**What is the habit that affects the most on the studying hours**

**What is the habit that affects the most on the academic performance**

**Individual Variable Hypothesis Tests**

**1. Study Hours vs Exam Score**

* **H₀**: No significant correlation between study hours per day and exam scores.
* **H₁**: More study hours per day are significantly associated with higher exam scores.
* **Test**: Pearson or Spearman correlation.

**2. Social Media Usage vs Exam Score**

* **H₀**: No significant relationship between social media usage and exam scores.
* **H₁**: Higher social media usage is significantly associated with lower exam scores.
* **Test**: Pearson or Spearman correlation.

**3. Netflix Hours vs Exam Score**

* **H₀**: Netflix hours have no significant impact on exam scores.
* **H₁**: More Netflix hours are significantly associated with lower exam scores.
* **Test**: Pearson or Spearman correlation.

**4. Sleep Hours vs Exam Score**

* **H₀**: No correlation between sleep hours and exam scores.
* **H₁**: Sleep hours are positively associated with exam scores (to an optimal point).
* **Test**: Pearson or Spearman correlation.

**5. Attendance % vs Exam Score**

* **H₀**: No significant relationship between attendance percentage and exam scores.
* **H₁**: Higher attendance percentage is significantly associated with higher exam scores.
* **Test**: Pearson correlation.

**6. Exercise Frequency vs Exam Score**

* **H₀**: No significant relationship between exercise frequency and exam scores.
* **H₁**: More frequent exercise is significantly associated with higher exam scores.
* **Test**: Pearson or Spearman correlation.

**7. Mental Health Rating vs Exam Score**

* **H₀**: No correlation between mental health rating and exam score.
* **H₁**: Better mental health is significantly associated with higher exam scores.
* **Test**: Pearson or Spearman correlation.

**8. Part-Time Job vs Exam Score**

* **H₀**: Exam scores do not differ based on having a part-time job.
* **H₁**: Having a part-time job significantly affects exam scores.
* **Test**: Independent samples t-test or Mann-Whitney U test.

**9. Gender vs Exam Score**

* **H₀**: No difference in exam scores between genders.
* **H₁**: Exam scores significantly differ by gender.
* **Test**: Independent samples t-test or Mann-Whitney U test.

**10. Diet Quality vs Exam Score**

* **H₀**: Diet quality has no effect on exam scores.
* **H₁**: Better diet quality is associated with higher exam scores.
* **Test**: ANOVA or Kruskal-Wallis test (if more than 2 levels).

**11. Parental Education Level vs Exam Score**

* **H₀**: Parental education level does not impact student exam scores.
* **H₁**: Higher parental education is associated with higher exam scores.
* **Test**: ANOVA or Kruskal-Wallis test.

**12. Internet Quality vs Exam Score**

* **H₀**: Internet quality has no significant effect on exam scores.
* **H₁**: Better internet quality is significantly associated with higher scores.
* **Test**: ANOVA or Kruskal-Wallis test.

**13. Extracurricular Participation vs Exam Score**

* **H₀**: Participation in extracurriculars does not affect exam scores.
* **H₁**: Participation in extracurriculars is associated with higher scores.
* **Test**: Independent samples t-test.

**14. Age vs Exam Score**

* **H₀**: Age has no correlation with exam scores.
* **H₁**: There is a significant relationship between age and exam scores.
* **Test**: Pearson or Spearman correlation.

**15. Internet Quality vs Study Hours**

* **H₀**: Internet quality does not influence study hours.
* **H₁**: Better internet quality leads to significantly more study hours.
* **Test**: ANOVA or Kruskal-Wallis test.

**16. Part-Time Job vs Study Hours**

* **H₀**: Part-time jobs do not affect study hours.
* **H₁**: Having a part-time job significantly reduces study hours.
* **Test**: Independent samples t-test or Mann-Whitney U test.

**17. Gender vs Study Hours**

* **H₀**: No difference in study hours between genders.
* **H₁**: Study hours significantly differ by gender.
* **Test**: Independent samples t-test.

**18. Parental Education vs Study Hours**

* **H₀**: Parental education has no effect on study hours.
* **H₁**: Higher parental education is associated with more study hours.
* **Test**: ANOVA.

**19. Diet Quality vs Study Hours**

* **H₀**: Diet quality has no effect on study hours.
* **H₁**: Better diet quality is associated with more study hours.
* **Test**: ANOVA.

**20. Exercise Frequency vs Mental Health**

* **H₀**: Exercise frequency has no effect on mental health rating.
* **H₁**: More exercise is significantly associated with better mental health.
* **Test**: ANOVA.

**21. Sleep Hours vs Mental Health**

* **H₀**: No significant correlation between sleep hours and mental health.
* **H₁**: More sleep is associated with better mental health.
* **Test**: Pearson or Spearman correlation.

**22. Social Media Hours vs Mental Health**

* **H₀**: Social media hours have no correlation with mental health.
* **H₁**: More social media usage is associated with worse mental health.
* **Test**: Pearson or Spearman correlation.

**23. Netflix Hours vs Mental Health**

* **H₀**: Netflix hours have no effect on mental health.
* **H₁**: Higher Netflix usage is associated with lower mental health rating.
* **Test**: Pearson or Spearman correlation.

**24. Attendance % vs Mental Health**

* **H₀**: No correlation between attendance percentage and mental health.
* **H₁**: Higher attendance is associated with better mental health.
* **Test**: Pearson correlation.

**25. Extracurricular Participation vs Mental Health**

* **H₀**: Extracurriculars have no effect on mental health.
* **H₁**: Participating in extracurriculars improves mental health.
* **Test**: Independent samples t-test.

**Combined Variable Hypothesis Tests**

**1. Study Hours + Internet Quality vs Exam Score**

* **H₀**: Internet quality does not moderate the effect of study hours on exam scores.
* **H₁**: Better internet amplifies the positive effect of study hours.
* **Test**: Multiple Linear Regression with interaction term.

**2. Sleep Hours + Mental Health vs Exam Score**

* **H₀**: No combined effect of sleep and mental health on exam scores.
* **H₁**: Sleep and mental health together significantly predict exam scores.
* **Test**: Multiple regression / mediation analysis.

**3. Diet Quality + Exercise Frequency vs Exam Score**

* **H₀**: Healthy habits do not affect exam scores.
* **H₁**: Good diet and regular exercise together positively impact scores.
* **Test**: Two-way ANOVA or Multiple Regression.

**4. Study Hours + Social Media Hours vs Exam Score**

* **H₀**: Social media does not moderate the effect of study hours.
* **H₁**: High social media usage reduces the benefit of study hours.
* **Test**: Multiple regression with interaction.

**5. Gender + Study Hours vs Exam Score**

* **H₀**: Gender does not influence the effect of study hours.
* **H₁**: The impact of study hours differs by gender.
* **Test**: Two-way ANOVA.

**6. Attendance + Part-Time Job vs Exam Score**

* **H₀**: Part-time job and attendance do not jointly influence exam scores.
* **H₁**: Part-time jobs reduce the benefit of high attendance.
* **Test**: Two-way ANOVA or regression with interaction.

**7. Parental Education + Study Hours vs Exam Score**

* **H₀**: Parental education does not influence the benefit of study hours.
* **H₁**: Higher parental education amplifies the effect of study hours.
* **Test**: Faceted regression / two-way ANOVA.

**8. Netflix + Social Media Hours vs Exam Score**

* **H₀**: Combined screen time has no effect on scores.
* **H₁**: High combined screen time reduces exam performance.
* **Test**: Multiple regression.

**9. Mental Health + Gender vs Exam Score**

* **H₀**: Mental health effect is the same across genders.
* **H₁**: Gender moderates the effect of mental health on scores.
* **Test**: Two-way ANOVA or interaction regression.

**10. Sleep + Exercise vs Mental Health**

* **H₀**: Sleep and exercise do not significantly influence mental health.
* **H₁**: Sleep and exercise both improve mental health independently or together.
* **Test**: Multiple regression or two-way ANOVA.

**Hypothesis Testing Summary for Educational Performance Study**

**Individual Variable Hypothesis Tests (25 Tests)**

| **#** | **Variables** | **Null Hypothesis (H₀)** | **Alternative Hypothesis (H₁)** | **Statistical Test** |
| --- | --- | --- | --- | --- |
| 1 | Study Hours vs Exam Score | No correlation | Positive correlation | Pearson/Spearman Correlation |
| 2 | Social Media vs Exam Score | No correlation | Negative correlation | Pearson/Spearman Correlation |
| 3 | Netflix vs Exam Score | No correlation | Negative correlation | Pearson/Spearman Correlation |
| 4 | Sleep Hours vs Exam Score | No correlation | Positive correlation | Pearson/Spearman Correlation |
| 5 | Attendance % vs Exam Score | No correlation | Positive correlation | Pearson Correlation |
| 6 | Exercise vs Exam Score | No correlation | Positive correlation | Pearson/Spearman Correlation |
| 7 | Mental Health vs Exam Score | No correlation | Positive correlation | Pearson/Spearman Correlation |
| 8 | Part-Time Job vs Exam Score | No difference | Significant difference | T-test / Mann-Whitney U |
| 9 | Gender vs Exam Score | No difference | Significant difference | T-test / Mann-Whitney U |
| 10 | Diet Quality vs Exam Score | No effect | Positive effect | ANOVA / Kruskal-Wallis |
| 11 | Parental Education vs Exam Score | No effect | Positive effect | ANOVA / Kruskal-Wallis |
| 12 | Internet Quality vs Exam Score | No effect | Positive effect | ANOVA / Kruskal-Wallis |
| 13 | Extracurricular vs Exam Score | No effect | Positive effect | T-test |
| 14 | Age vs Exam Score | No correlation | Significant correlation | Pearson/Spearman Correlation |
| 15 | Internet Quality vs Study Hours | No effect | Positive effect | ANOVA / Kruskal-Wallis |
| 16 | Part-Time Job vs Study Hours | No effect | Reduced hours | T-test / Mann-Whitney U |
| 17 | Gender vs Study Hours | No difference | Significant difference | T-test |
| 18 | Parental Education vs Study Hours | No effect | Positive effect | ANOVA |
| 19 | Diet Quality vs Study Hours | No effect | Positive effect | ANOVA |
| 20 | Exercise vs Mental Health | No effect | Positive effect | ANOVA |
| 21 | Sleep Hours vs Mental Health | No correlation | Positive correlation | Pearson/Spearman Correlation |
| 22 | Social Media vs Mental Health | No correlation | Negative correlation | Pearson/Spearman Correlation |
| 23 | Netflix vs Mental Health | No correlation | Negative correlation | Pearson/Spearman Correlation |
| 24 | Attendance vs Mental Health | No correlation | Positive correlation | Pearson Correlation |
| 25 | Extracurricular vs Mental Health | No effect | Positive effect | T-test |

**Combined Variable Hypothesis Tests (10 Tests)**

| **#** | **Variables** | **Null Hypothesis (H₀)** | **Alternative Hypothesis (H₁)** | **Statistical Test** |
| --- | --- | --- | --- | --- |
| 1 | Study Hours + Internet vs Exam Score | No moderation | Internet improves study effect | Multiple Regression (Interaction) |
| 2 | Sleep + Mental Health vs Exam Score | No combined effect | Both improve score | Regression / Mediation Analysis |
| 3 | Diet + Exercise vs Exam Score | No effect | Positive combined effect | Two-Way ANOVA / Regression |
| 4 | Study Hours + Social Media vs Exam Score | No moderation | Social media offsets studying | Regression (Interaction) |
| 5 | Gender + Study Hours vs Exam Score | No interaction | Gender moderates study effect | Two-Way ANOVA |
| 6 | Attendance + Job vs Exam Score | No interaction | Job reduces attendance benefit | Two-Way ANOVA / Regression |
| 7 | Parental Education + Study Hours vs Exam Score | No interaction | Education enhances study effect | Faceted Regression / ANOVA |
| 8 | Netflix + Social Media vs Exam Score | No effect | Negative combined effect | Multiple Regression |
| 9 | Mental Health + Gender vs Exam Score | No interaction | Gender moderates mental health effect | Two-Way ANOVA / Regression |
| 10 | Sleep + Exercise vs Mental Health | No effect | Positive combined effect | Regression / Two-Way ANOVA |