

Egypt University of Informatics

Computer and Information Systems

Data Analysis Course

Exploring the Impact of Extracurricular Engagement on Academic Performance Among University Students

Submitted by: Yehia Mahrous Hassan

22-101239

9/3/2024

# Introduction

Welcome to our exploration of how extracurricular activities influence academic performance among university students. In this report, we delve into survey data to uncover insights into the relationship between students' engagement in activities outside the classroom and their academic success. Join us as we examine the impact of extracurricular involvement on the collegiate experience.

# Research Question

How does involvement in extracurricular activities impact students' academic performance, as measured by their GPA?

# Hypothesis

We hypothesize that students actively engaged in extracurricular activities will demonstrate higher academic performance compared to their counterparts who are not involved in such activities.

# Population of Interest:

The population of interest encompasses university students across diverse academic disciplines and demographic backgrounds.

# Sampling Method:

The survey employed a convenience sampling method, which involved distributing online surveys to individuals who were readily available and accessible to participate. Respondents were drawn from a pool of friends and students from both EUI university and other universities. This approach facilitated the collection of data in a timely and accessible manner.

# Bias Identification:

# In designing the survey, efforts were made to recognize and mitigate potential sources of bias that could influence the outcomes. One potential bias could stem from self-selection, as individuals who chose to participate may possess unique characteristics compared to those who did not. To mitigate this bias, the survey was distributed to a diverse group of respondents across different universities and academic years to ensure representation from varied backgrounds. Additionally, care was taken in crafting neutral and unbiased survey questions to avoid leading respondents towards certain responses. Moreover, the anonymity of responses was maintained to encourage candid and honest feedback, further minimizing potential biases. By implementing these measures, we aimed to uphold the integrity and reliability of the survey data while acknowledging the inherent challenges in survey research.

# Survey Questions:

1. Are you involved in any extracurricular activities?
2. Gender?
3. Age?
4. Year of Study?
5. Which extracurricular activities are you involved in? (Check all that apply)
6. How many hours (per week) do you typically spend on extracurricular activities?
7. How do you perceive the impact of your extracurricular involvement on your academic performance? (Choose N/A if You are not involved in Extracurricular activities)
8. What is your current CGPA?
9. How satisfied are you with your current academic performance?
10. How do you manage your time between academic responsibilities and extracurricular activities? (Choose N/A if You are not involved in Extracurricular activities)

Online survey link: https://forms.gle/ZEwMTvwncG79AjnP8

Number of samples collected: 33

# Analysis:

To analyze the collected data, descriptive statistics such as mean, median, and mode will be calculated. Visual representations in the form of charts and graphs will be created to discern any discernible patterns or trends.

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

Bimodal Distribution of GPA

|  |
| --- |
|  |
| The distribution of GPA appears to be bimodal, indicating the presence of two distinct peaks. Further investigation is warranted to discern the underlying reasons behind this phenomenon. It is plausible that a confounding variable, not accounted for in the analysis, may contribute to this distribution pattern. |

Impact of Extracurricular Activities on GPA:

|  |
| --- |
|  |
| Surprisingly, individuals who reported a neutral impact of extracurricular activities on their academic performance exhibited the highest average GPA. Conversely, those who perceived a negative impact on average displayed higher GPAs compared to individuals who reported a positive impact. This unexpected finding suggests the presence of nuanced dynamics that merit deeper exploration. |

Gender Disparity in GPA and Extracurricular Engagement:

|  |
| --- |
|  |
| Regardless of gender, students involved in extracurricular activities demonstrated higher average GPAs compared to their non-participating counterparts. This observation underscores the potential positive influence of extracurricular engagement on academic |

|  |
| --- |
|  |
| Regardless of gender, students involved in extracurricular activities demonstrated higher average GPAs compared to their non-participating counterparts. This observation underscores the potential positive influence of extracurricular engagement on academic |

Average GPA by Involvement in Extracurricular Activities

# Conclusion

# In conclusion, this report has looked into how joining clubs and activities outside of class might affect students' grades in college. By analyzing survey data, we found that being involved in these activities could have a positive impact on academic success. It's not just about grades – students' feelings and experiences also matter. While our findings are promising, more research is needed to understand why this happens. Overall, this report contributes to the ongoing discussion about the importance of getting involved beyond academics in college life.

# Any potential issues

One oversight in the survey design involved categorizing the variable representing time spent on extracurricular activities per week. Originally intended as a quantitative measure, it was mistakenly transformed into a categorical variable. This change may limit the accuracy of data analysis, as the precise time dedication cannot be accurately captured. Such misclassification could obscure potential insights. Moving forward, maintaining the integrity of variables and measurement scales is crucial for survey reliability.

Given the reliance on convenience sampling, caution must be exercised when generalizing the findings to the broader university student population. The self-selected nature of the sample introduces the possibility of selection bias, wherein respondents may possess characteristics or viewpoints that differ from the wider student body. Additionally, the absence of randomization in participant selection limits the survey's ability to draw definitive conclusions about the entire university student population. Therefore, while the survey offers valuable insights, its findings should be interpreted with consideration for the limitations inherent in convenience sampling methodologies.