Data Visualization Portfolio – Employee Wellbeing & Productivity

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Project Objective

The goal of this project is to explore how employee wellbeing factors—such as work hours, sleep, exercise, diet, and remote work status—affect productivity levels. The analysis was performed using Python's data visualization tools, transforming raw data into actionable insights.

Dataset Overview

- **Filename:** employee_wellbeing_productivity.csv
- **Records:** 10 employees (sample dataset)
- **Features:**
    - Work hours per day
    - Productivity score
    - Gender
    - Remote work status
    - Sleep hours
    - Exercise frequency
    - Diet quality

Tools & Technologies

- **Python**
    - Data handling and analysis
- **Pandas**
    - Data manipulation and cleaning
- **Seaborn & Matplotlib**
    - Visualization and plotting

Visualizations & Insights Histogram Plots

Work Hours Per Day Distribution

- Most employees work between 5-9 hours daily.

Productivity Score Distribution

- Productivity scores range widely, revealing potential performance differences across individuals.

Correlation Analysis Correlation Heatmap

- Work hours show a moderate correlation with productivity.
- Sleep hours and exercise frequency appear to influence productivity positively but modestly.

Scatter Plot

Work Hours vs. Productivity Score

- Indicates a slight positive relationship between hours worked and productivity.
- Gender-based differences are visible but minimal in this small sample.

Boxplot

Productivity by Remote Work Status

- Employees working remotely tend to have slightly higher productivity scores in this dataset.

Bar Plot

Average Productivity by Diet Quality

- Employees reporting a “Good” diet tend to have higher average productivity scores.
- “Poor” diet quality is associated with lower scores.

Pairplot

Pairwise Relationships

- Displays relationships between:
    - Work hours
    - Sleep hours
    - Exercise frequency
    - Productivity score
- Highlights how balanced habits often coincide with better productivity outcomes.

Key Learnings & Conclusions

- Balanced work hours, good diet, and healthy lifestyle factors correlate with higher productivity.
- Remote work may positively influence employee performance.
- Visualization is powerful for revealing patterns not obvious from raw numbers.

Next Steps

- Expand analysis to a larger dataset for more robust insights.
- Explore interactive dashboards using Power BI or Tableau.
- Build predictive models to forecast employee productivity based on lifestyle factors.
- Publish findings on:
    - LinkedIn
    - GitHub
    - Personal portfolio website

Thank You!

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