

Equality and Bias in Standardized Testing

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2021/12/07

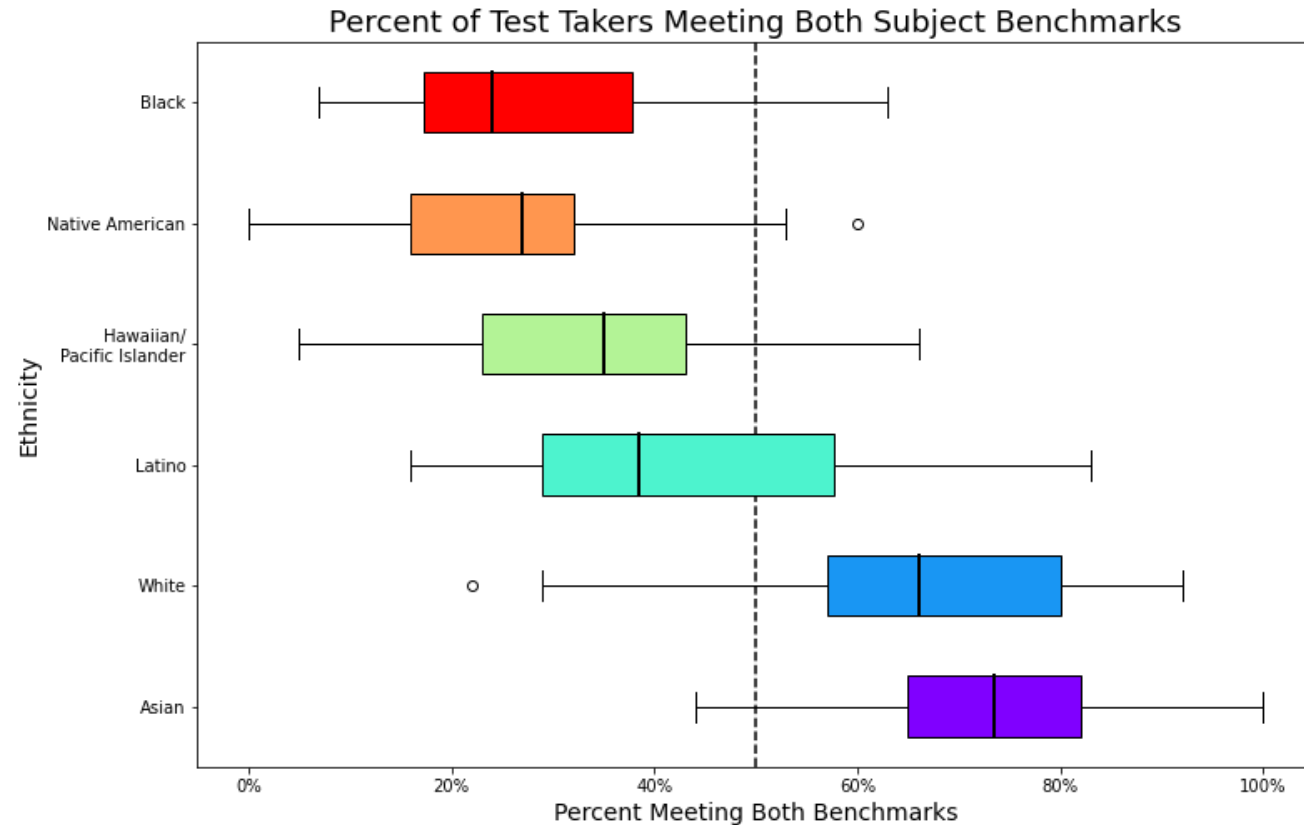
Project 1

Introduction

- We believe that the current usage of standardized tests, such as the SAT, has inherent bias based on demographics, and we examine the extent of this possible bias.
- Data relies on yearly averages for each state, broken down by the following major ethnic groups:
 - American Indian/Alaska Native, Asian, Black/African American, Hispanic/Latino, Native Hawaiian/Other Pacific Islander, or White
 - 10+ people for a given group needed to take the SAT for scores to be reported.
- Information on aggregated SAT results were gathered from the official annual report from the College Boards suite of assessments as well as from collegevine.com
 - Data includes 2017-2019 figures

Meeting Benchmarks

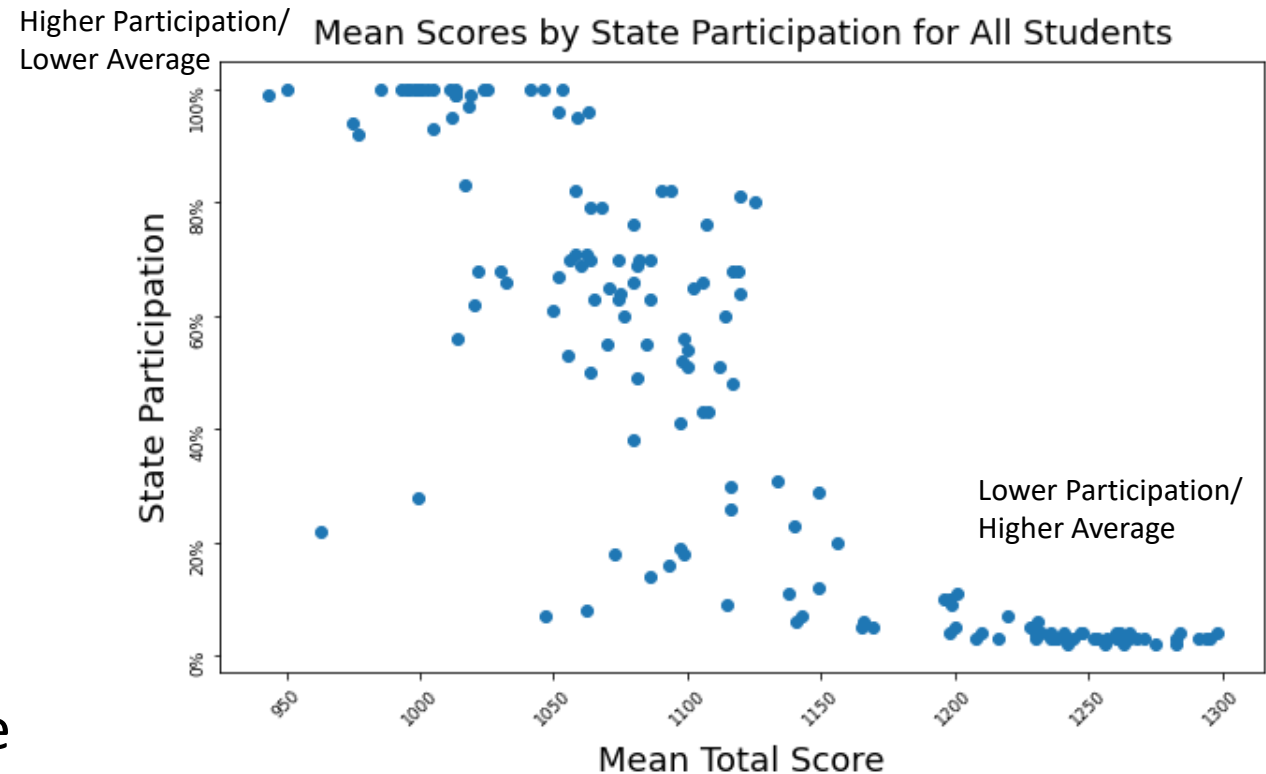
- Benchmark for a subject is defined by likelihood to pass (>75%) a corresponding freshman course for math and reading/writing
- Consistently White and Asian students perform better than Latino, Black, Native American, and Pacific Islander students.



50% of students for that state
= and year met both math and
reading/writing benchmarks

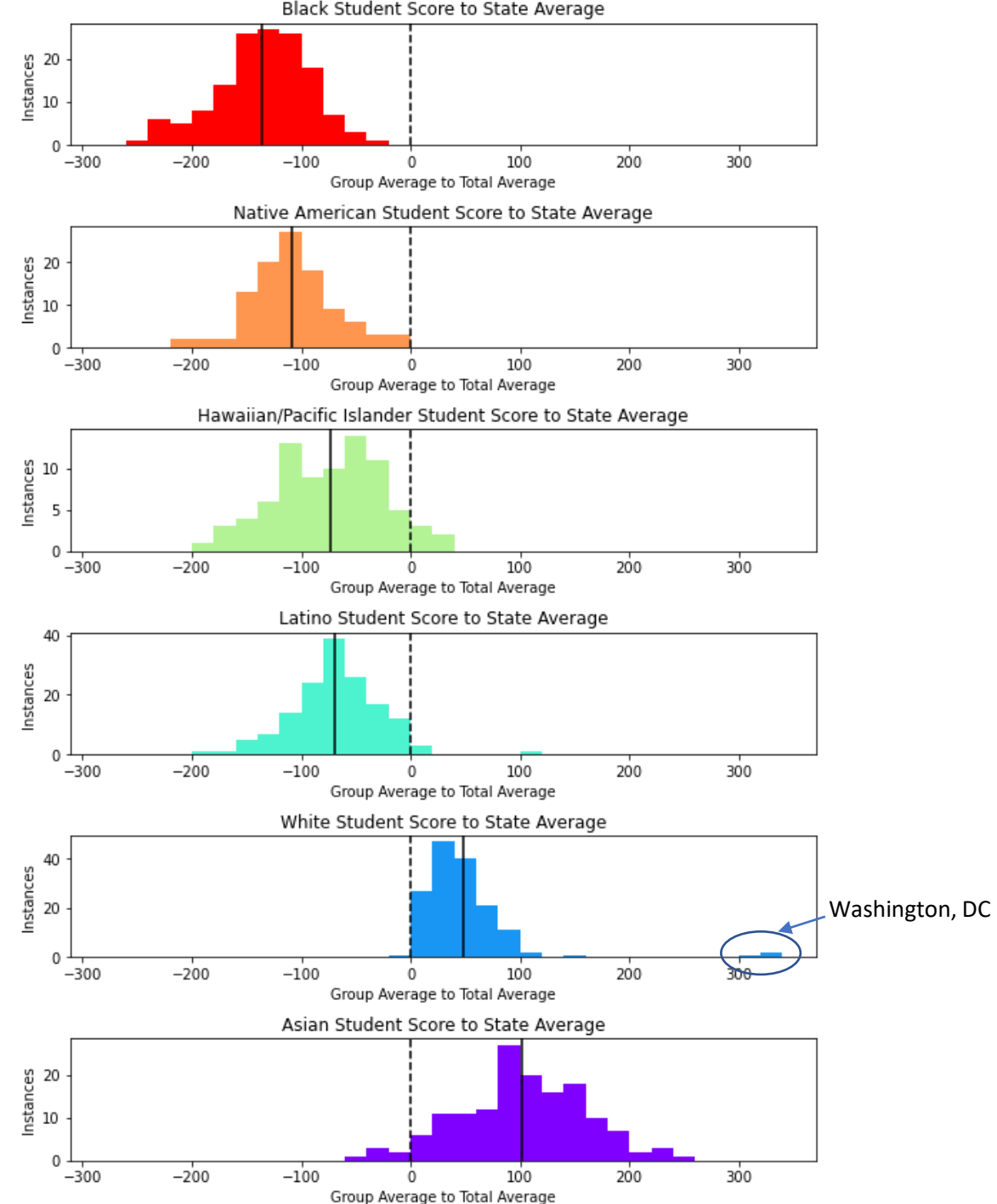
Differences by State

- Dependencies by different states are corrected for by taking race performance in relation to state average
- States with higher participation rates, or full participation, tend to have worse scores overall
 - Likely lower participation states are more students opting in, either with more preparation or more certainty on college aspirations



Correcting by State

- Almost all the underperforming demographics are below the respective average for every state
 - Only 9/231 instances did Latino or Pacific Islanders perform better than state average
 - And 0/247 instances did Black or Native American do better than the state average over the three years
 - Only 1/153 instances did White students perform worse than the state average
- The spread for most ethnicities is cut by roughly 40-55%
 - Exceptions are Asian and Hawaiian/Pacific Islanders with a reduction of 20% and 30% respectively
 - Remaining variance most likely due to state specific differences still tied to race
 - When done by gender, spread reduced by ~90%



Outcomes

- Results from the SAT show a strong correlation between ethnicity and SAT performance.
- Although these are clear, more studies would need to be performed to better understand the cause of these differences.
 - Potential causes could stem from socioeconomic factors, cultural importance on scholastic performance and test preparation, and difference in public school quality based on location.
 - Difference in SAT scores may not be indicative of an actual difference in intelligence
- Recommend placing less emphasis on SAT results for college admission until more research can be done on the cause of discrepancies