

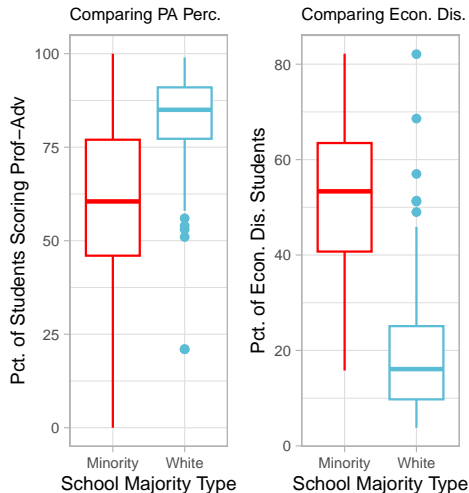
An example of combining data analysis with ethics-oriented reflection

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THE MCAS DATA



Standardized test scores are often used to measure student performance and school quality.

Research has shown that variation in standardized test scores is often explained by factors such as race and economic class.

Do data from the 2018 Mathematics MCAS indicate evidence of poverty-based and/or race-based achievement gaps?

THE MCAS DATA...



Challenges for Students

- Reading for detail
- The technical material
- Drawing meaning from the analysis
- Constructing an effective narrative

ETHICS-ORIENTED REFLECTION

"Statisticians should contemplate, and be sensitive to, the manner in which information is framed to avoid disproportionate harm to vulnerable groups."

Students read "Racial Health Disparities and Covid-19—Caution and Context" by Chowkwanyun and Reed Jr. (2020).

- Data in a vacuum may support explanations grounded in racial stereotypes
- Perception of certain social problems as "racial" has been used to rationalize neglect and funding cuts

"Why is caution necessary when presenting findings from the MCAS data?"

- May be used to argue for inherent differences in intelligence/ability

"How might you contextualize the findings when discussing them with a general audience?"

- Discuss important confounders such as socioeconomic status, disparities in quality of education, . . .
- Connect analysis to research on racial bias in standardized testing

STRENGTHS OF THE MCAS EXAMPLE

- Approachable (and engaging) data context
 - ◇ Students are familiar with standardized tests
 - ◇ Students are interested in data connected to social issues
- Rich dataset that lends itself well to visualization, inference, regression
- Strong connection to data ethics and data justice
 - ◇ Students are not typically exposed to thinking about what happens after an analysis is completed
 - ◇ Direct example of a situation where inappropriate contextualization would be irresponsible
 - ◇ Can particularly resonate with students who are part of underrepresented groups and/or who come from economically disadvantaged backgrounds