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DSC 530 Data Exploration and Analysis

Weather Phenomenon and Fire Outbreaks

For my project, I have decided to determine if the severity of the weather phenomenon La Nina increases the number of fire outbreaks that occur within the rainforests of Brazil or does it not play any factor on the increase of fire outbreaks that have been occurring in the recent years. I ask this question because with these weather phenomenon, La Nina will produce a dryer season allowing for the chance of fire to possibly increase while El Nino will possibly have the opposite effect since it develops a wetter season.

Based on my exploratory data analysis of La Nina and the fire outbreaks, it seems that the weather phenomenon does have a strong correlation with the number of fire outbreaks that have occurred and in the future. The fire outbreaks did increased with the severity of the weather caused by La Nina.

With researching more about the rainforest and how people will use fire to create more land for mining and agriculture, I wish I had supplemental data on the fires caused on purpose to clear the way for these processes. Because with this tool to use fire, it has the capabilities of getting out of control and spreading much more than originally intended at the time. Hence, I think seeing data on which fires were man-made and which were environmental along with the occurrences of each would have provided more insight on how much of an effect the winds could have had on them.

In my analysis, I think variables surrounding severity of the fire outbreaks on some sort of scale to better determine the effect and spread of them. If I was able to contain that information, I could see more of how much the severity of La Nina played in the severity of the fire outbreaks. Since the fire outbreaks could have been high numbers, I do not have a way to determine if all the fires were intense or mild every single time.

An initial assumption that I had made in the beginning of my analysis was that the severity of the storms were always going to be higher. Hence, the fire outbreaks were going to also increase. While determining the severity’s probability and applying it within a cumulative distribution function, I was shown that overall the severity is most likely going to be weak for the most part whenever the phenomenon would occur rather it being La Nina or El Nino.

A challenge that I faced throughout this project was fitting my data to the different forms of analysis that we had to perform. In some way, the dataset we were provided throughout the exercises was cleaned and in god shape, but I think with locating a dataset and then attempting to apply different forms was more a challenge for me. I think I have an okay understanding of all the analyses and the answers that you can derive from each of them, but maybe I did not understand how some of them may have helped my project at the time.