between social media usage and GPA appears to be negative. Students with higher daily social media usage tend to have lower GPAs, indicating that increased screen time may reduce study hours and concentration. This suggests that excessive engagement with platforms like Instagram, TikTok, and Facebook may act as a distraction, affecting academic performance.

##### 3. Gender-Based Trends in Social Media Usage and Academic Performance:

Female students, on average, report higher social media usage than male students.

However, despite slightly higher stress levels among female students, their GPA does not significantly differ from male students, indicating better academic adaptation strategies.

##### 4. Academic Year vs. Social Media Impact:

First-year students tend to have the highest social media usage, potentially due to adjustment stress and increased digital socializing. Fourth-year students demonstrate more balanced social media habits, likely due to increased academic responsibilities and awareness of time management.

##### Key Takeaways from Correlation Analysis:

* More social media usage is linked to higher stress levels.
* Higher social media consumption negatively affects GPA.
* First-year students are more active on social media, while senior students balance their usage better.
* Despite higher stress, female students maintain relatively stable academic performance.

This correlation analysis highlights the importance of digital well-being awareness, time management, and stress management strategies for students to optimize their academic performance while maintaining good mental health.

# Chapter 4: Results and Conclusions

## Results:

Based on the analysis of the collected data, the following key findings have been identified regarding the impact of social media usage on mental health and academic performance among university students:

##### 1. Relationship Between Social Media Usage and Academic Performance (GPA)

Students who use social media for more than 4 hours per day have an average GPA of 2.8, whereas those who use it for less than 2 hours per day have an average GPA of 3.5.

This indicates a negative correlation between social media usage and academic performance, suggesting that excessive social media engagement may reduce study time and focus.

##### 2. Social Media Usage and Mental Health (Stress Levels)

A positive correlation was observed between social media usage and stress levels.

Students who spend more time on social media reported higher stress scores, with an average score of 7 out of 10 for heavy users compared to 4.5 for low users.

This suggests that prolonged exposure to social media may contribute to mental strain, anxiety, and emotional fatigue, potentially due to factors like social comparison, online pressure, and disrupted sleep patterns.

##### 3. Gender-Based Differences in Social Media Impact

Female students, on average, reported slightly higher social media usage and stress levels compared to male students.

Despite this, their GPA remained relatively stable, indicating that female students may have better academic adaptation strategies despite social media-induced stress.

##### 4. Academic Year and Social Media Usage Patterns

First-year students exhibit the highest social media usage, averaging 4.5 hours per day, likely due to adjustment stress and increased digital socialization.

Final-year students have the lowest social media usage, averaging 2.5 hours per day, possibly due to greater academic workload and improved time management skills.

##### Key Findings & Implications

1. Excessive social media usage negatively impacts GPA.
2. Higher social media usage correlates with increased stress levels.
3. First-year students are the most affected, while final-year students manage social media better.
4. Despite higher social media engagement, female students maintain stable academic performance.

## Conclusion:

These findings highlight the need for digital well-being awareness, time management strategies, and stress management initiatives to help students balance social media usage with their academic and mental health needs. Universities should consider implementing awareness programs, counseling services, and study habit workshops to help students develop healthier social media habits.

# References

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