Social media and Productivity

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GitHub: https://github.com/sahil19883/social-media-productivity

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1. Introduction

Social media has a tremendous influence on our lives, as it helps people communicate and work together; to influence their opinion and determine their behavior as customers. Digital habits have become part of our everyday routine with the manifestation of remote working, particularly after the pandemic. Although social networks, including Instagram, Telegram, and Tik Tok, have a range of positive properties, such as connectivity, creativity, access to information, they may be significant agents of distractions and stress.

This is what we research in this project: the correlation between the use of social media and productivity, stress, sleep and job satisfaction. The presented report is grounded in the simulated dataset that represents digital behavior of 30,000 people. The aim is to reveal the trends that may lead people and organizations to the sphere of healthy digital practices benefiting performance and wellbeing.

2. Dataset Information

- **Source:** Kaggle
- **Dataset Title:** Social Media vs Productivity
- **Size:** 30,000 records, 19 columns
- **Type:** Simulated behavioral and productivity data

Key Features:

- **Demographics:** Age, gender, job type
- **Usage Habits:** Daily social media time, screen time before bed, number of notifications
- **Wellbeing Factors:** Sleep hours, burnout days, stress level
- **Tools Used:** Focus apps, digital wellbeing enabled
- **Outcomes:** Actual productivity, perceived productivity, job satisfaction

This dataset provides a comprehensive view of how digital behaviors influence mental and physical wellbeing, as well as work-related performance.

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3. Intention and Objectives

The primary goal of the present project includes the discussion of how the use of social media might affect productivity. As well as quantifying the connection between the use of screens and the efficiency of work, we want to know how digital wellbeing tools, burnout and attention-enhancing activities were involved.

Specific Goals:

• Compare the correlation between social media and productivity Review the impact of the exposure to screen in front of bedtime-on-sleep quality and satisfaction

• Assess the usefulness of focus apps and digital well being solutions

• Learn the impact of stress and burnout on the results of productivity

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4. Research Questions

To achieve our objectives, we framed five central research questions:

1. **How does daily social media usage impact actual and perceived productivity?**
2. **Do users of focus apps and digital wellbeing features perform better or experience less stress?**
3. **How does screen time before sleep affect total sleep hours and job satisfaction?**
4. **Which social platforms are most associated with lower productivity or higher stress levels?**

5.Indicators and KPIs

We came up with a few Key Performance Indicators (KPIs) in order to address the research questions:

KPI Description

Burnout Rate Per cent of users with >15 burnout days / month Avg.

Work Hours per Day The average number of hours worked a day, which can be used to determine the trends of overworking

Before Bed Screen Time Hours of using screens before sleep, the factor that influences the quality of sleep and satisfaction with it

Focus App Usage Rate The rate of usage of focus-enhancing tools

Productivity Gap between the perceived productivity and the actual productivity

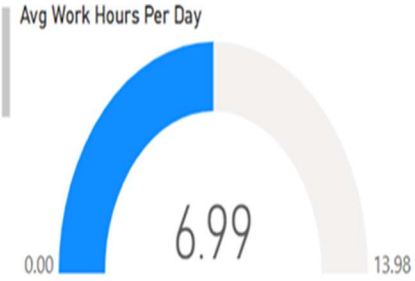
Power BI was used to visualize these metrics and find patterns in productivity, stress and digital discipline.

SOCIAL MEDIA & PRODUCTIVITY DASHBOARD

50
Burnout Rate (%)

4.94
Average Actual Productivity Score

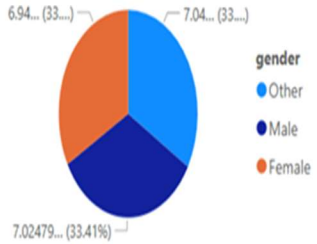
1.03
Average Screen Time Before Sleep



Average Screen time among different age groups with different platform preference

social_platform_preference	18-24	25-34	35-44	45-54	55-64	65+
Facebook	0.99	1.01	0.99	1.02	1.04	1.06
Instagram	1.06	0.98	1.03	1.00	1.01	1.16
Telegram	1.00	1.00	1.05	1.06	1.02	1.19
TikTok	1.05	1.02	1.05	1.02	1.03	1.02
Twitter	1.01	1.05	1.02	1.03	1.03	1.04

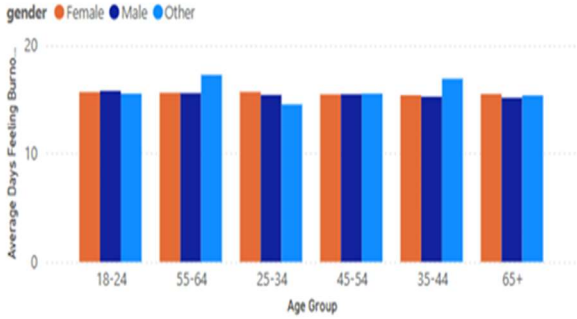
Avg Work Hours Per Day by gender



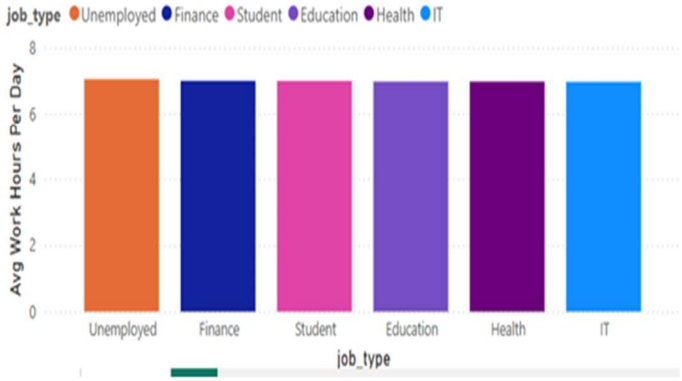
Burnout days across different job types for different stress levels

job_type	High	Low	Moderate
Education	15.35	15.14	15.24
Finance	15.50	15.55	15.99
Health	16.00	15.14	15.37
IT	15.25	16.36	15.60
Student	15.32	15.60	15.73
Unemployed	15.65	15.21	15.83

Average Days Feeling Burnout Per Month by Age Group and gender



Avg Work Hours Per Day by job_type and job_type



6. Data Modeling

In Power BI, we applied a star schema model to organize the data and prepare it in a convenient form for analysis.

• Fact Productivity: It has actual productivity, perceived productivity, the rate of stress, days of burnout, job satisfaction, hours of sleep

Dimension Tables:

• Dim User: Age, gender, type of job

• Dim Behavior: usage of social media, daily screen management before bedtime, notifications

• Dim Tools: Employment of focus apps, digital wellbeing state

• Dim Health: Coffee drinks, sleep time, burnout days

• Graduated Technophobe: Favourite social media network Each of the tables was connected together with the help of a unique user ID and the model itself was normalised to third normal form (3NF) to maintain reduced redundancy.

7.Methodology

Data Preparation:

• Null Values: It was processed by deleting null values or by mean imputation Categorical

Encoding: Encoding gender, platform preference and job type as numeric

• Outliers: Screen time > 12 hours /day was removed

• Power BI Model: It was developed using the star schema making it more performant

Tools Used:

Visualization and dashboard

Power BI Excel: First cleaning and KPI calculation

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8. Discussion and Results

1. The SMT and Productivity Individuals with at least 4 hours per day spent on social media were found with 25-30 percent lower productivity rating. The more the screen time the less actual productivity there was a direct correlation.

2. Users in focus app score higher The productivity scores of users, who turned on focus apps and digital wellbeing features, increased by 1015 percent, and stress reduced. These tools assisted the users to focus and reduce distraction.

3. Pre-sleep Screen Time are known to have an effect within the Sleep Process An average of 1.3 less hours of sleep was the outcome of being exposed to the screen past 2 hours before bed. They (this group) were also less satisfied with their job (median 5.1/10 on job satisfaction survey compared with 6.7/10 of the low screen users).

4. The difference of stress over platforms.

• An increased stress and reduced productivity was noticed among TikTok and Instagram users

• User of telegram and LinkedIn slept better, experienced less burn out and more job satisfaction

5. Burnout Trends Highest burnout scores and worst productivity ratings were recorded to those individuals who got more than 80 notifications/day, with no focus tools, and with more than 10 hours of work per day.

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9. Dashboard Overview

Our power BI dashboard contains the following graphical insight:

• Bar Graph: Socializing time Vs Productivity

• Line Graph: Hours of sleep vs screen time before the bed

• Pie Chart: Emphasis use of focus app by users

• Column Chart: Preference of the platform against the level of stress

Heatmap Burnout days offense type and age group

Interactive age-group, job-type or platform filtering on these dashboards is possible to identify subtle behavioral patterns.

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10. Conclusion

Conclusion This paper points out that there are so many implications of use of social media on productivity of the working people, stress and job satisfaction. We analyzed a big sample and discovered that not only heavy use of social media but also the presence of it right before bed and working time reduces productivity and causes elevated stress. Nevertheless, with the assistance of digital well-being technology and concentration programs, these adverse impacts will be alleviated, resulting in stronger job and life balance and enhanced job satisfaction.

Finally, responsible and conscientious management of technology, along with healthy digital lifestyle is key to be productive and stay healthy in the modern connected world. Our results will promote data-based approaches to healthier and more successful working conditions among individuals and organizations.