

Natural Disasters and Education

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April 14, 2022

Abstract

1 Introduction

2 Data

2.1 Natural Disaster Data

The Federal Emergency Management Agency (FEMA) provides data on all federally declared natural disasters, beginning in 1953. The data is easily accessible via their API ([Turner, 2022](#)).

Disaster declarations are made by the president, usually upon request by the affected state's governor. Once a disaster is federally declared, states or local governments can receive federal assistance.

Figure 1 shows the number of declared disasters across the US.

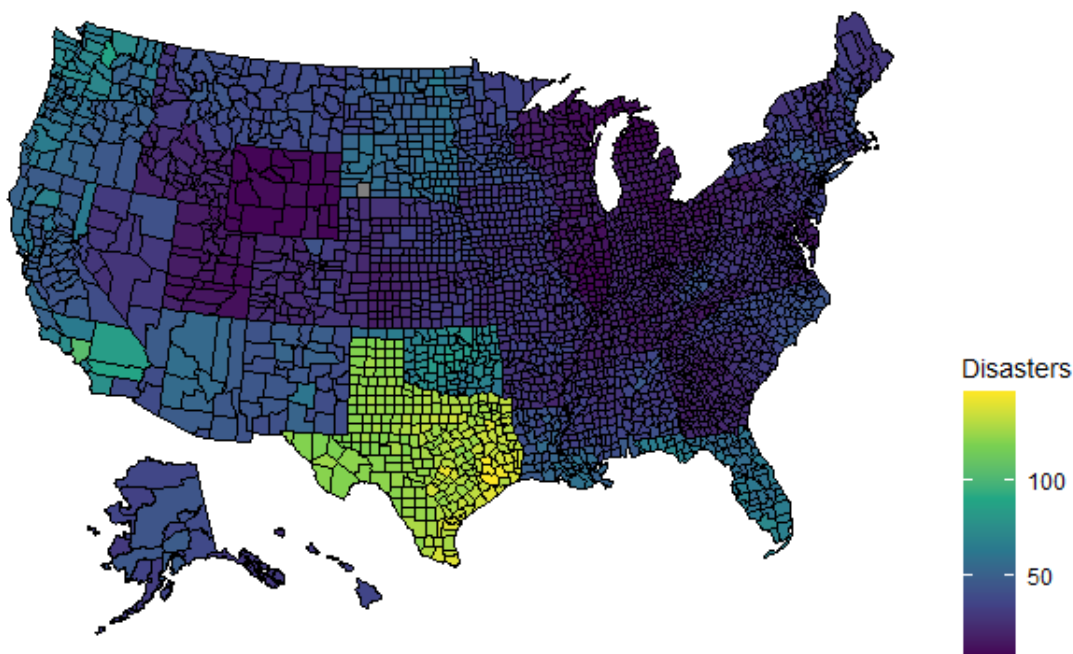


Figure 1: Number of declared natural disasters by county

2.2 Standardized Testing Data

Data on academic achievement is available from the Stanford Education Data Archive ([Reardon et al., 2021](#)). They provide mean test results from standardized tests by county, year, grade and subject among all students and various subgroups (including race, gender, and economically disadvantaged). The most recent version 4.1 covers grades 3 through 8 in mathematics and Reading Language Arts (RLA) over the 2008-09 through 2017-18 school years.

Test scores are cohort-standardized, meaning they can be interpreted relatively to an average national reference cohort in the same grade. For instance, a county mean of 0.5 indicates that the average student in the county scored approximately one half of a standard deviation higher than the average national student in the same grade.

Figure 2 shows the average test scores across the US.

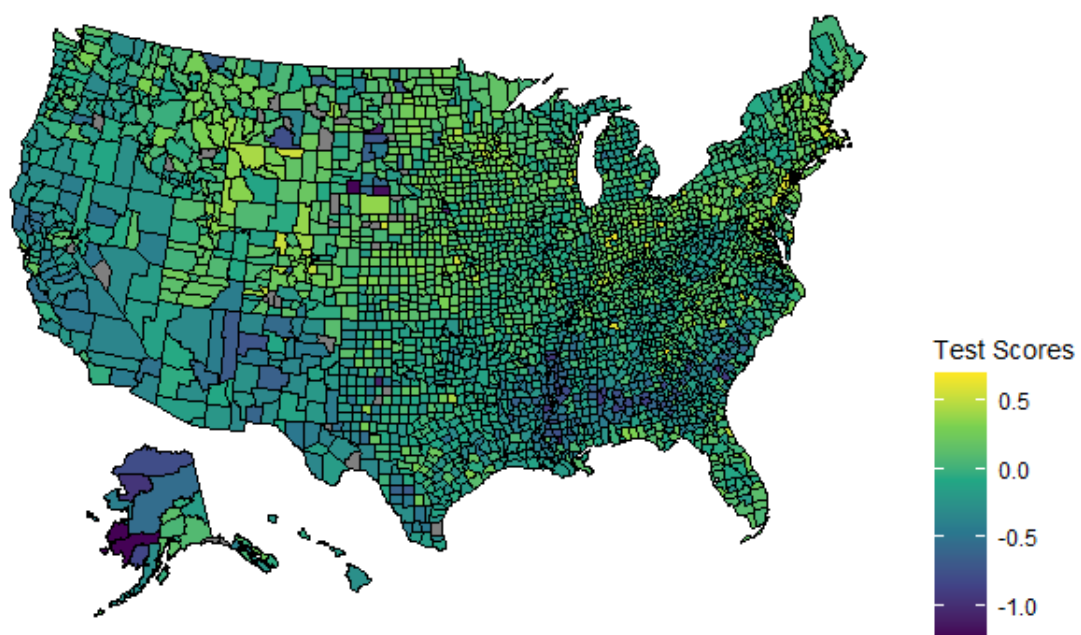


Figure 2: Average test scores by county (cohort-standardized and averaged across grades, subjects and years)

3 Empirical Strategy

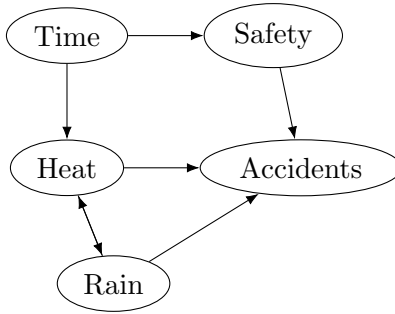


Figure 3: Directed acyclic graph of the effect

4 Results

5 Conclusion

References

- Reardon, S., Kalogrides, D., Ho, A., Shear, B., Fahle, E., Jang, H., and Chavez, B. (2021). Stanford education data archive (version 4.1).
- Turner, D. (2022). rfema: Access the openfema api. *rOpenSci*.