Social Media & Productivity : A PowerBI Dashboard Project

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Abstract

This project explores the relationship between social media usage and productivity among working individuals using a comprehensive dataset sourced from Kaggle. With rising concerns about digital distractions, mental health, and work-life imbalance, the study analyzes how factors such as daily social media time, screen exposure before sleep, stress levels, and job types contribute to productivity outcomes and burnout. By leveraging key performance indicators and data visualization techniques, we identify behavioral patterns and digital habits that significantly impact perceived and actual productivity. The findings highlight the importance of digital wellbeing practices and offer insights for individuals and organizations to foster healthier and more productive lifestyles.

Introduction

In the digital age, social media has become an integral part of daily life, influencing how individuals connect, consume information, and manage their time. While these platforms offer numerous benefits, they also pose challenges—particularly in the workplace. Distractions, reduced focus, and mental fatigue linked to excessive social media use have raised questions about its effect on personal productivity and overall wellbeing.

This project investigates the relationship between social media behavior and productivity metrics across various job sectors and demographic profiles. Using a publicly available dataset with 30,000 records, we examine key variables such as work hours, stress levels, screen time before sleep, and burnout. The goal is to uncover patterns and draw actionable conclusions about how digital habits affect modern work performance and mental health. By identifying correlations and anomalies, this analysis aims to support data-driven strategies for digital wellbeing and better time management in both personal and professional settings.

Dataset Information

- **Dataset Name**: *Social Media & Productivity*
- **Source**: Kaggle
- **URL**: Social Media vs Productivity Dataset

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- **Size**: 30,000 records | 19 columns

- **Description:**
  This dataset explores how various aspects of social media usage, work habits, and digital wellbeing features influence individuals' productivity, stress levels, and job satisfaction. It contains both self-reported and simulated metrics related to technology use and lifestyle factors.

📃 Key Features Included:

- **Demographics**: `age`, `gender`, `job_type`

- **Usage Patterns**: `daily_social_media_time`, `social_platform_preference`, `number_of_notifications`

- **Work & Lifestyle**: `work_hours_per_day`, `screen_time_before_sleep`, `sleep_hours`, `coffee_consumption_per_day`

- **Productivity & Wellbeing**: `perceived_productivity_score`, `actual_productivity_score`, `Stress_level`, `Days_feeling_burnout_per_month`, `job_satisfaction_score`

- **Digital Wellbeing Tools**: `uses_focus_apps`, `has_digital_wellbeing_enabled`

This rich dataset forms the backbone of our analysis, allowing us to uncover patterns and relationships between digital behavior and workplace performance.

Purpose and Objectives

This project aims to explore and understand how social media usage patterns affect productivity, stress levels, and burnout among working individuals. With digital technology deeply embedded in modern life, this study seeks to analyze the behavioral impact of platforms like Instagram, TikTok, and Telegram on work habits and mental wellbeing.

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Specifically, the goals of this project are to:

- 📈 Analyze the relationship between daily social media usage and both perceived and actual productivity scores.
- 🧩 Identify behavioral patterns that contribute to increased stress levels or a higher number of burnout days per month.
- ⚖️ Highlight digital habits (e.g., screen time before sleep, use of focus apps) that influence job satisfaction and overall work-life balance.
- 🔍 Evaluate key metrics such as burnout rate, screen time, and work hours to draw meaningful insights from the data.
- 💡 Offer data-driven recommendations to encourage responsible technology use and promote better digital wellbeing.

By addressing these goals, the project emphasizes the importance of healthy digital behavior, both at the personal and organizational level, to improve productivity and mental health outcomes.

Key Columns

Column Name	Description
`age`	**Age of the individual (18–65 years)**
`gender`	**Gender identity (Male, Female, Other)**

`job_type`	**Employment sector or status (e.g., IT, Education, Student, etc.)**
`daily_social_media_time`	**Average daily time spent on social media (in hours)**
`social_platform_preference`	**Most-used social media platform (e.g., Instagram, TikTok, Telegram)**
`number_of_notifications`	**Number of mobile or social notifications received per day**
`work_hours_per_day`	**Average number of hours worked each day**
`perceived_productivity_score`	**Self-rated productivity score (scale: 0–10)**
`actual_productivity_score`	**Simulated ground-truth productivity score (scale: 0–10)**
`stress_level`	**Current stress level (scale: 1–10)**
`sleep_hours`	**Average number of sleep hours per night**

`screen_time_before_sleep`	**Time spent on screens before sleep (in hours)**
`breaks_during_work`	**Number of breaks taken during work hours**
`uses_focus_apps`	**Whether the user uses digital focus apps (True/False)**
`has_digital_wellbeing_enabled`	**Whether Digital Wellbeing is enabled on the user's device (True/False)**
`coffee_consumption_per_day`	**Number of cups of coffee consumed per day**
`days_feeling_burnout_per_month`	**Number of burnout days reported per month**
`weekly_offline_hours`	**Total hours spent offline each week (excluding sleep)**
`job_satisfaction_score`	**Satisfaction with job/life responsibilities (scale: 0–10)**

Key Questions

To drive meaningful insights from the dataset and support our analysis, we focused on the following key research questions:

1. **How does daily social media usage impact perceived and actual productivity?**

- Does spending more time on platforms like Instagram or Telegram correlate with lower productivity scores?

2. **What is the relationship between screen time before sleep and stress or burnout levels?**
    - Can late-night screen habits be linked to increased stress or more frequent burnout days?
3. **How do job types and stress levels influence the number of burnout days reported per month?**
    - Are certain employment sectors (e.g., healthcare, unemployed) more vulnerable to burnout regardless of stress level?
4. **Do digital wellbeing tools (e.g., focus apps) improve productivity or reduce stress?**
    - Are users who enable these tools more likely to report higher productivity and satisfaction?
5. **What demographic or behavioral factors correlate most with job satisfaction and work-life balance?**
    - Does age, gender, or break frequency play a role in how individuals feel about their work?

These questions guided the formulation of our KPIs and the structure of our dashboard, ultimately helping us uncover patterns that support digital wellbeing and productivity.

Key Performance Indicators (KPIs) :

To effectively measure the impact of social media usage on productivity and well-being, the following KPIs were identified and analyzed:

1. **Burnout Rate**

- Definition: Percentage of users reporting more than 15 days of burnout per month.

2. **Average Work Hours per Day**
    - Definition: Mean number of hours worked daily across all participants.
3. **Screen Time Before Sleep**
    - Definition: Average number of hours spent on screens before sleeping.
4. **Perceived vs. Actual Productivity Score**
    - Definition: Comparison between self-rated and simulated productivity scores (scale: 0–10).

Data Model

The dataset is structured to explore the relationship between social media usage and productivity, incorporating behavioral, demographic, and psychological variables. It contains 30,000 records and 19 columns, with the following key components:

1. Demographics

- age: Age of the individual (18–65 years)
- gender: Gender identity (Male, Female, Other)
- job_type: Employment sector or status (e.g., IT, Education, Student)

2. Social Media Behavior

- daily_social_media_time: Average daily time spent on social media (in hours)
- social_platform_preference: Most-used platform (e.g., Instagram, TikTok, Telegram)
- number_of_notifications: Number of mobile/social notifications per day

3. Work & Productivity

- work_hours_per_day: Average hours worked each day
- perceived_productivity_score: Self-rated productivity (scale: 0–10)
- actual_productivity_score: Simulated ground-truth productivity (scale: 0–10)

4. Well-being & Lifestyle

- stress_level: Current stress level (scale: 1–10)

- sleep_hours: Average hours of sleep per night
- screen_time_before_sleep: Time spent on screens before sleeping (in hours)
- breaks_during_work: Number of breaks taken during work hours
- coffee_consumption_per_day: Number of coffee cups consumed per day
- days_feeling_burnout_per_month: Number of burnout days reported per month
- weekly_offline_hours: Total hours spent offline each week (excluding sleep)

5. Digital Well-being Tools

- uses_focus_apps: Whether the user uses digital focus apps (True/False)
- has_digital_wellbeing_enabled: Whether Digital Wellbeing is activated (True/False)

6. Satisfaction

- job_satisfaction_score: Satisfaction with job/life responsibilities (scale: 0–10)

📊 Charts & Dashboard

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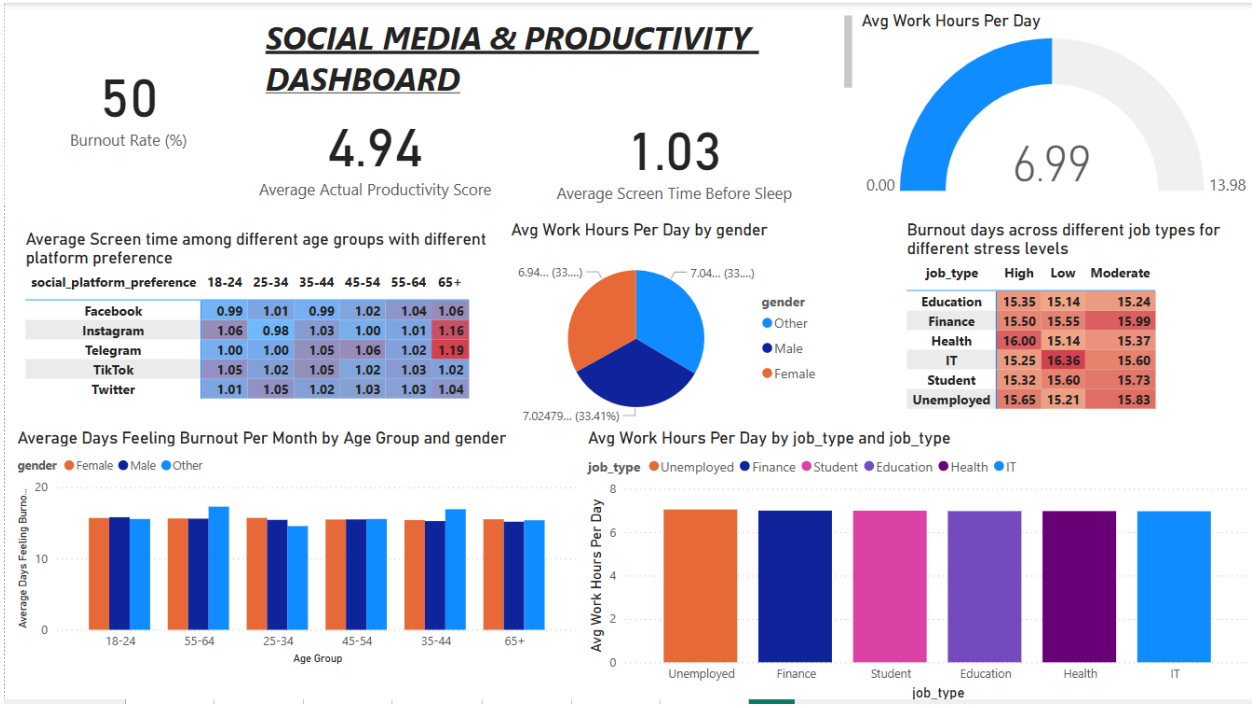

The dashboard visualizations are designed to highlight key behavioral patterns and correlations:

1. Burnout Rate

- Metric: % of users reporting more than 15 days of burnout per month.
- Insight: Burnout rate is 50%, especially high among unemployed and health sector workers, regardless of stress level.

2. Average Work Hours

- Metric: Mean number of hours worked per day.
- Insight: Work hours show slight variation by gender and job type, but moderate-to-high levels are consistently linked to burnout.

3. Screen Time Before Sleep

- Metric: Average hours spent on screens before sleeping.
- Insight: Average is 1.03 hours. Higher screen time correlates with reduced sleep quality and increased stress, especially among older users on Telegram and Instagram.

4. Stress vs. Productivity

- Insight: Elevated stress levels are associated with lower actual productivity scores, even when perceived productivity remains high.

5. Digital Well-being Tools

- Insight: Users who enable digital wellbeing features or use focus apps report higher productivity and lower stress.

Conclusion

The analysis of the Social Media & Productivity dataset reveals several critical insights:

- Burnout is a widespread issue, with half of the users reporting significant burnout, especially in vulnerable job sectors.
- Screen time before sleep and notification overload are key contributors to stress and reduced sleep quality.
- Work hours, while not drastically different across groups, show a strong correlation with burnout when sustained at moderate-to-high levels.
- Digital wellbeing tools and offline time are positively associated with better mental health and productivity.
- The findings emphasize the importance of responsible technology use, work-life balance, and platform moderation to enhance overall well-being.

Note to Readers

This article represents the current state of the Social Media & Productivity dashboard project. However, it is a work in progress. Further edits, refinements, and feature expansions will be documented and published in future updates. Readers and contributors are encouraged to revisit this article for the latest developments and improvements.