**Sleep Health and Lifestyle**

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**Introduction**

**Introduce dataset**

The Sleep Health and Lifestyle Dataset examines the relationship of various factors that may affect sleep quality and duration. It covers a wide range of variables related to sleep patterns and daily habits, providing a comprehensive overview on how lifestyle habits may impact sleep health.

The dataset was synthetically collected from Kaggle user, Laksika Tharmalingam, for illustrative purposes.

The Sleep Health and Lifestyle dataset was chosen for its relevance in everyday life and the desire to recognize sleep patterns. By analyzing various factors that may influence sleep, researchers explore the relationship between daily habits and the importance of maintaining a healthy lifestyle.

**Research questions**

1. Is there significant difference in mean sleep duration among the four occupation categories? Use 0.05 significance level. (One-way ANOVA)
2. Is there a significant difference in mean Sleep Duration between Gender and the Physical Activity groups, is there a significant difference between Gender and Physical Activity group? (Two-way ANOVA)
   1. What are the main effects of Gender and Physical Activity on Sleep Duration, and is there a significant interaction between Gender and Physical Activity?

**Variables tested**

**Sleep patterns:** These metrics explore sleep duration, sleep quality, and other factors that may affect sleep patterns.

|  |  |  |
| --- | --- | --- |
| Sleep Duration (hours) | Continuous Numeric | The number of hours the individual sleeps per day |

**Lifestyle habits:** These metrics analyze physical activity, stress levels, and BMI category.

|  |  |  |
| --- | --- | --- |
| Physical Activity (minutes) | Discrete Numeric converted to Nominal Categorical | The number of minutes the individual engages in physical activity per day |
| Occupation | Nominal Categorical | Profession of the individual |

**Other tested variables:**

|  |  |  |
| --- | --- | --- |
| Gender | Nominal Categorical  Two levels: Male, Female | Sex of individual |

**Hypothesis**

**One-way ANOVA analysis**

At least two ’s are different

**Two-way ANOVA analysis**

Main effect of Gender

Main effect of Physical Activity (recommend 30ish minutes)

30-50 (Low), 55-75 (Median), 75+ (High)

Main effect of interaction

There is no interaction between Gender and Physical Activity

: There is an interaction between Gender and Physical Activity

**Methods**

**Conclusion**