

# Students' Social Media Addiction

Information Visualisation 25/26

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# Introduction

Social Media has become a major part of people's lives, especially students.

While these platforms offer opportunities for entertainment, learning and connection, in the past few years its excessive use has raised concerns about addiction and impact on academics and mental health.

## Dataset:

[www.kaggle.com/datasets/adilshamim8/social-media-addiction-vs-relationships](https://www.kaggle.com/datasets/adilshamim8/social-media-addiction-vs-relationships)



# About the Dataset



## Volume

Total of 705 students  
were surveyed



## Population

Students aged 18-24  
enrolled in high school,  
undergraduate, or  
graduate programs



## Timeframe

Data collected via a  
one-time online  
survey administered  
in Q1 2025



## Geography

Multi-country  
coverage

# Limitations



## Self-reported bias

May be subject to social-desirability effects

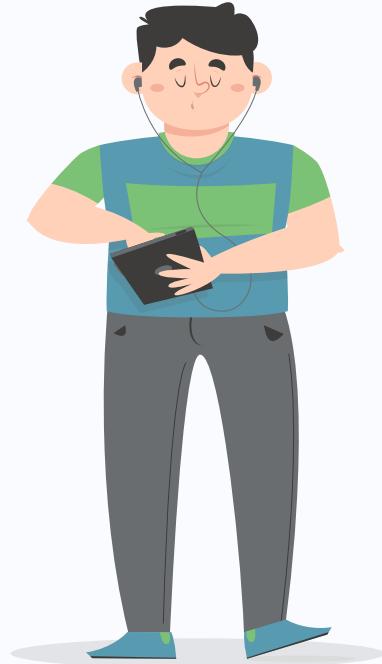


## Cross-Sectional Design

One-time survey may not depict accurate conclusions

# Key variables

Student_ID	Unique Identifier
Age	Age in years
Gender	Male / Female
Academic_Level	High School / Undergraduate / Graduate
Country	Country of residence
Avg_Daily_Usage_Hours	Average hours per day on social media
Most_Used_Platform	Instagram, TikTok, etc...
Affects_Academic_Performance	Impact on academics (Y/N)
Sleep_Hours_Per_Night	Average nightly sleep hours
Mental_Health_Score	Mental Health Score (1=low to 10=high)
Relationship_Status	Single / In Relationship / Complicated
Conflicts_Over_Social_Media	No. of Relationship conflicts due to Social Media
Addicted_Score	Social Media Addiction Score (1=low to 10=high)



# Personas

**Possible Task:**  
Compare groups of students to see how Social Media affects them differently.



**Academic  
researchers**

**Possible Task:**  
Check if a heavy use of SM impacts mental health and relationship development.

**Academic Performance**

relation with:

Sleep hours

Students that claim social media affects their academic performance, also report sleeping less.

**Sleep Hours**

Y-axis: Sleep Hours (4 to 8)

X-axis categories: Yes, No

Approximate Data for Sleep Hours:

Category	Mean (approx.)	Median (approx.)	Range (approx.)
Yes	5.5	5.0	4.5 to 6.5
No	6.0	5.5	5.0 to 7.0

Social Media affects academic performance?

**Mental Health**

relation with:

Sleep hours

Mental Health is directly correlated to sleep hours...

**Age**

Y-axis: Age (15, 20, 25)

X-axis: Male (left), Female (right)

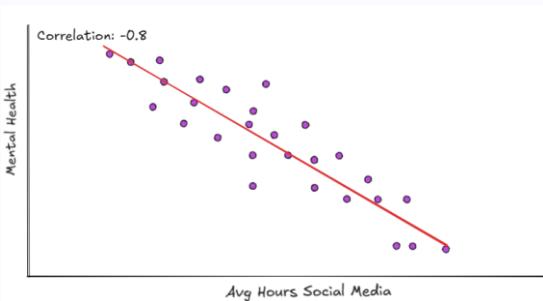
Approximate Data for Mental Health Scores:

Gender	Age Group	Score Range (approx.)
Male	15-17	80-95
Male	18-20	70-85
Female	15-17	85-95
Female	18-20	75-90

# Low-Fidelity Prototype

# LF - Visualisation Techniques

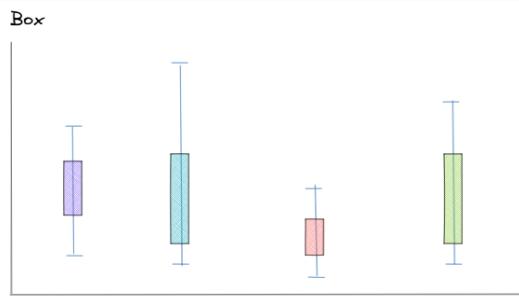
## Scatter Plot



### Example Usages:

**Task** - What is the correlation between Mental Health and Social Media average daily hours?

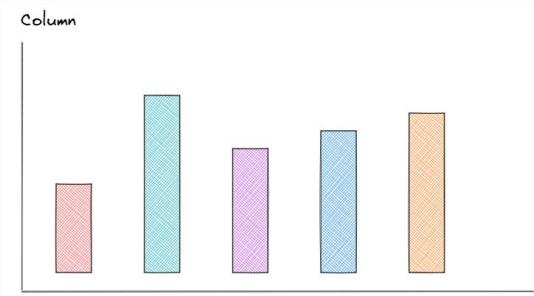
## Box Plot



### Example Usages:

**Task** – How does social media affect sleep hours?

## Column Chart

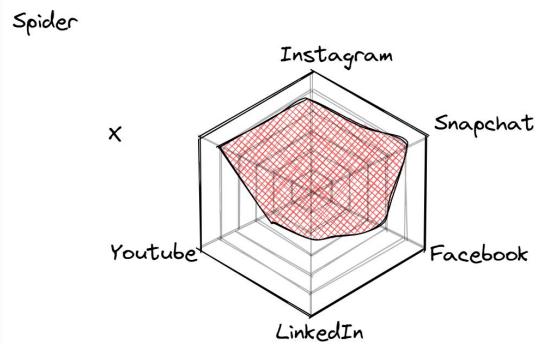


### Example Usages:

Student distribution (Age, Academic Level, Gender)

# LF - Visualisation Techniques

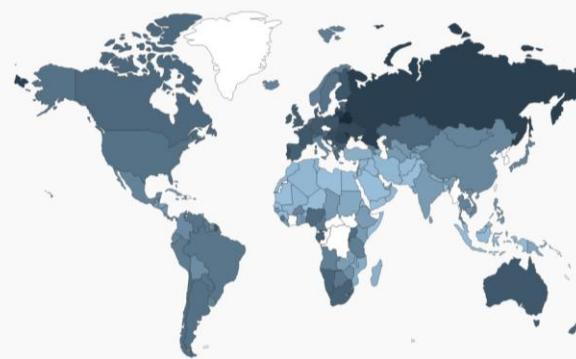
Spider Plot



Example Usages:

**Task** - Which was found to be the most used Social Media platform?

Map Chart



Example Usages:

Distribution by country (platform, addiction score, ...)

# LF - User Evaluation

We asked colleagues to explore, complete tasks and evaluate our Low fidelity prototype.

**5 Participants (4M – 1F)**

**Questions:**

**SpiderChart – What is the most used platform?**

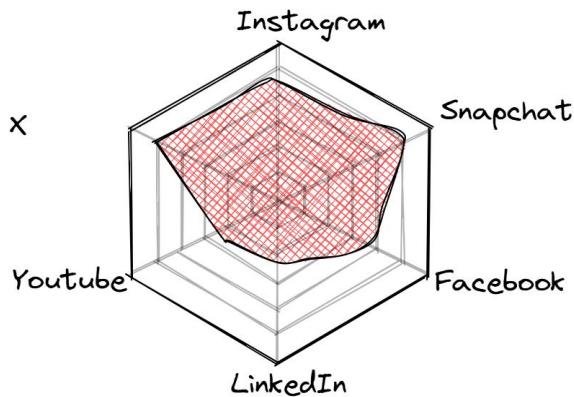
**ScatterPlot – What is the correlation value between Mental Health VS Daily Usage**

**BoxPlot – How does social media affect sleeping hours?**

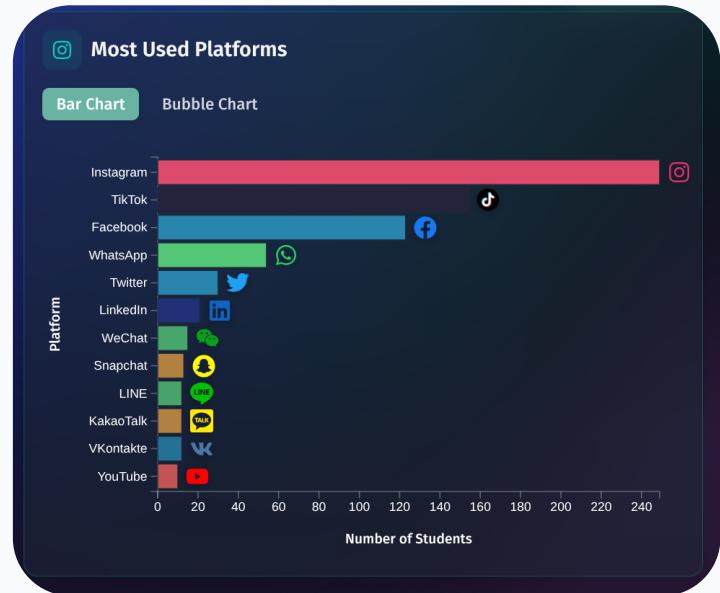
# LF - Feedback

SpiderPlot – What is the most used Platform?

Spider

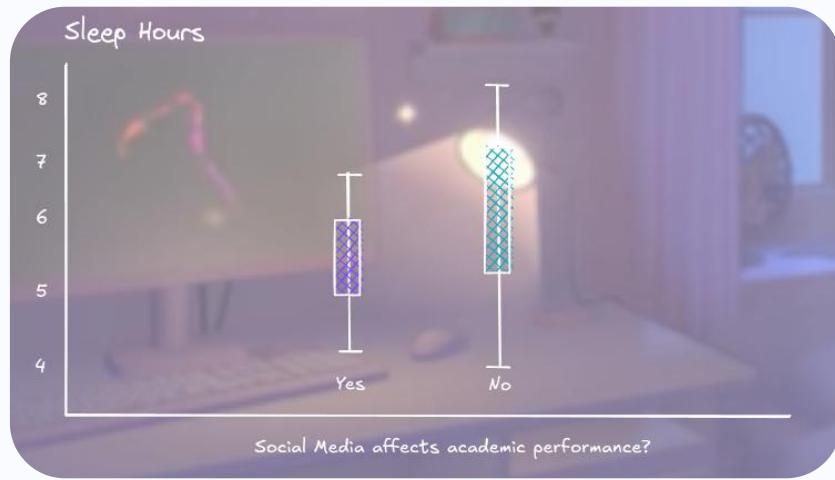


Harder to verify which one is the most used  
Doesn't work if there are a lot of platforms



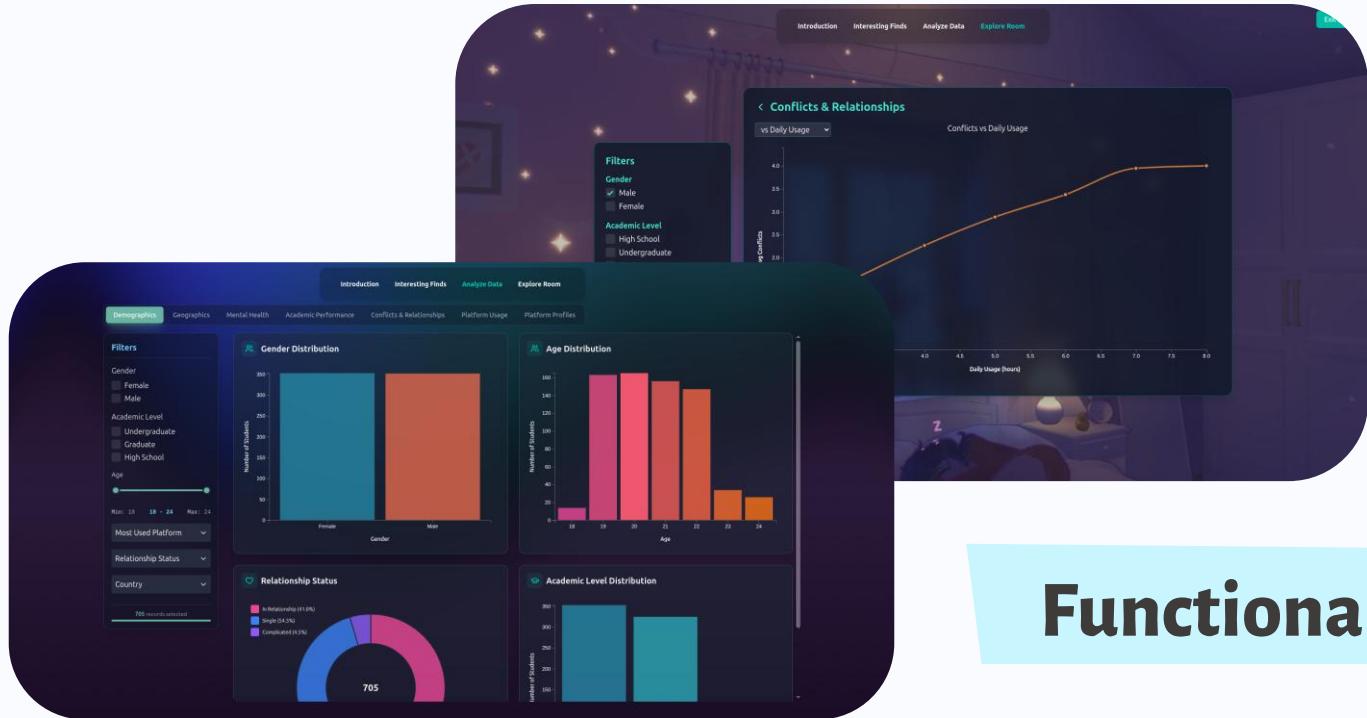
# LF - Feedback

BoxPlot – How does social media affect sleeping hours?



Questions in labels

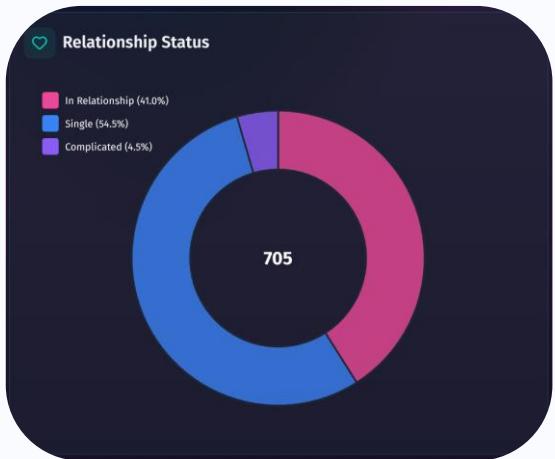
Low visibility



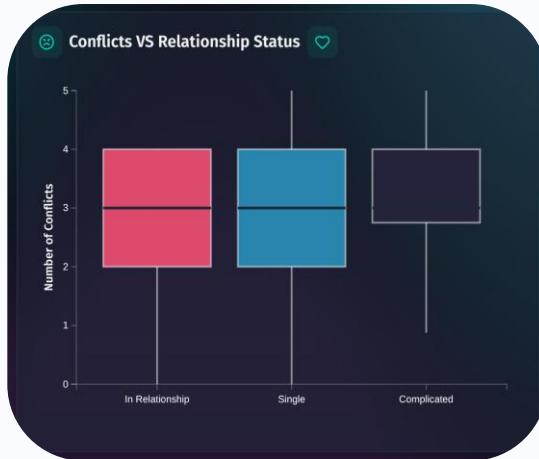
# Functional Prototype

# HF - Visualisation Techniques

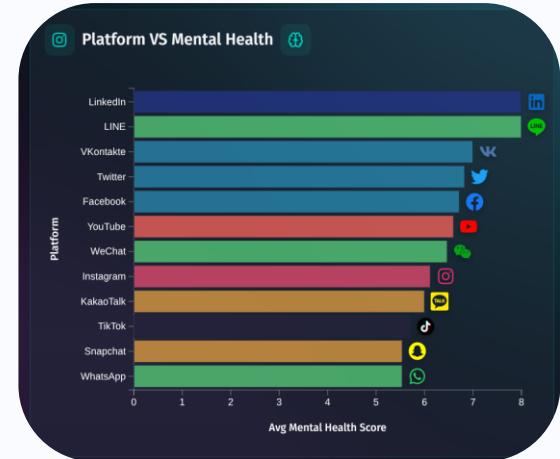
## Pie/Donut Plot



## Box Plot

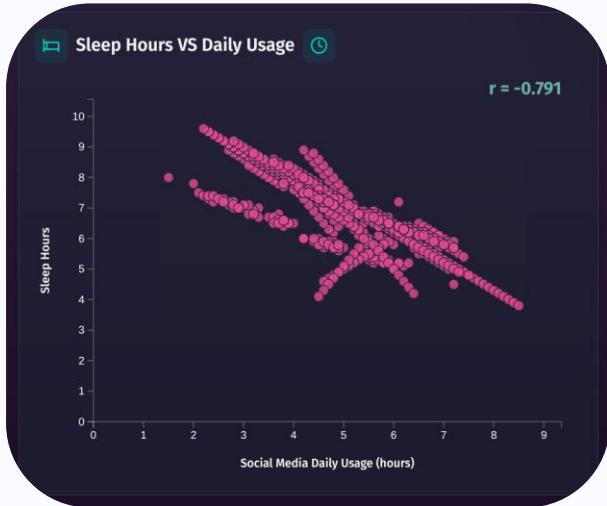


## Bar Chart

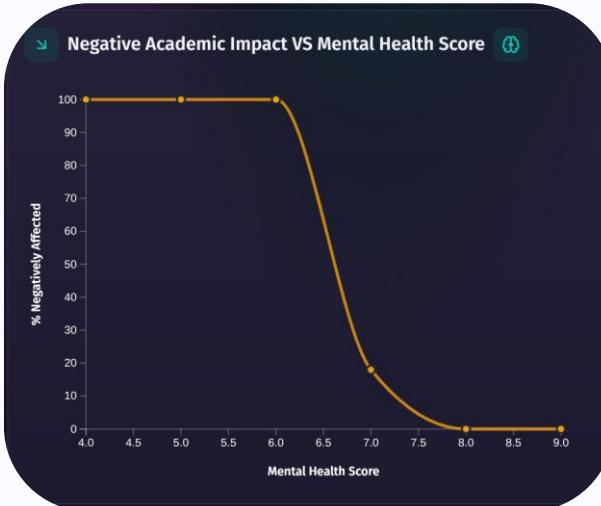


# HF - Visualisation Techniques

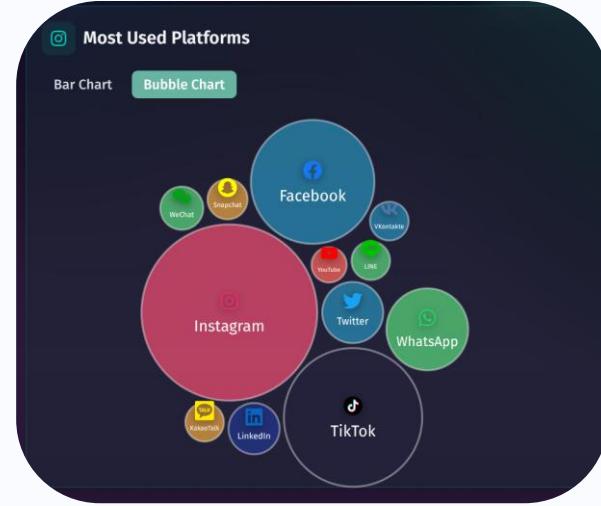
## Scatter Plot



## Line Chart

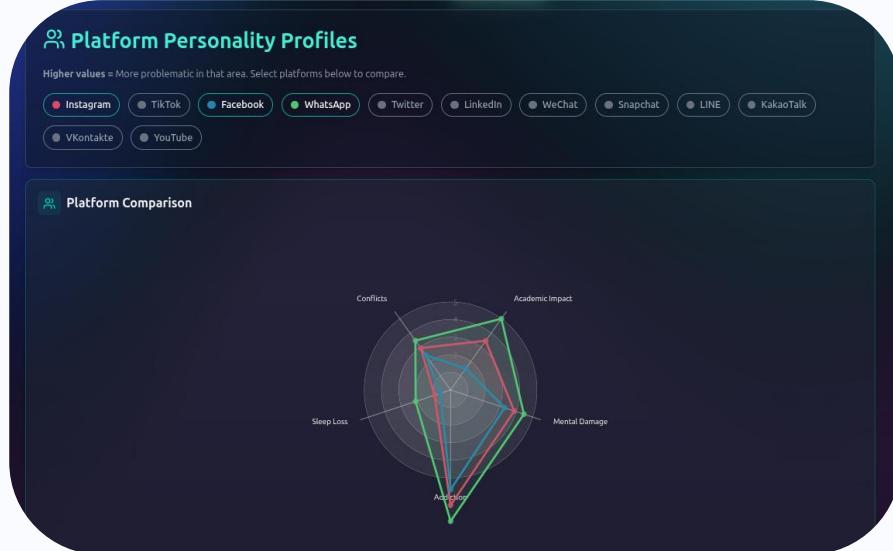


## Bubble Chart



# HF - Visualization Techniques

## Spider Plot



## Map Chart



# HF - Visualisation Techniques

## Filters

**Filters**

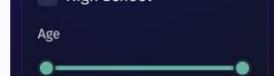
Gender

- Female
- Male

Academic Level

- Undergraduate
- Graduate
- High School

Age



Min: 18    18 - 24    Max: 24

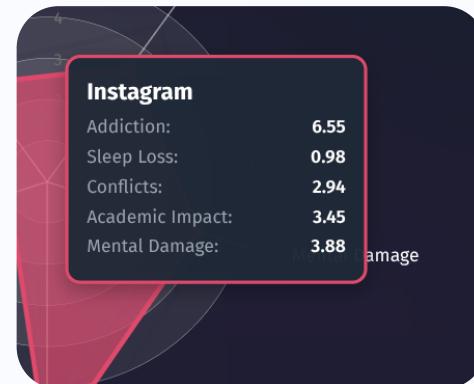
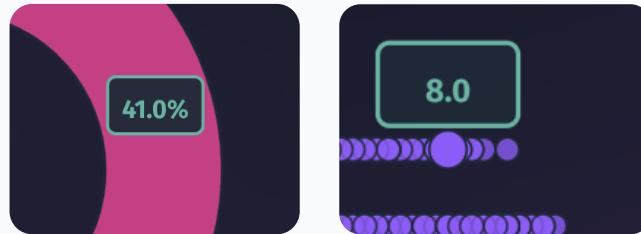
Most Used Platform

Relationship Status

Country

705 records selected

## Tooltips



# Heuristic Evaluation

Nielsen's 10 Usability Heuristics

Severity Rate:

- 0 – Not a usability problem
- 1 – Cosmetic problem
- 2 – Minor usability problem
- 3 – Major usability problem
- 4 – Usability catastrophe

1: Visibility of System Status – **1: No warning for empty data (ex.: very specific filter combinations)**

2: Match Between the System and the Real World – **No Issue**

3: User Control and Freedom – **2: Only filter grouping and no side-by-side comparison**

4: Consistency and Standards – **1: Some colours are not standardized**

5: Error Prevention – **No issue**

# Heuristic Evaluation

Nielsen's 10 Usability Heuristics

Severity Rate:

- 0 – Not a usability problem
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- 4 – Usability catastrophe

6: Recognition Rather than Recall – **No issue**

7: Flexibility and Efficiency of Use – **No issue**

8: Aesthetic and Minimalist Design – **No issue**

9: Help Users Recognize, Diagnose, and Recover from Errors – **No issue**

10: Help and Documentation – **No issue**

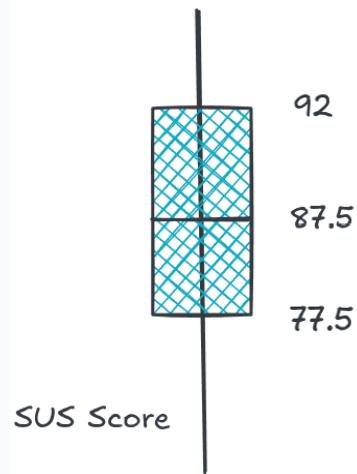
# System Usability Scale (SUS)

We asked colleagues to explore, complete tasks and evaluate our system.

4 Participants (3M – 1F)

21 years old

Average SUS score: 87.5



## Social Media Addiction VI - Usability Test

This form consists of 3 tasks, created to assess the usability of our prototype for our Visualisation of Information project. **You can give up at any time.**

Não partilhado

\* Indica uma pergunta obrigatória

Task 1 - What is the **second most** used platform by undergraduate males with **20 years or less?** \*

A sua resposta

Task 2 - What is the correlation between **Mental Health VS Daily Usage?** \*

A sua resposta

Task 3 - How many **undergraduate female** older than 20 years old claimed to have 2 or less conflicts due to social media? \*

A sua resposta

Task 4 - In the explore room section, what is the **correlation between Sleep Hours and Daily Usage** for females older than 20?

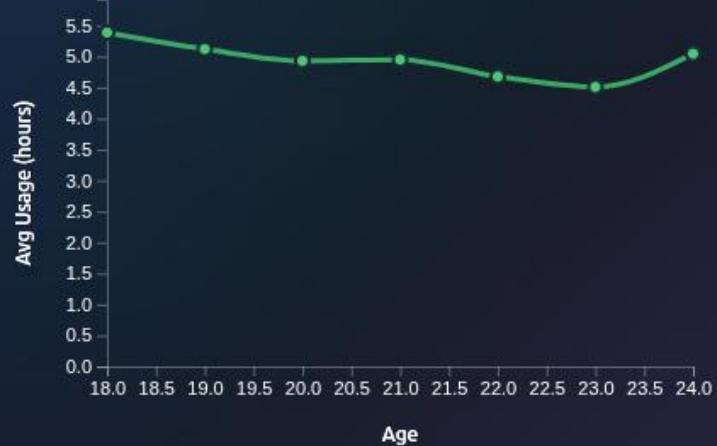
A sua resposta

# User feedback and improvements

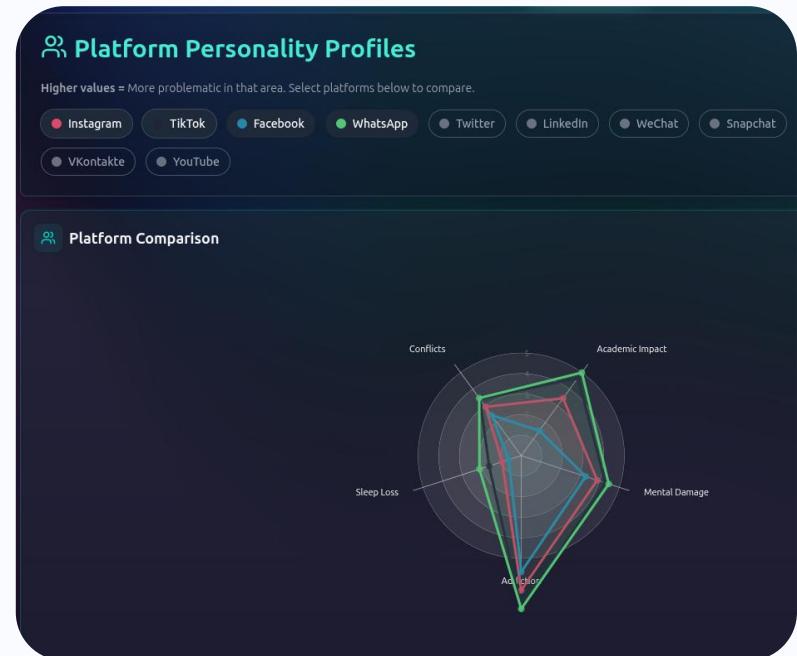
⌚ Usage by Age Trend



⌚ Usage by Age Trend



# User feedback and improvements



# Functional Prototype - Demo

The screenshot shows a dark-themed web application interface. At the top, there is a navigation bar with four items: "Introduction" (highlighted in blue), "Interesting Finds", "Analyze Data", and "Explore Room". Below the navigation bar, the main title "Students' Social Media Addiction" is displayed in large, bold, white font. Underneath the title, a descriptive paragraph in white text reads: "The **Student Social Media & Relationships** dataset explores student behaviors, focusing on social media usage patterns, academic performance, and relationship dynamics across multiple countries. Each record represents a student's self-reported experience, providing key insights for research, visualization, and predictive modeling." At the bottom center of the page is a small, rectangular "Explore" button with a white border and a dark background.

# Conclusions

Excessive Social Media usage impact:

- **Worse academic performance**
- **Less sleep hours**
- **Worse mental health**
- **Higher number of conflicts**

Most problematic platforms:

- **Lower Mental Health: Whatsapp**
- **Most Addictive: Snapchat**
- **Biggest Negative Academic Impact: Whatsapp**

Interesting finds:

- **Average Daily Usage Hours: 4.92h**
- **Average Daily Sleep Hours: 6.9h**
- **Average Mental Health Score: 6.2/10**

# Thanks!

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Website: 114137 – 50%  
Raquel Vinagre 113736 – 50%



# Check out our project!

Website: [social-media-addiction.github.io](https://social-media-addiction.github.io)

Code: [github.com/social-media-addiction](https://github.com/social-media-addiction)