A Comparison of Sentiment Toward In-Person and Remote Learning Twitter Data

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ECON 385

September 15, 2020

Descriptive Statistics

In this study, I will be analyzing and comparing the sentiment analysis for twitter data. The data that was collected revolves around the controversy between in person and remote learning during COVID-19. These two variables have been a constant topic throughout social media platforms for the past few months. Figure 1 shows the number of retweets, number of times an individual favored a tweet, and lastly the average polarity between the two learning methods. As shown in the graph, there are more retweeted texts containing in person learning. This shows that most individuals are actively engaged in topics regarding schools returning to classes. In comparison, the remote learning variable has the more favorited tweets. A reason for this can be anything from a funny meme to accurate assumptions of zoom classrooms and the difficulties of virtual class.

Figure 1- Descriptive Statistics Table

Descriptive Statistics: Between In Person and Remote Learning Tweets

Entity	Favorite Count	Avg. Polarity	Retweet Count
In Person Learning	4,215	0	675,659
Remote Learning	7,558	0	186,266

Sampling Method

The first step in the sampling process was to extract tweets from Twitter. I achieved this by importing the necessary files in Jupyter Notebook and passed my twitter credentials to tweepy. Next, a specific .csv file needed to be created to store the tweets and the sentiment and subjectivity data. With the file now created, the tweet data mined from Twitter could now be stored to be found in the working directory. In the code, I included the date from August to

September to be able to extract enough data to be able to analyze. Given the specific variables I chose, this date is convenient because it is a trending topic. Everyone is talking about the advantages and disadvantages of being in school during a pandemic. Most individuals that tweet about this are considered to be students, professors, and parents. When extracting the data and creating the visualizations, I excluded all the null variables that were not giving any encite to the analysis and were therefore unnecessary.

In Person Learning vs Remote Learning

With Tableau, I was able to create visualizations that helped identify the polarity and subjectivity between the two learning methods. The key aspect of sentiment analysis is to analyze a body of text and be able to understand the expressed opinion. In figure 2, the average tweet polarity is higher for in person learning than for remote learning. This states that most people are tweeting positively about learning in person rather than remotely. In comparison, more people have shown to favor tweets that are about remote learning. This is because there is a more wide range of topics to engage in for the reason that most individuals are living through it now. Each day people tweet about their zoom classes and the funny stories that may arise from technical difficulties. Moreover, this will lead to people liking a tweet because a funny meme is trending because of the pandemic.

Overall, there are more retweets for in person learning than for remote learning. These results could be from more information about school returning, individuals wanting to return to school, the challenges for younger students, etc. On average, California is the state with the most negative tweet polarity (Fig. 5). This would make sense because we are at a higher risk of coronavirus and so therefore would receive the most negative comments. A main limitation of

my analysis is the inability to correctly communicate the most used hashtags and their average

polarity between the two variables that are being tested.

Figure Tables

Figure 1- Descriptive Statistics Table

Descriptive Statistics: Between **In Person** and **Remote** Learning Tweets

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Figure 2- Polarity Bar Graph

Average Tweet Polarity: Between **In Person** and **Remote** Learning
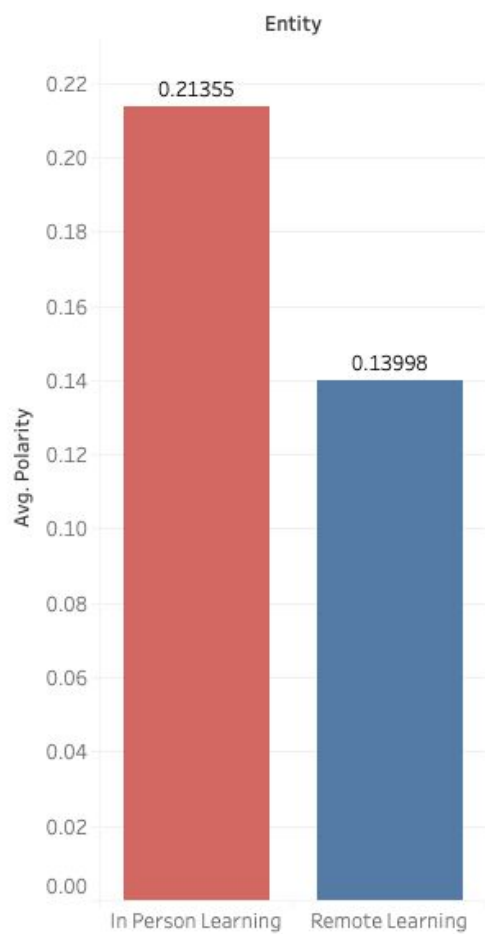
Figure 3- Comparison Graph between favorite count

Comparison Graph between Learning Entities
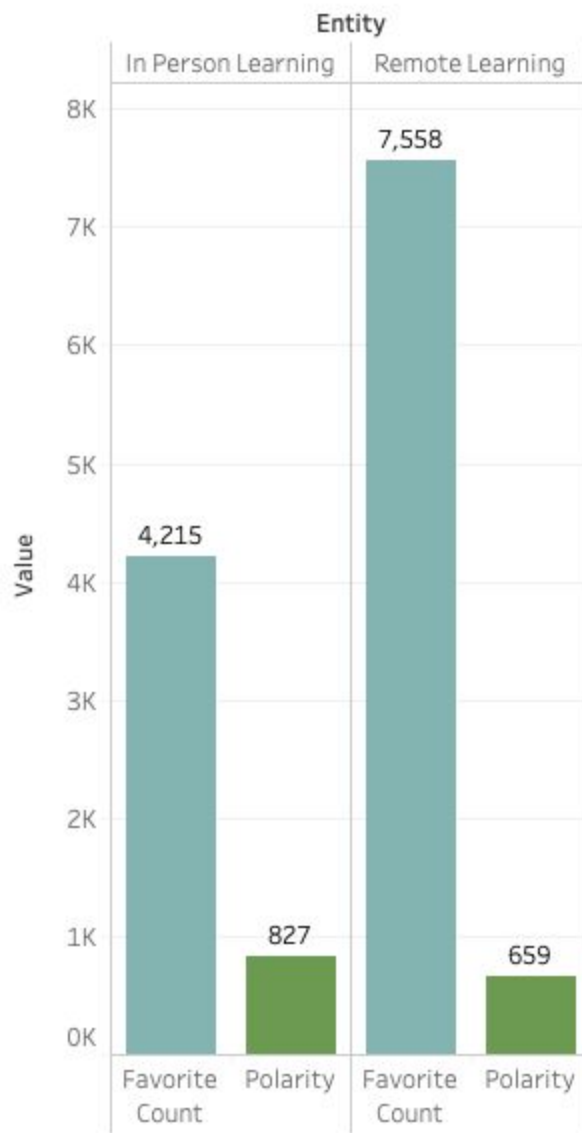
Figure 4- Scatter Plot

Subjectivity vs Polarity between Learning Methods

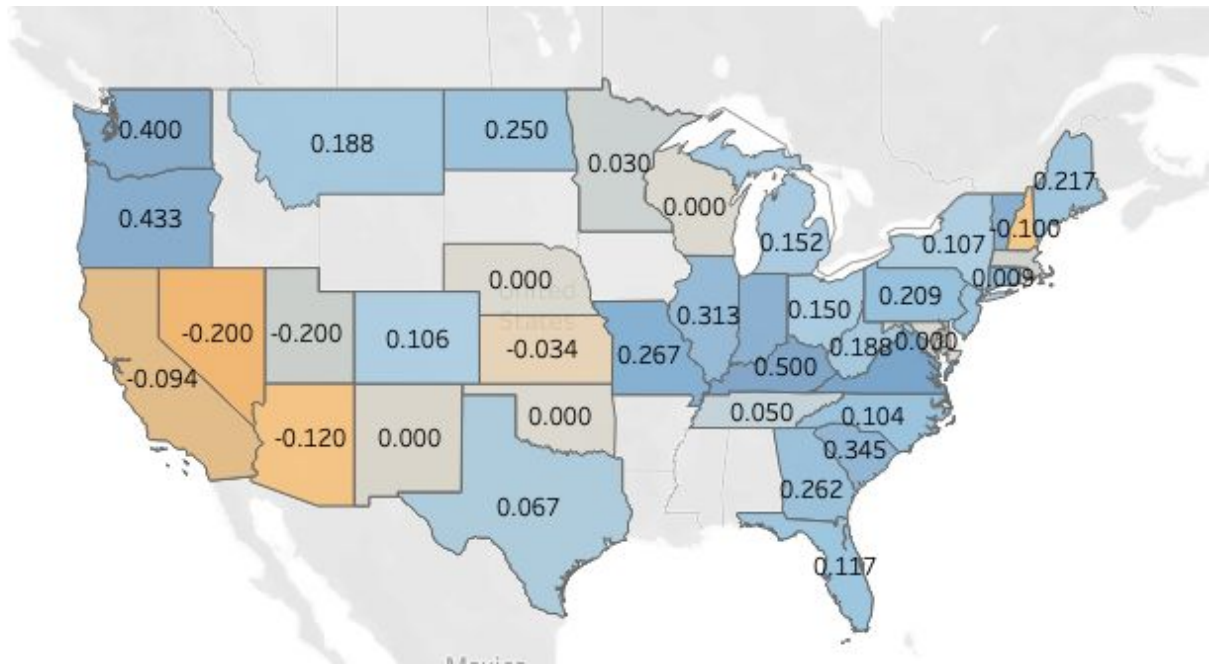Figure 5- Polarity Map between States
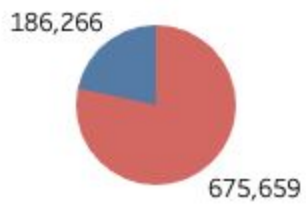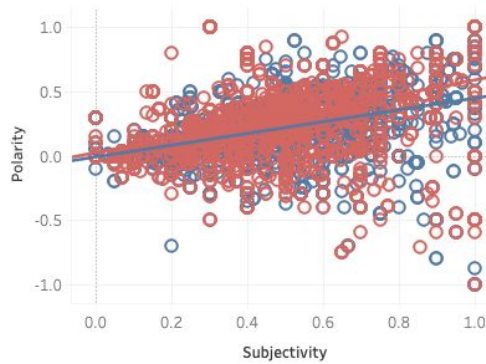

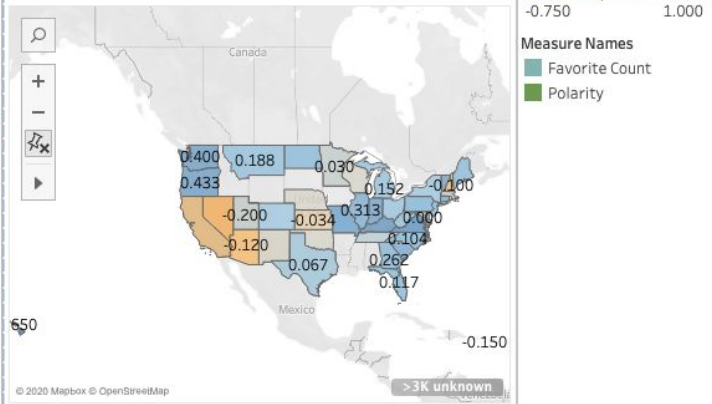Figure 6- Pie Chart

Pie Chart: Retweet Count

186,266

675,659

Figure 7- Tableau Dashboard

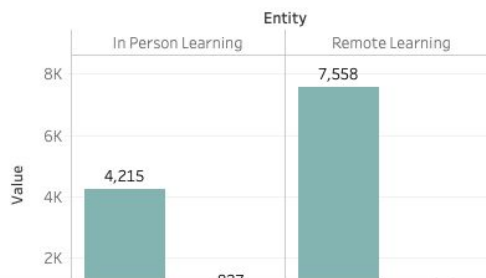## Twitter Analysis

Subjectivity vs Polarity between Learning Methods

Average Polarity Map by State

Comparison Graph between Learning Entities

Average Tweet Polarity: Between In Person and Remote Learning