

# Socioeconomic Investigation of Various Educational Outcomes

STA 199 | Cheetahs

Caroline Sangvai, Avi Murlikrishnan, Jalen Faison, Rohinee Mattikalli

*“What is the nature of the relationship between **financial well-being** and **academic achievement?**”*

**Research Question**

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Family Income Brackets

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SAT Performance and GPA

Family Income Brackets

**Research Question**

# Motivation

*Inform better  
educational policy and  
funding allocations to  
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*Inform better  
educational policy and  
funding allocations to  
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*Understand whether  
GPA or standardized  
testing is more resistant  
to demographic  
considerations*

## Motivation

# Dataset: *School Scores*

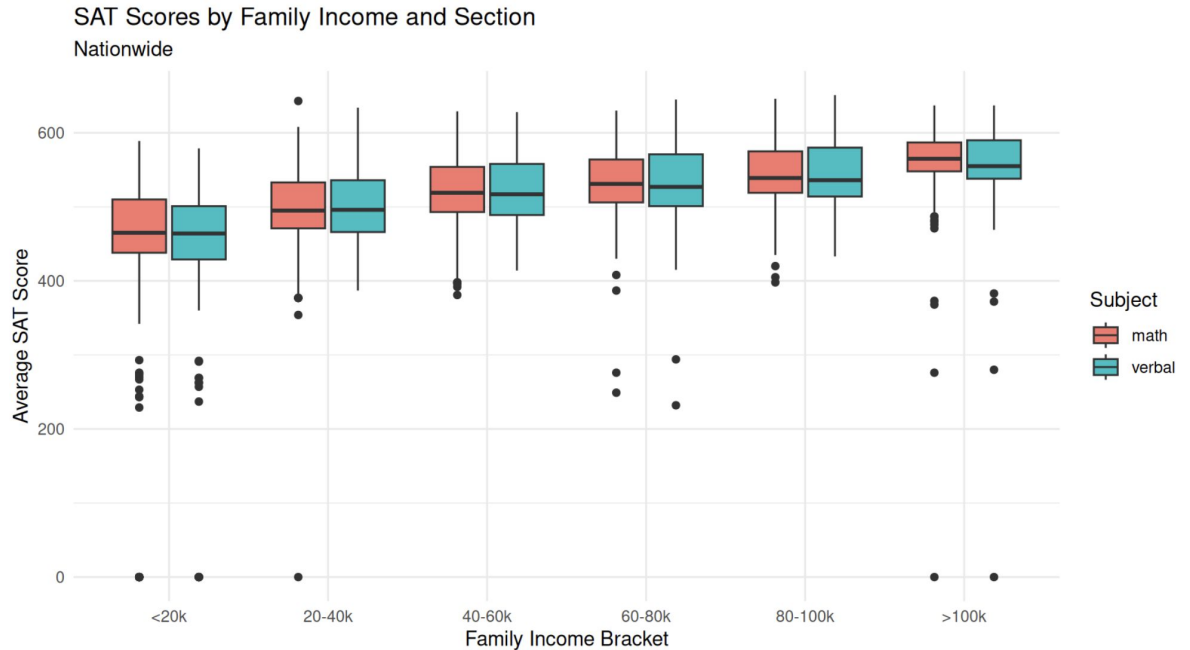
- Sourced from the Collection of Really Great, Interesting, Situation Datasets (CORGIS)
  - Originally collected by the National Center for Education Statistics (NCES)
- Broadly includes information on:
  - SAT Test Scores (Math & Reading)
  - Grade Point Average (GPA)
  - Financial Wellbeing (Family Income Brackets)
- Cleaning - pivoting data



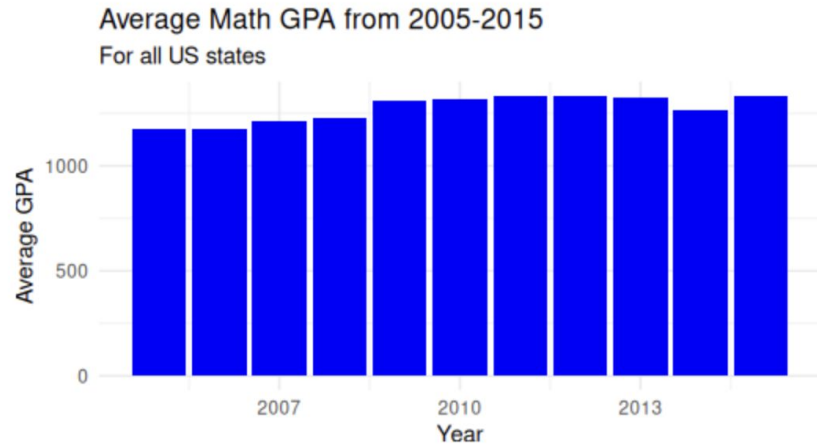
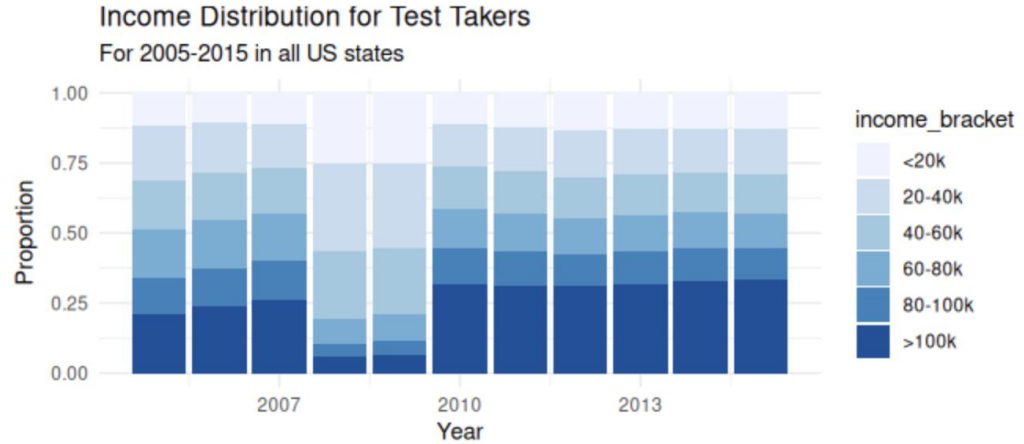
<b>20-40k</b>
<b>40-60k</b>
<b>60-80k</b>
<b>80-100k</b>
<b>100k +</b>

# Findings

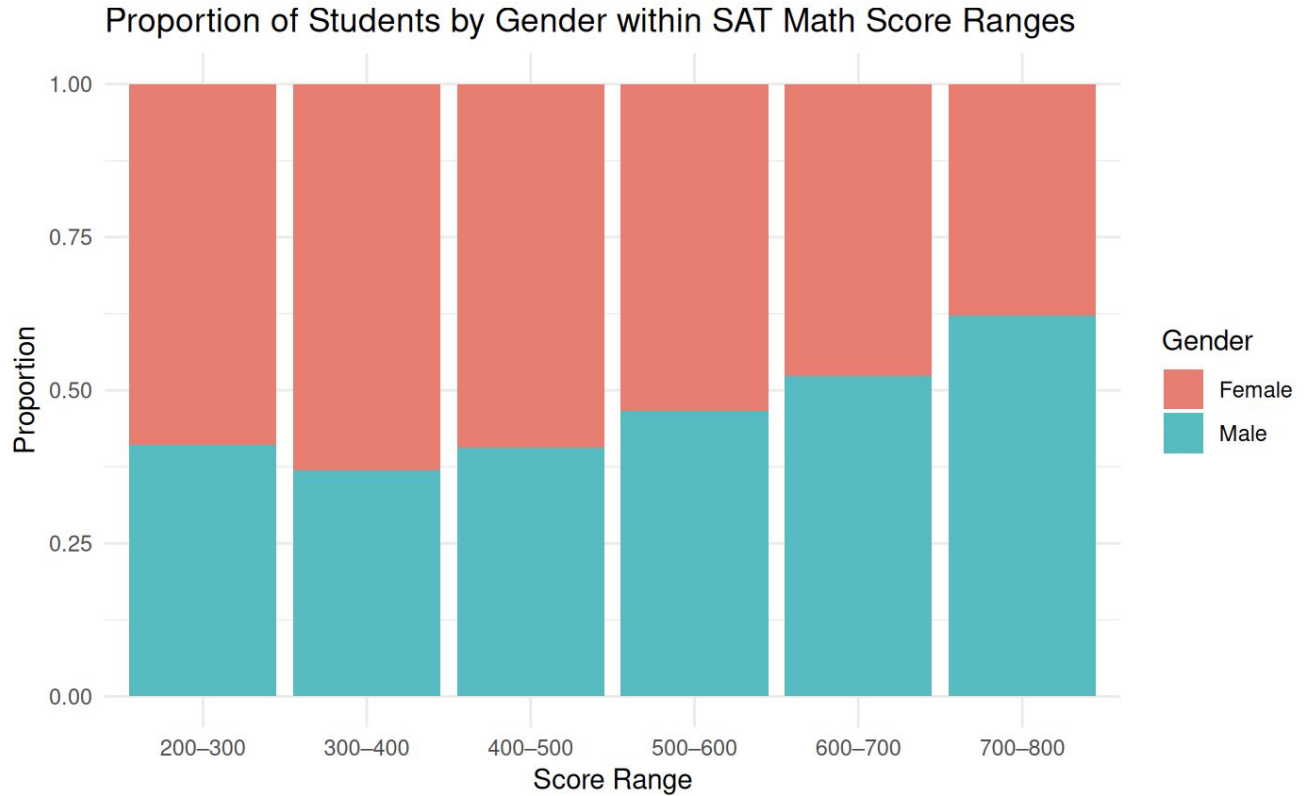
- SAT scores increase with family income
- Trend is consistent across math and verbal
- Higher income groups show higher medians
- Lower income groups have wider variability
- Reflects SES influence on test performance



- Distribution of test takers by income is relatively stable
- Slight increase in higher income representation with time, lower income groups appear underrepresented
- GPA shows relatively gradual upward trend with time
- Less variation compared to SAT scores



- Females skewed right (centered in lower score ranges)
- Males skewed left (centered in higher score ranges)



# Conclusions

1. **Higher** family income is associated with **higher** SAT scores
  - 1a. This relationship is consistent across both math and verbal sections
2. GPA shows **weaker variations** compared to SAT scores
3. Standardized testing may reflect SES differences to a greater degree

# *Limitations & Future Directions*

## **Limitations:**

- Dataset does not break down GPA scores into income bracket groups, so had to use yearly averages
- SAT sample size differs by income group, leading to possible selection bias in the data

**Future investigation:** Breakdown by state as well to see explore correlation between different state curriculum to the testing/GPA scores