

# From Likes to Lows

## Understanding the Psychological Effects of Social Media Use

Giorgia Faedda  
Hoda Nseif  
Andrea Herrera  
Raghad Al Shalati  
Umida Rahmanova

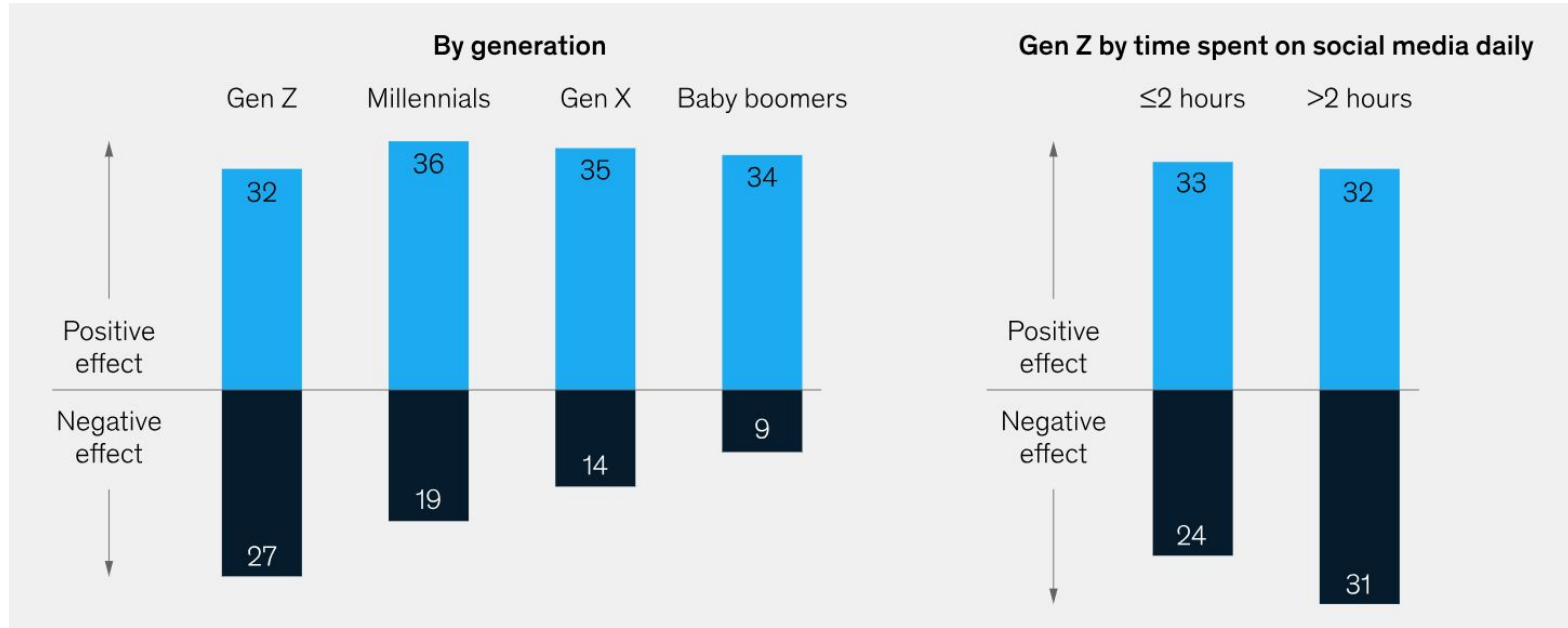
Introduction to Data Analytics



# Why this topic?



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Research Link: <https://bit.ly/46MddSj>

# Why this topic?

- Is there any **real** correlation between **Social Media** and **Mental Health**?
- And what are the **consequences** of **Social Media** use?



# The challenge

Are we going to find the same results as other studies have found?

Social comparison, social media, and self-esteem.

EXPORT ★ Add To My List

[Vogel, Erin A.](#) [Rose, Jason P.](#) [Roberts, Lindsay R.](#)  
[Eckles, Katheryn](#)



ScienceDirect



Full length article

## Does time spent using social media impact mental health?: An eight year longitudinal study

[Sarah M. Coyne](#)   [Adam A. Rogers,](#)  
[Jessica D. Zurcher,](#) [Laura Stockdale,](#) [McCall Booth](#)

### From Likes to Lows

Understanding the Psychological Effects of Social Media Use

# Research question

How does social media impact mental health, including self-esteem, anxiety, and depression?

# Research

How does social media impact mental health, including self-esteem, anxiety, and depression?

- 
- **Survey and analysis plan**
  - **Demographic data**
  - **Mental health questions**



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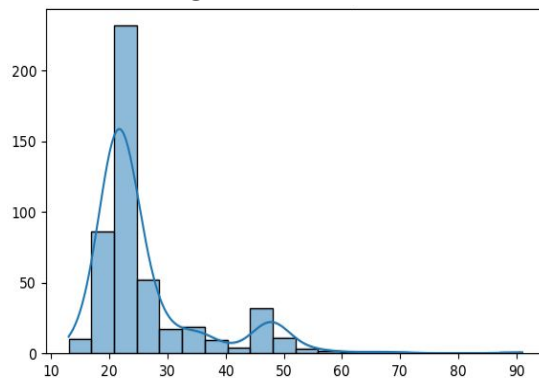
## **From Likes to Lows**

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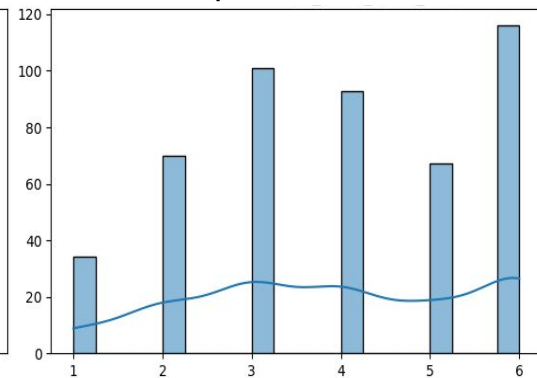
# Our Sample

- Sample size: 481
- Mostly young people
- Most more than 5 hours daily on platforms
- Mostly university students

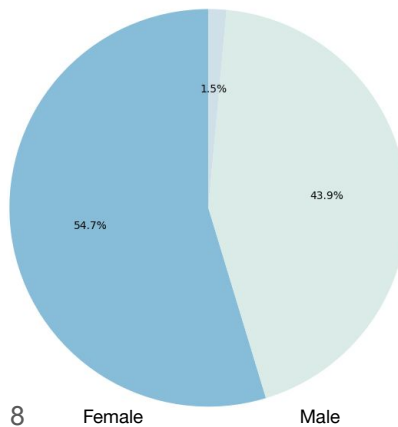
Age Distribution



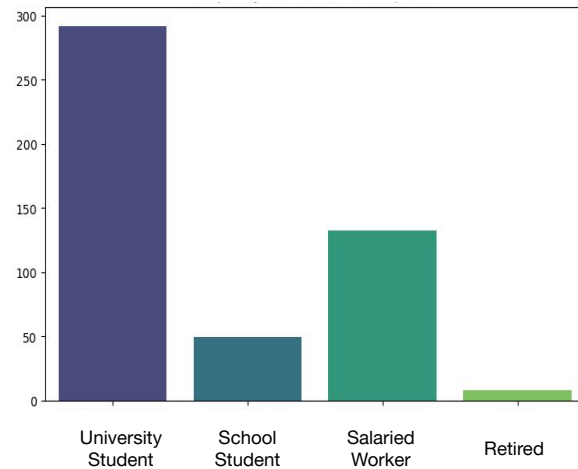
Time spent on Socials



Sex



Occupation





# Data cleaning

- Handle missing values
- Remove duplicates
- Encoding



## Distribution of missing data

```
retired_students_null_affiliated = df[(df['occupation'].str.contains('Retired|Student', case=False))
                                     & df['affiliated_organization'].isna()]
print(f"When occupation contains 'retired' or 'student' and affiliated_organization is null: "
      f"{retired_students_null_affiliated.shape[0]}/{df['affiliated_organization'].isna().sum()}")

retired_students_notnull_affiliated = df[(df['occupation'].str.contains('Retired|Student', case=False))
                                     & df['affiliated_organization'].notna()]
print(f"When occupation contains 'retired' or 'student' and affiliated_organization is not null: "
      f"{retired_students_notnull_affiliated.shape[0]}")
```

✓ 0.0s

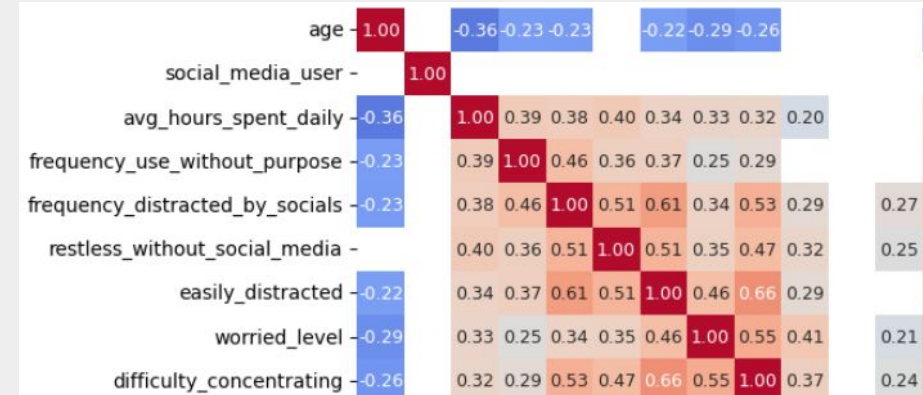
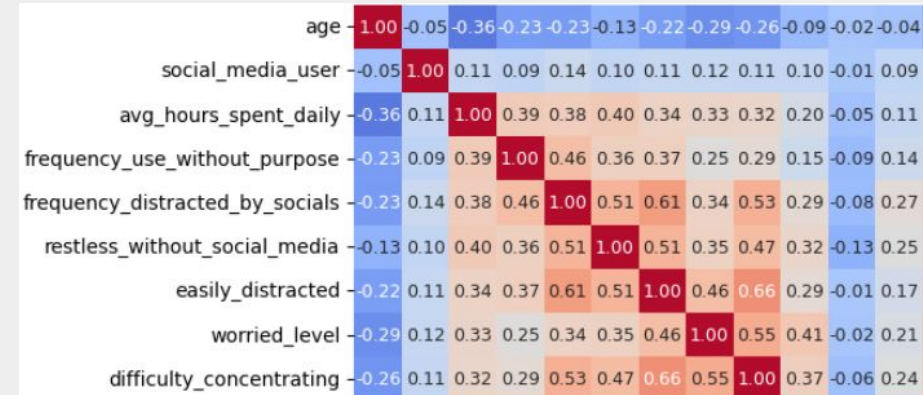
```
When occupation contains 'retired' or 'student' and affiliated_organization is null: 22/30
When occupation contains 'retired' or 'student' and affiliated_organization is not null: 327
```

```
# Identify and remove entire duplicate rows
df.drop_duplicates()
```

[illegible]

# Analysis methodology

- Correlation Matrix
- Filtering entangled variables
- Analysing meaningful correlations

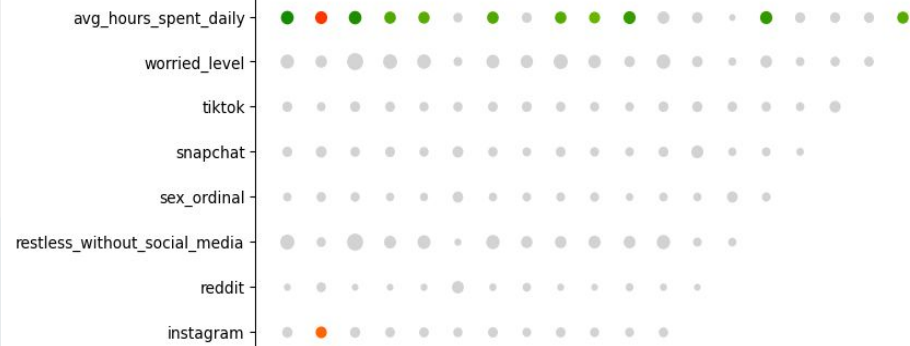


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# Testing methodology

- Model selection and Test Validity
- Combination Matrix Logistic Regression
- Prediction evaluation with Confusion Matrix



Accuracy: 0.7731958762886598

Confusion Matrix:

```
[[58  8]
 [14 17]]
```

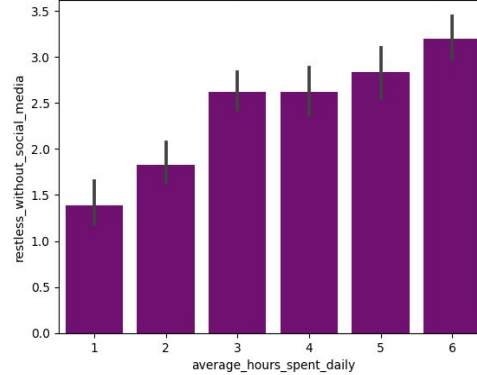
Classification Report:

	precision	recall	f1-score	support
0	0.81	0.88	0.84	66
1	0.68	0.55	0.61	31
accuracy			0.77	97
macro avg	0.74	0.71	0.72	97
weighted avg	0.77	0.77	0.77	97

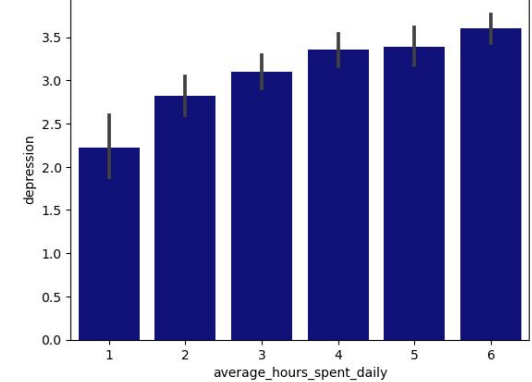
# Results

- **Not significant:**
  - social media platforms and mental health conditions
- **Significant result:**
  - time spent on social media and mental health conditions

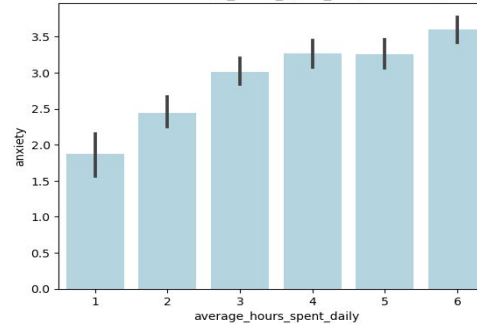
Bar Plot: average\_hours\_spent\_daily vs. restless\_without\_social\_media



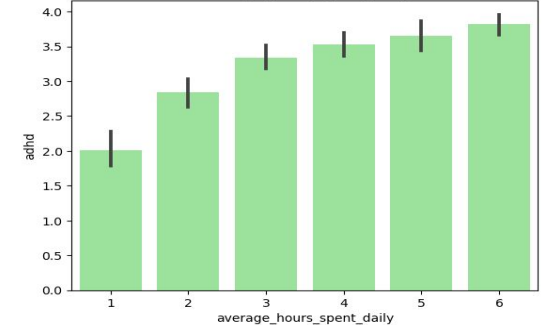
Bar Plot: average\_hours\_spent\_daily vs. depression



Bar Plot: average\_hours\_spent\_daily vs. anxiety

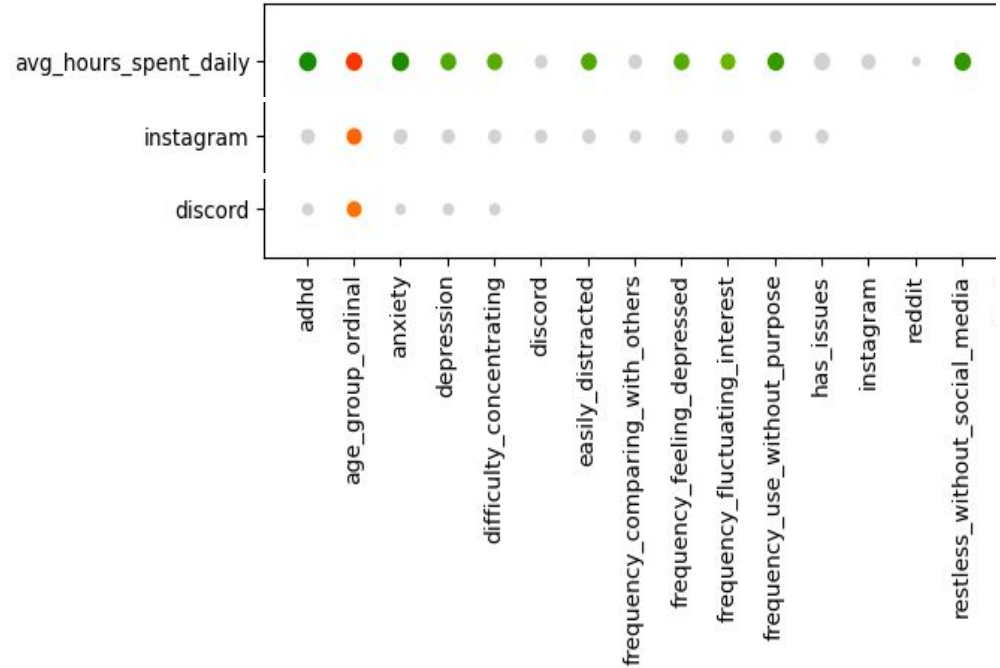


Bar Plot: average\_hours\_spent\_daily vs. adhd



# Discoveries

- How much matters more than what
- Time on socials correlates with:
  - Anxiety
  - ADHD
  - Restlessness



# Summary

- Does Social Media usage affect Mental Health?
- Cleaned, Adapted and Analysed Data to discover patterns
- Tested interesting relationships for significance
- Spending long time on Social Media is associated with Anxiety, ADHD and restlessness

# Conclusions

## Research question:

How does social media impact mental health, including self-esteem, anxiety, and depression?

# Conclusions

- Valuable insights into the dynamics of Social Media and Mental Health
- Time spent on Social Media has a **significant relationship** with Mental Health conditions
- Correlation is not causation: caution with the blame game
- Do people with Health Conditions use more Social Media?  
Do Social Media cause Health Conditions?  
Or is there any additional variable at play?





# Future directions

- **Wider and more varied sample:**
  - many young individuals studying at university
  - more that 99% being social media users.
- **Longitudinal studies:** analyse long-term effect of usage or withdrawal from socials
- **Qualitative research:** can provide a richer understanding and ideas for further research
- **Cross-cultural studies:** exploring cultural variations that can provide meaningful insights



# Questions?

## Data Analytics

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ReDI School of  
Digital Integration

# Thank you!

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