

Anthony Wilson

DSC 530 Exploratory Data Analysis

2/29/2020

## Tornadoes Among Us

Statistical/Hypothetical Question:

Have tornadoes caused more property damage over the last 10 years?

The outcome of your EDA:

I spent a lot of time digging through the data, and the findings were not significant. There was so much data and most of it, at least, the parts that indicated damage done was mostly on or around zero. I tried looking at the data by averaging over the year, as well as looking at the raw data. Nothing significant came about. When looking at the difference in means between everything prior to 2010 compared to everything after 2010 the data was fairly similar. This was clear when comparing the CDF's, as well as testing the means in the hypothesis test. Overall, I would say there were no significant findings.

What do you feel was missed during the analysis?

There could be different ways to look at this data. I feel like there might be a better model to run the data through. I am still not entirely confident when to transform variables vs when to use the raw data. I do feel like there could be more work done to this analysis. I am thinking I could look at the deaths and injuries with the Poisson distribution.

Were there any variables you felt could have helped in the analysis?

I feel like the variables were not complete. I am wondering if I was to go and try to find more data sets similar to this one that could correlate with the storms and provide additional information on the damage it could be more complete.

Were there any assumptions made you felt were incorrect?

Maybe, I probably needed to check my assumptions with the multi-linear regression that I ran. I just assumed everything was normal.

What challenges did you face, what did you not fully understand?

Understanding how to transform the variables as I said before is the biggest struggle that I have. I need to spend more time understanding the assumptions that need to be met with each model and test that is being ran. I feel like the exposure to the work is good and the continual effort made each semester is definitely going to get me where I need by the time we graduate.