



# **Texas Public Education Accountability**

DA 6223, Data Analytics Tools & Techniques

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Campus: A-F



District : A-F

“TEA commissioner Mike Morath said the new grading method produces scores that ‘are not strongly correlated with poverty,’ a common criticism of A-through-F grading systems...”

Webb, Shelby. “How Houston-area districts fared: TEA releases STAAR results, accountability grades.” *Houston Chronicle*, 14 August 2018, <https://www.chron.com/news/education/article/TEA-to-release-STAAR-test-results-accountability-13155977.php>. Accessed 16 February 2019.

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## **Texas Education Agency**

- Responsible for K-12 public education in Texas
- Oversee school district operations
- Overseen by State Board of Education
- Work shaped by laws created by the Texas Legislature & U.S. Congress
- Commissioner appointed by the governor



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## **New academic accountability system**

- Created with 2017 state legislation
- Standards -> Measure Student Progress -> Consequences
- Schools receive A-F score at campus & district level
  - 70% - Student Achievement
  - 30% - Performance between demographic groups
- F grade 2 consecutive years = submit improvement plan
- F grade 3+ consecutive years = closure or appoint board of managers to govern district
- Every Student Succeed Act: more holistic look at education quality

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### **Economically disadvantaged**

- Students eligible for free or reduced-price meals under the National School Lunch and Child Nutrition Program
  - \$ 22.5 K annual income for household of 1
  - \$ 78.4 K annual income for household of 8
  - Differs from Federal poverty guidelines

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### **Project Questions:**

- Are school district accountability scores highly correlated with the percent of economically disadvantaged students?
- How strong are the relationships between district accountability scores and variables such as expenditures, attendance rates and standardized tests?

## 2017-18 School District Data:

- **A-F accountability score**
- **STAAR test results**
- **Economically disadvantaged**
- **Enrollment**
- **Attendance**
- **Expenditures**
- Drop out & graduation rates
- Teacher & administrator data
- Dyslexia
- Tax revenue
- Demographics
- Maintenance and operation

# Data Cleaning:

## Missing Data

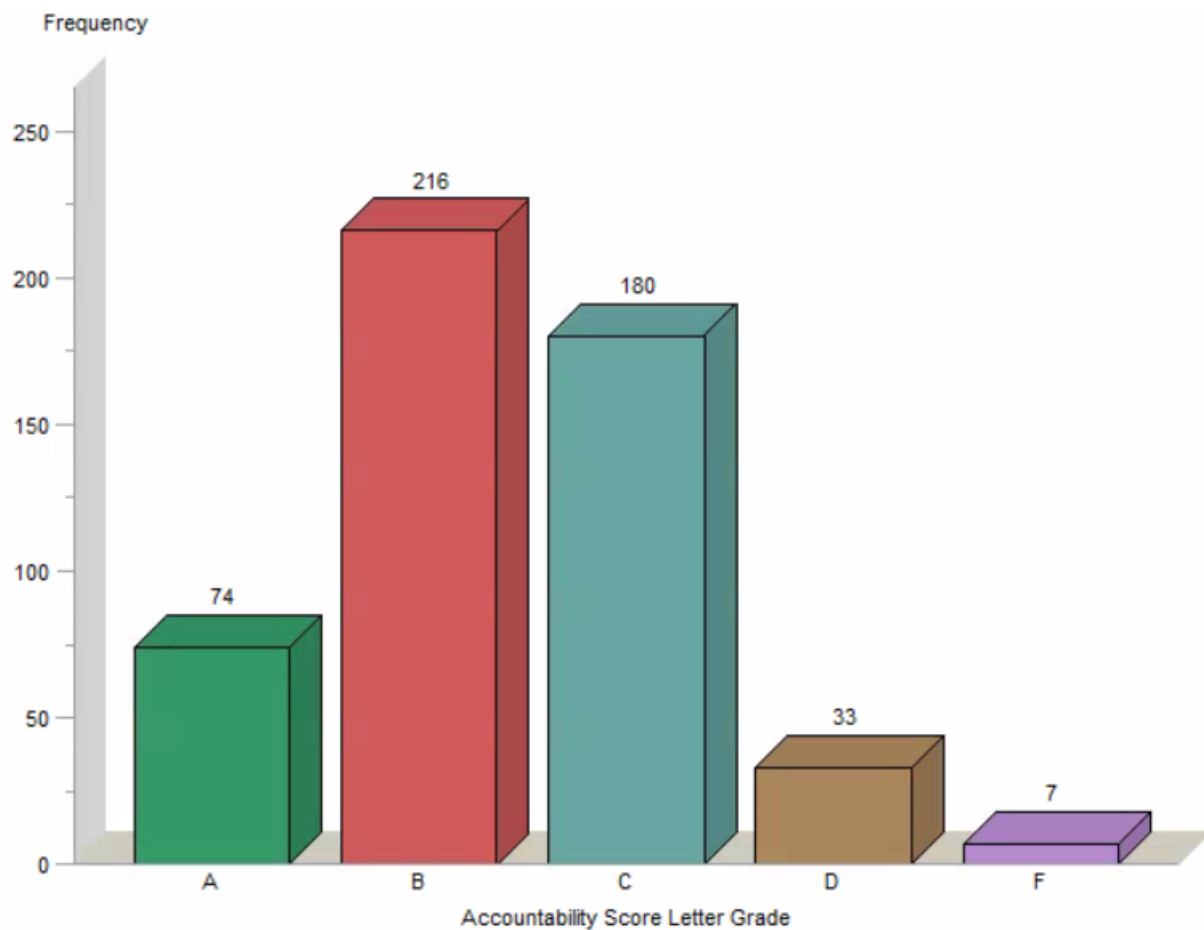
- School districts affected by Hurricane Harvey did not receive accountability scores in 2017-18
- Masked data for student privacy
- Demographic data missing among low enrollment districts

## Filtering

- District enrollment > 1,000 students
  - 510 observations



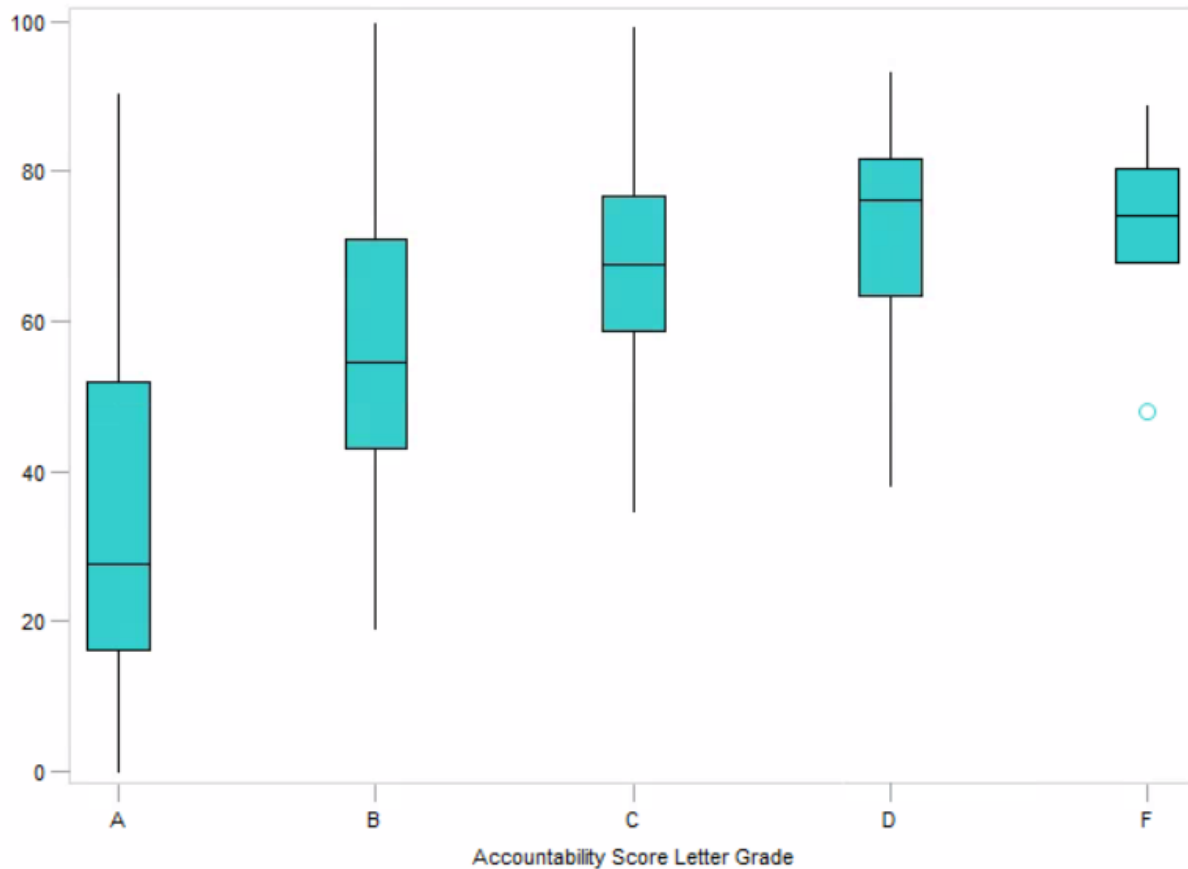
Accountability Score Letter Grade Distribution



Economically Disadvantaged

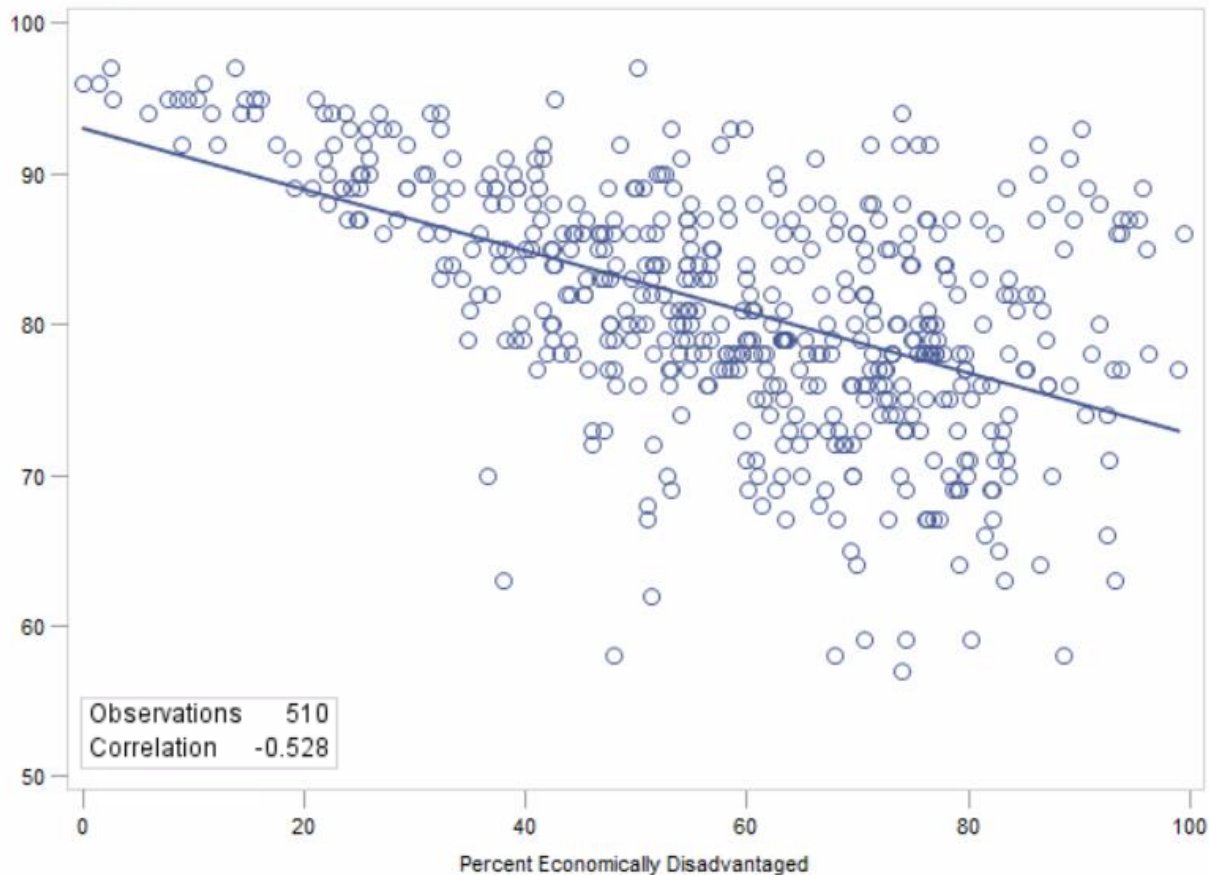
## Percent Economically Disadvantaged by Accountability Score Letter Grade

Percent Economically Disadvantaged



## Percent Economically Disadvantaged & Accountability Score

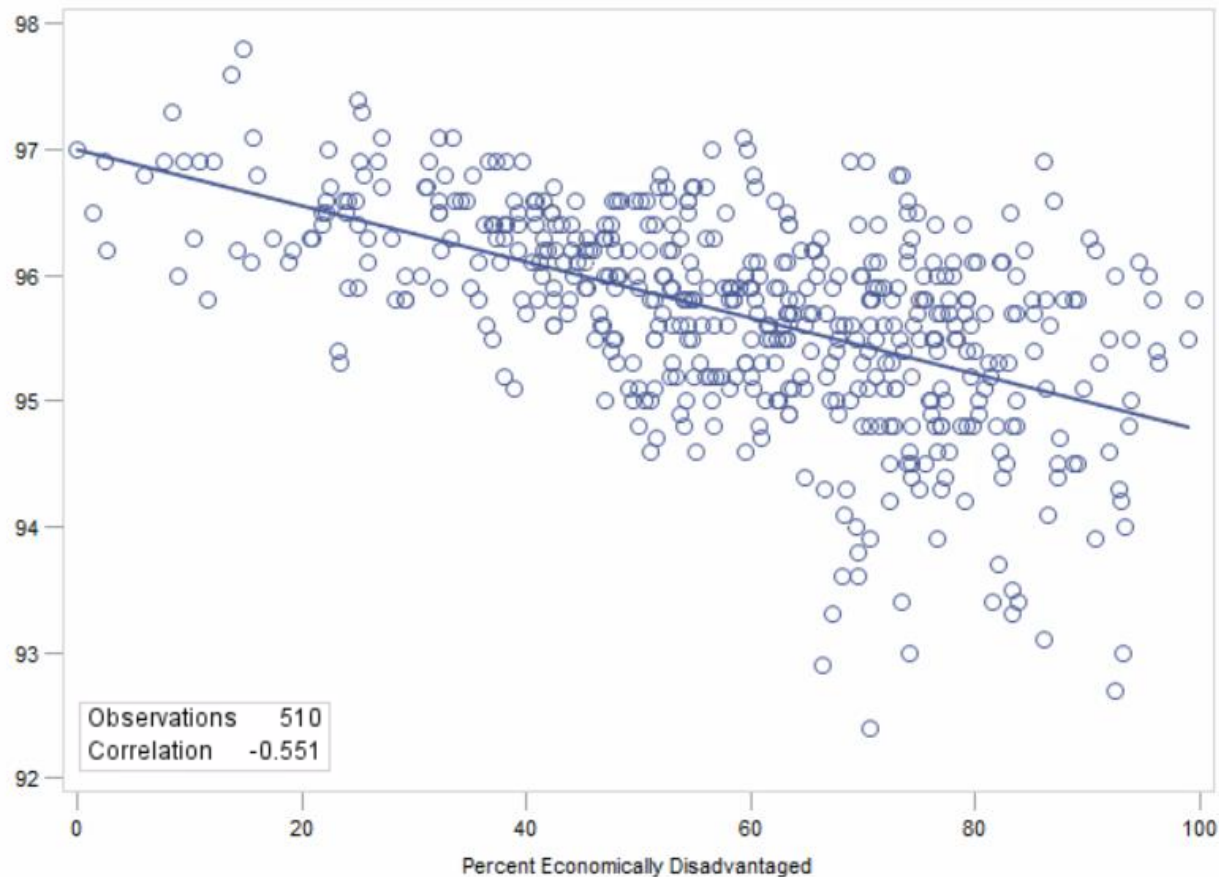
Accountability Score



Attendance

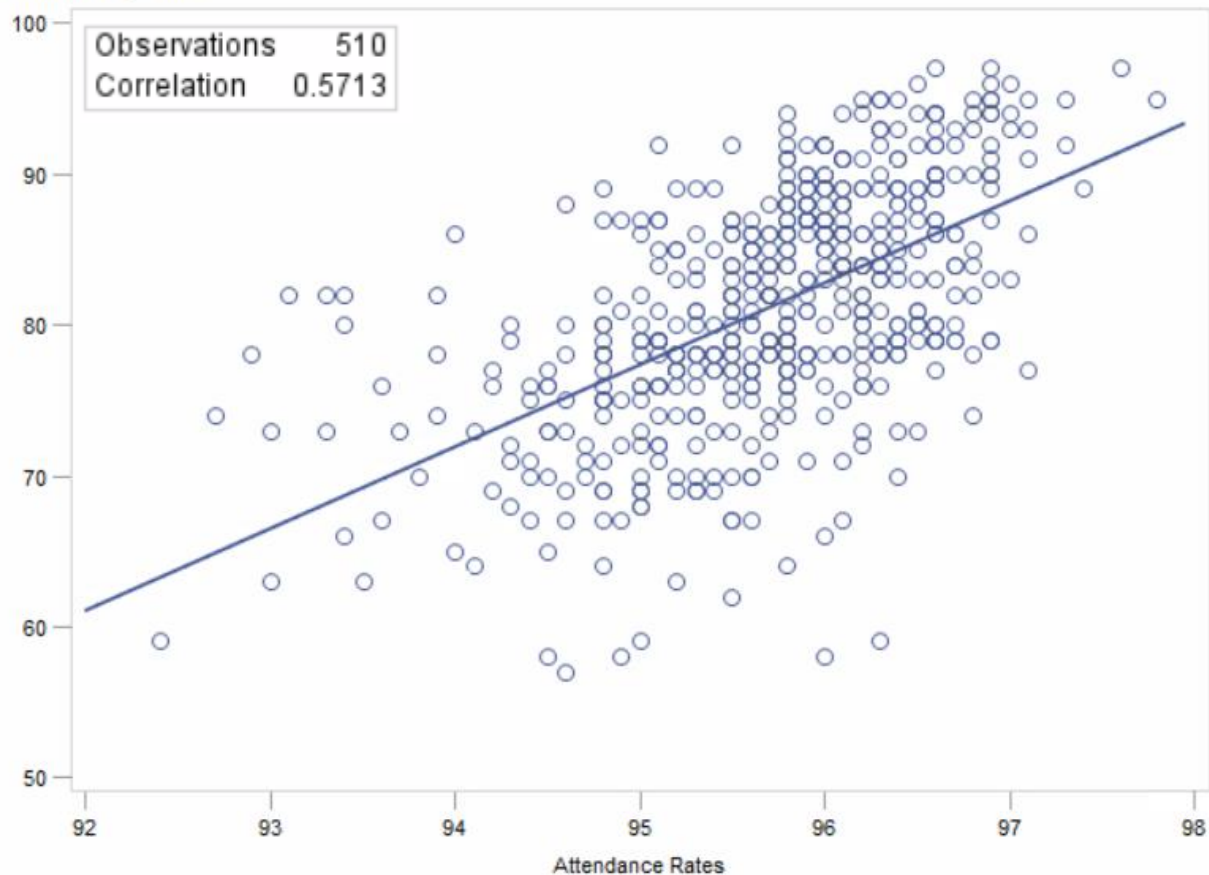
## Attendance Rates & Percent Economically Disadvantaged

Attendance Rates



## Attendance Rates & Accountability Score

Accountability Score

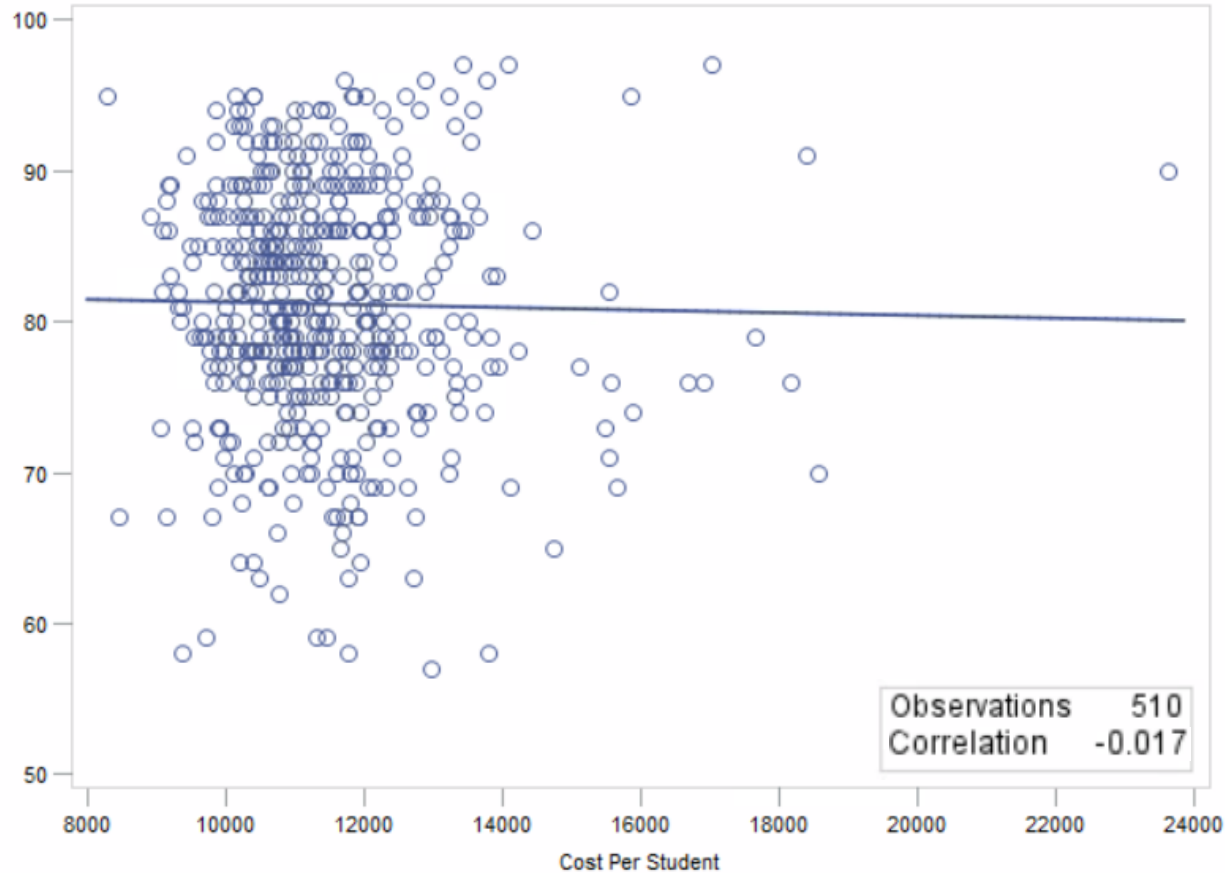


Expenditures

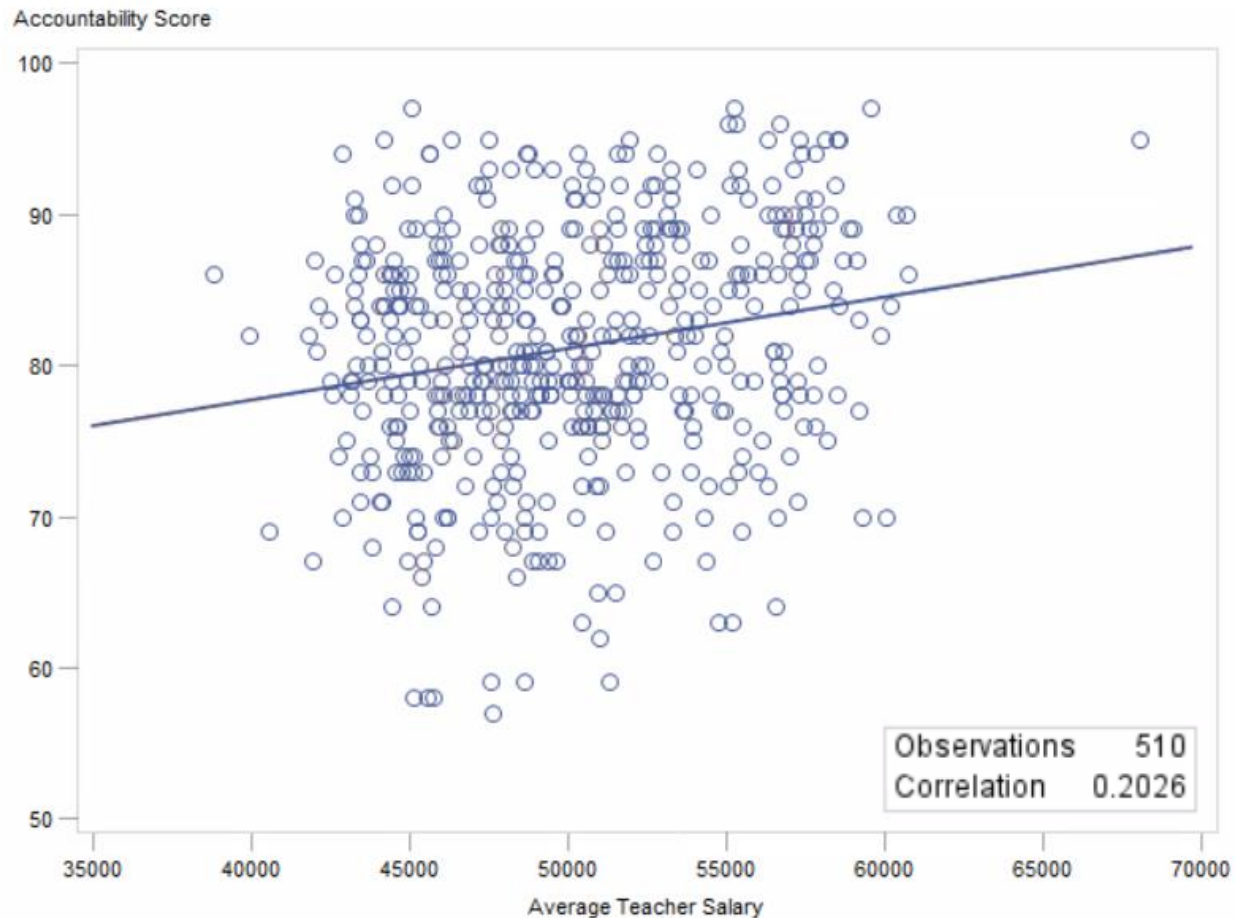


## Cost Per Student & Accountability Score

Accountability Score

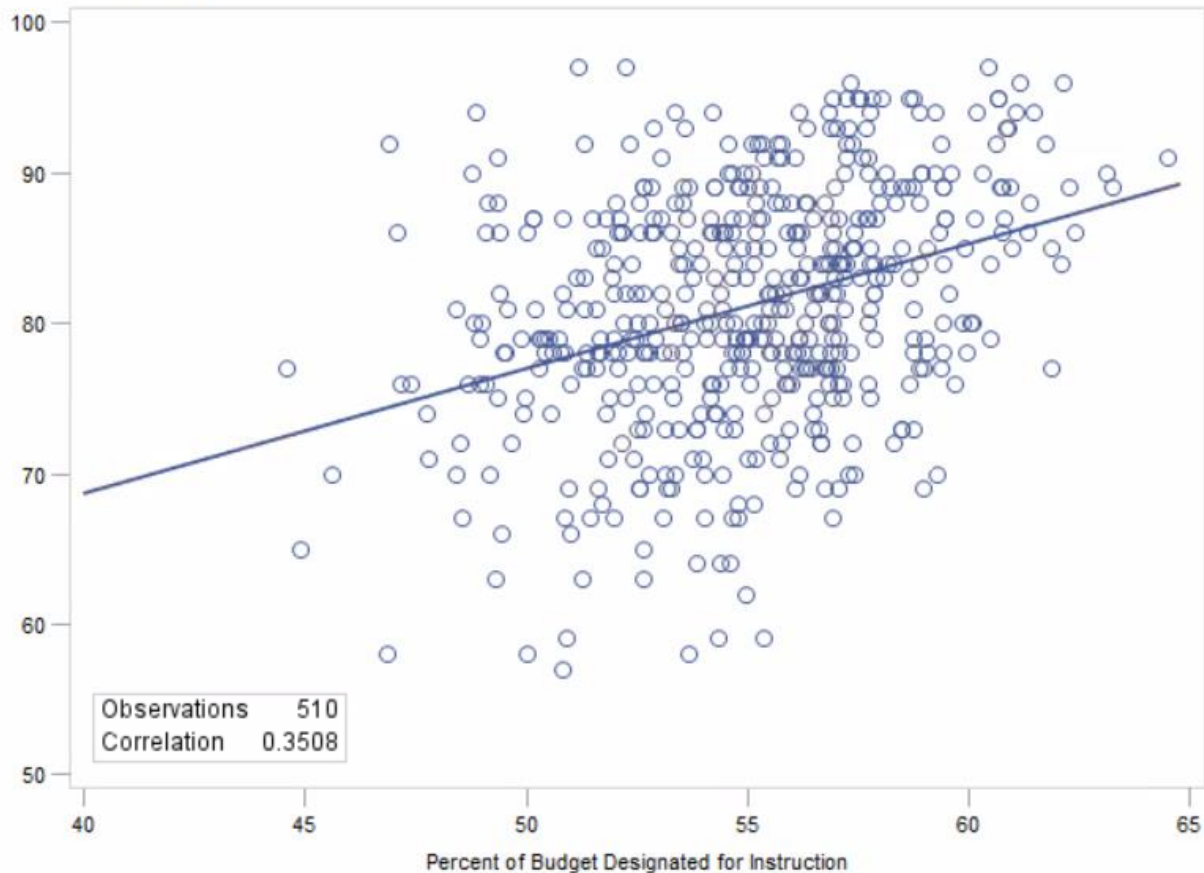


## Average Teacher Salary & Accountability Score



## Percent of Budget Designated for Instruction & Accountability Score

Accountability Score

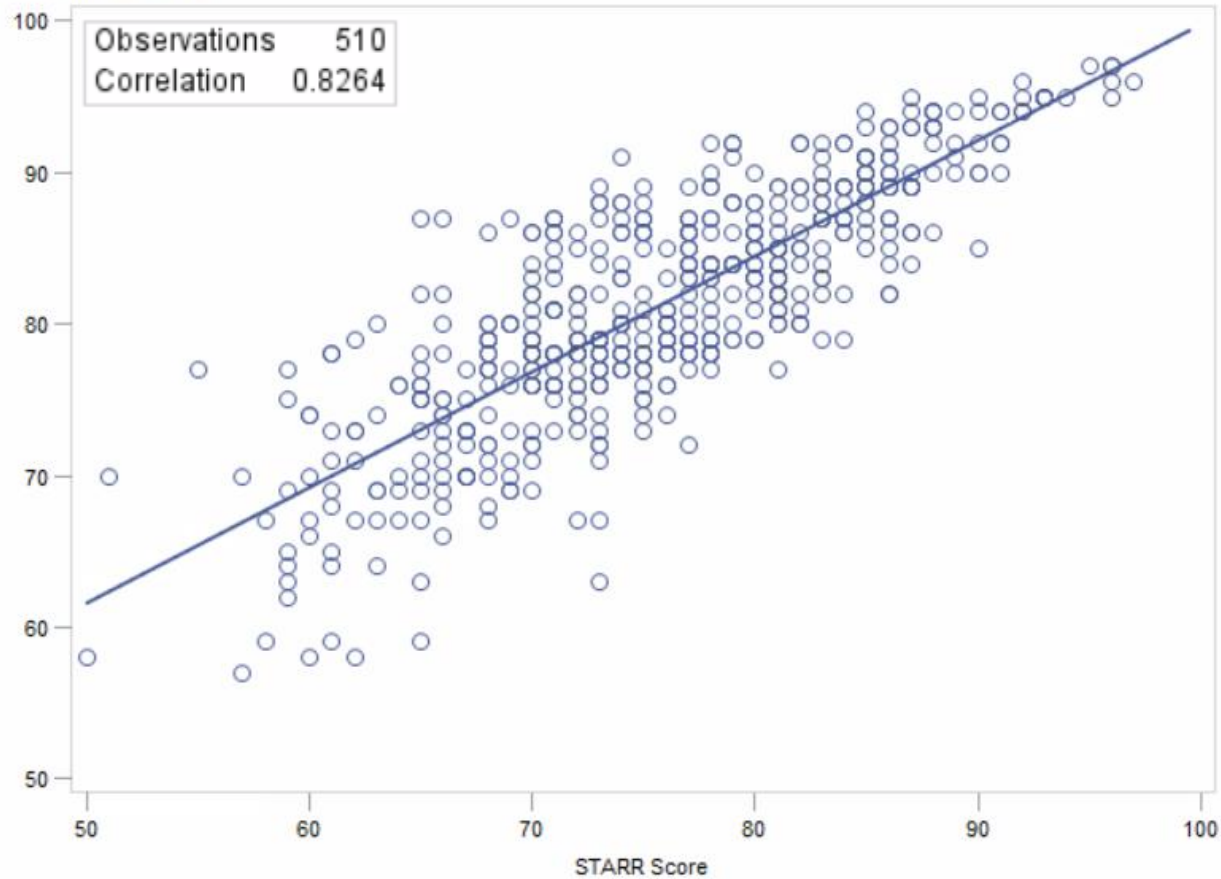


# STAAR Test Results

STAAR = State of Texas Assessments of Academic Readiness

## STARR Score & Accountability Score

Accountability Score



# Conclusions

## Project Questions:

- Is poverty correlated with the accountability scoring system?
  - Yes
  - $r = -0.53$
- How strongly are attendance rates correlated?
  - $r = 0.57$
- How strongly are expenditures correlated?
  - It depends
    - Instructional expenditures:  $r = 0.35$
    - Total cost per student:  $r = -0.02$
- How strongly are STAAR test results correlated?
  - $r = 0.83$

## Future Work:

- Can we predict district A-F accountability scores without the STAAR test results?
- Can we predict STAAR test scores?
- Are demographic group graduation rates important in predicting A-F score?
- Are other state's accountability systems more successful in reflecting school quality?



## Takeaways:

- There are limitations in the TEA data
  - Education level of parents
  - Parental involvement in learning outside of school
  - Commitments outside of school
  - Access to extracurricular activities
- One of the best ways to improve educational outcomes is to increase attendance rates
- It's not how much you spend, it's how you spend it
- Additional research is needed to create better standardized tests and accountability scores that describe educational quality