The Effect Of Screen Time On Academic Performance

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Introduction

In today's digital age, screens are an ever-present part of our lives. From smartphones to tablets, computers to televisions, we're constantly surrounded by screens. But have you ever stopped to consider the impact of all this screen time on academic performance? In this report, we'll delve into the fascinating world of screen time and its effects on academic success.

Research Question

How does screen time affect academic performance among students?

Hypothesis

I hypothesize that excessive screen time negatively impacts academic performance among students, as it can lead to decreased concentration and reduced time spent on academic tasks. Less time spent on academic tasks would then negatively impact the CGPA.

Population of Interest:

The population of interest for this research would likely be college students, as they are the group we are targeting with the Google Form survey.

Sampling Method:

The sampling method used here is convenience sampling. Basically, I reached out to my college colleagues and asked them to fill out the Google Form survey. They were the most accessible and convenient group for me to survey, so that's why I chose them.

Bias Identification:

1. Social Fear Bias: Respondents may provide answers they believe are socially acceptable or favourable, potentially skewing the results.
2. Selection Bias: The survey is limited to college colleagues, excluding diverse perspectives and experiences from the broader student population.
3. Respondents Bias: Participants may inaccurately report their screen time or academic performance due to memory lapses, misunderstandings, or other factors, leading to biased results.

Survey Questions:

[How many hours per day do you spend on your phone?]

[What activities do you primarily engage in on your phone?]

[On average, how many hours per day do you spend studying or doing homework?]

[How often do you check your phone during study sessions?]
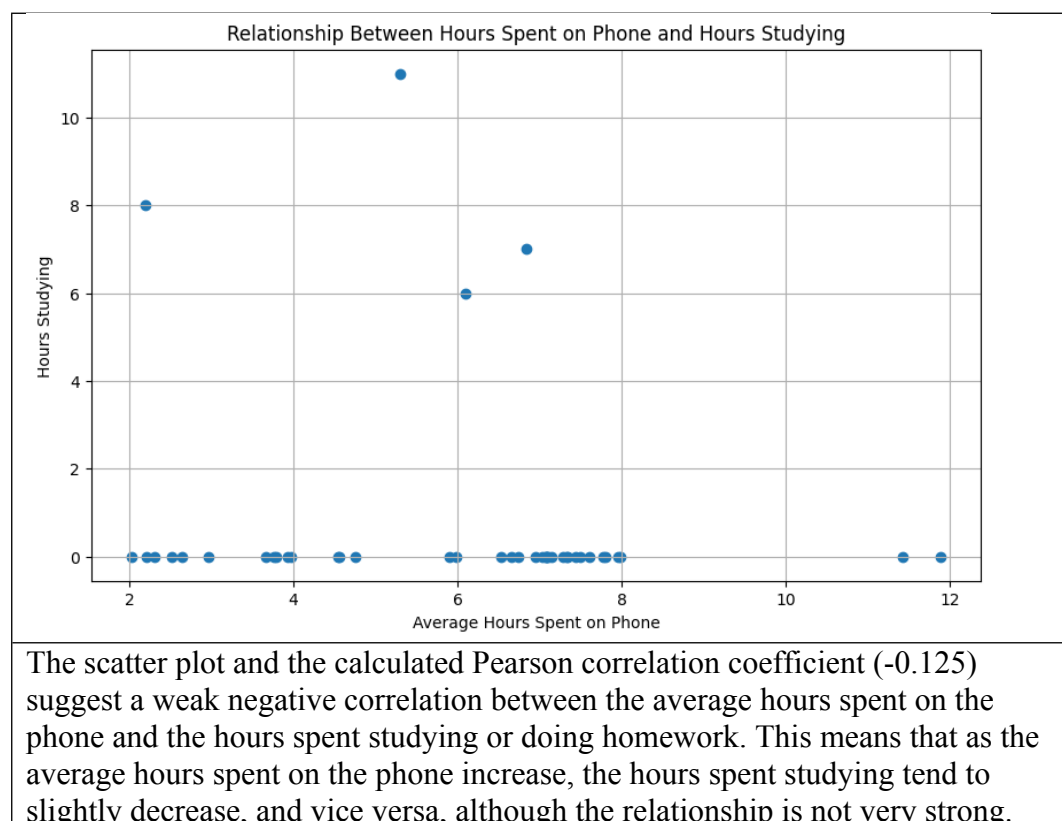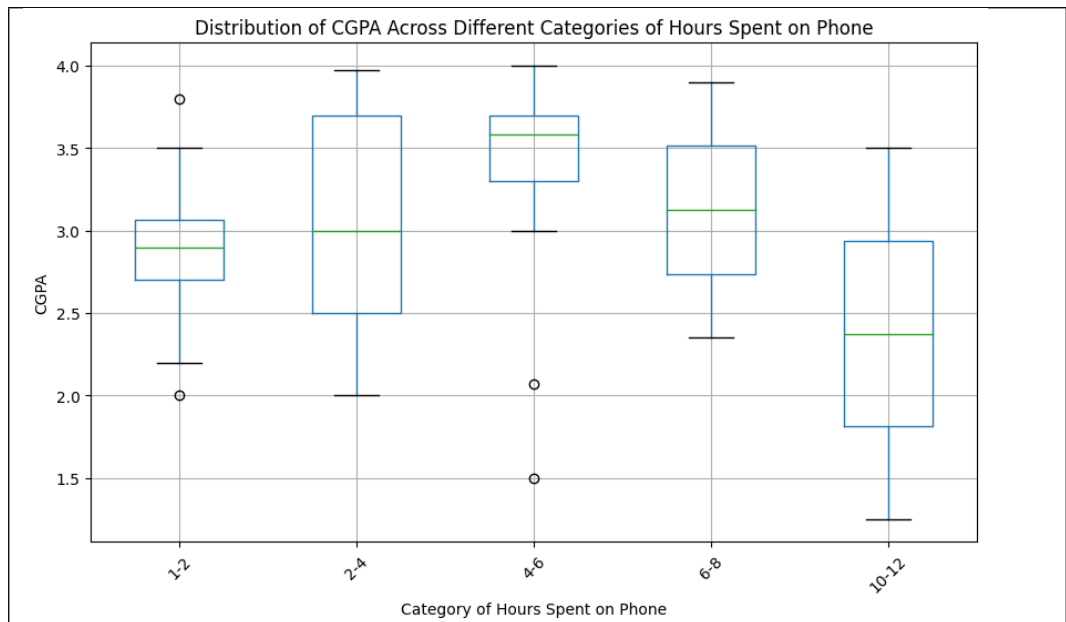
[What is your CGPA?]

Online survey link: https://forms.gle/2o4zyhJqUfg8CGBo8

Number of samples collected: 42

Analysis:

To analyze the data collected from this survey, we will calculate basic descriptive statistics such as the mean, median, and mode.

We will also create visual representations of the data using charts and graphs to help identify any trends or patterns.

The scatter plot and the calculated Pearson correlation coefficient (-0.125) suggest a weak negative correlation between the average hours spent on the phone and the hours spent studying or doing homework. This means that as the average hours spent on the phone increase, the hours spent studying tend to slightly decrease, and vice versa, although the relationship is not very strong.

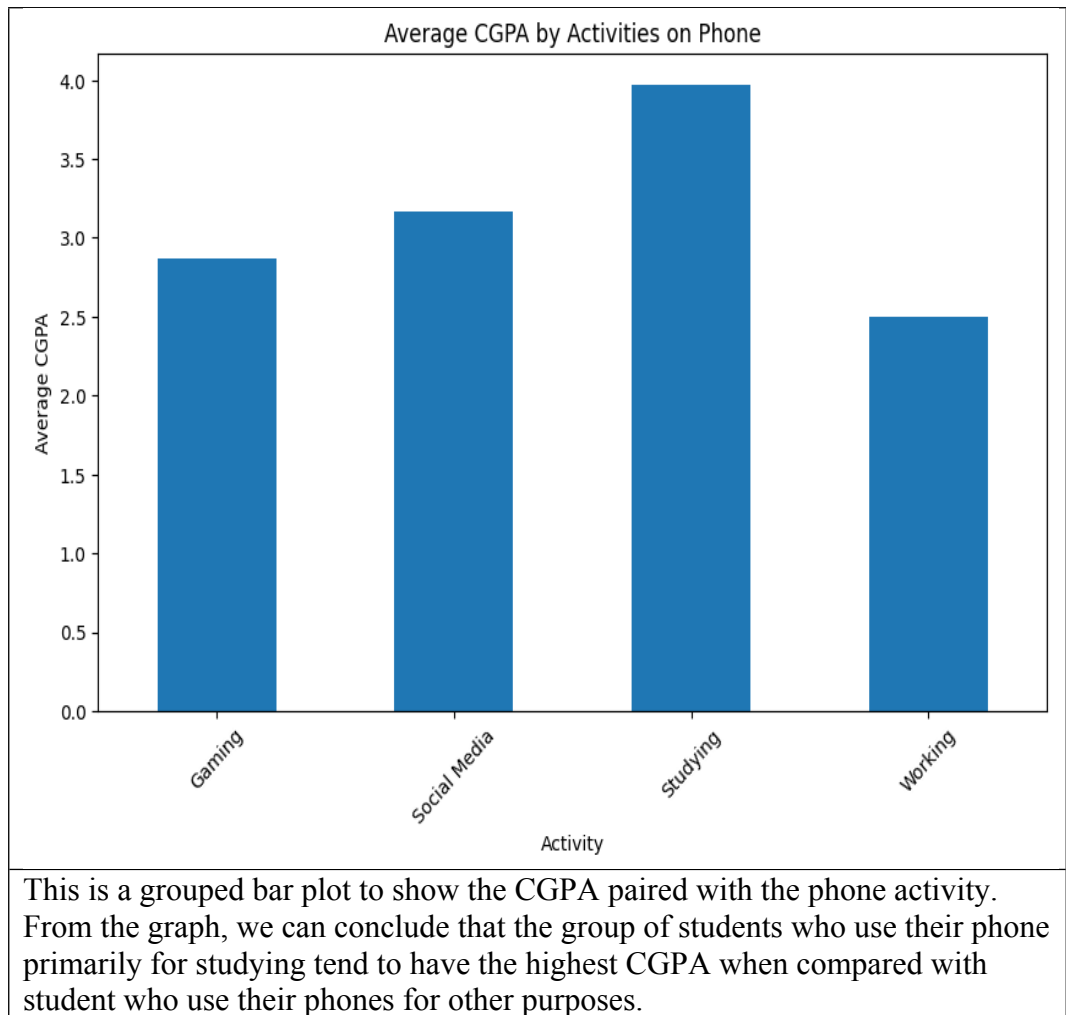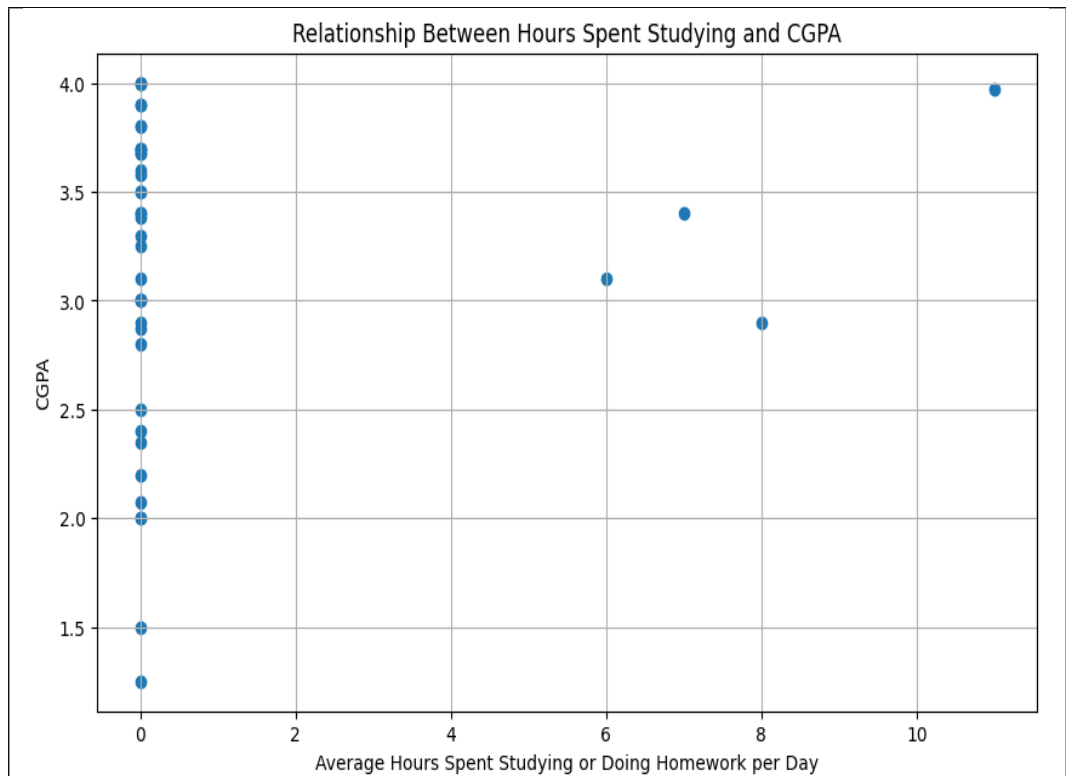Distribution of CGPA Across Different Categories of Hours Spent on Phone

By comparing the distributions of CGPA across categories, we can infer that there is a noticeable difference in academic performance based on the amount of time spent on the phone. The median CGPA tends to decreases, starting from the 4-6 range till the end which where most of the data lies, as the hours spent on the phone increase, it suggests a negative correlation between phone usage and academic performance.

Frequency of Activities on Phone
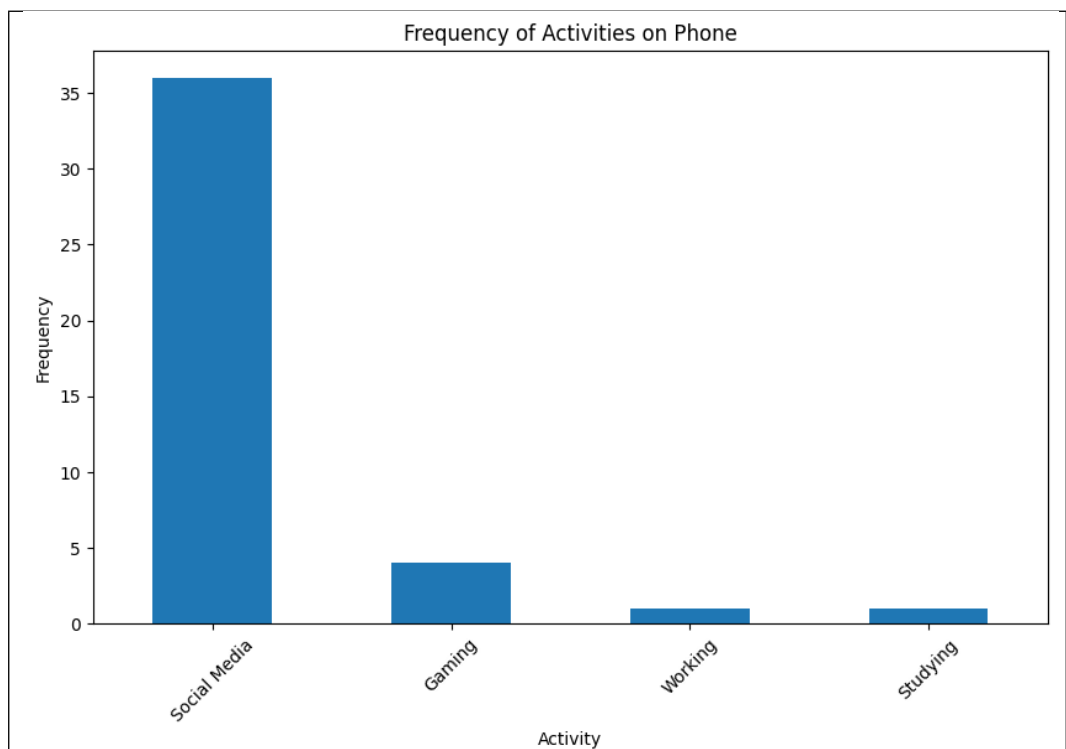
From this bar plot we can conclude that most of the sample used are using their phones primarily for social media which is a time waster.

Average CGPA by Activities on Phone

This is a grouped bar plot to show the CGPA paired with the phone activity. From the graph, we can conclude that the group of students who use their phone primarily for studying tend to have the highest CGPA when compared with student who use their phones for other purposes.

Relationship Between Hours Spent Studying and CGPA

Pearson Correlation Coefficient: 0.12239837644442822

Since the correlation coefficient is close to 0.122, it suggests a weak positive correlation between the average hours spent studying or doing homework and CGPA. This means that as the average hours spent studying increases, there is a slight tendency for the CGPA to increase as well, but the relationship is weak.

Relationship Between Hours Spent on Phone and CGPA

Pearson Correlation Coefficient: 0.08406530327470073

From a Pearson correlation coefficient of 0.084, we can conclude that there is a very weak positive correlation between the hours spent on the phone per day and the CGPA. However, since the correlation coefficient is close to zero, it indicates that the relationship between these two variables is negligible or very weak. Therefore, based on this analysis alone, we cannot draw a strong conclusion about the impact of phone usage on academic performance. Other factors may have a more significant influence on CGPA.

Conclusion

In conclusion, while both hours spent on the phone and hours spent studying show weak positive correlations with CGPA, it's essential to interpret these findings cautiously. Also, as the doctor mentioned several time, correlation does not imply causation, and there may be other factors at play influencing academic performance. Further research and analysis, considering potential confounding variables, would be necessary to draw more definitive conclusions about the relationship between screen time, study habits, and academic success.

Any potential issues

The 2 main issues were:
1. **Confounding Variables**: Factors such as socioeconomic status, sleep quality, extracurricular activities, and personal motivation could confound the relationship between our variables. Failure to account for these confounding variables could lead to erroneous conclusions regarding both the hours spent on the phone, hours spent studying, and CGPA.
2. **Self-Reported Data**: The data collected, mainly regarding hours spent on the phone, hours spent studying, and CGPA, may be subject to biases or inaccuracies. Participants may overestimate or underestimate their screen time or study hours, leading to measurement error.