Twitter Network Analysis of N95 Respirator

DS 745 – Data Visualization with Dr. Jae Hoon Choi

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Network analytics (NA) relates to the assessment of network data and statistics to uncover patterns and trends. NA is also used to explore several factors like the relationship among objects like plants, persons, organizations, or articles. One such network is Twitter, and it generates upwards of 6,000 tweets every second (Sayce, 2022). Analyzing such vast amount of data can be very challenging. We analyzed data using NodeXL Pro on Twitter’s network with the sole purpose of determining whether people were still discussing N95 respirators, now that COVID-19 cases have diminished overall.

**Social Network Analysis**

On April 8, 2022, we started the analysis of Twitter’s network data by clearing the NodeXL workbook before importing the data. The search criteria were the word “n95”, next we imported the data and limited the number of tweets to 1,000. Initially, the graph revealed a big “blob” of connected structures of the raw data. Thereafter, we prepared the data by counting and merging duplicate edges. Then we grouped the data by clusters and calculated the metrics. A time series analysis was conducted, and it revealed that most tweets about N95 occurred within the last two days. Afterwards, we conducted a text analysis which counted the frequencies of words in text columns. The final analysis may be visualized in figure 1.

**Insights Gained**

A time series analysis revealed that some comments were made on April 6, but most comments were made on April 8, 2022. Next, a review of pairs of words seems to have been negative. For instance, “gutless, one.” A summary of Twitter’s top tweeted items on the network was similar with the top domains of tweeters of the word “N95”, followed by boston.com, while the Centers for Disease Control and Prevention ranked 35th. In Figure 1, we see the edge labeled G3 and the top URL was Twitter and vitamins for all, some of their top hashtags were “N95” and “covidisairborne.”

In summary, we used NodeXL Pro to analyze and visualize a microcosm of Twitters’ network’s data. We learned the sentiment surrounding this respirator appears primarily negative. We also learned that in the last seven days, most tweets about N95 were posted on Twitter by Boston.com, which may coincide with recent decisions about mask mandates in society. One surprising insight we found was the CDC ranked 35th in the top domains of tweeters for the word “N95.” We presume this could mean the CDC was unconcerned about this respirator in the past week. Nevertheless, issues of COVID-19 remain fluid and people are using Twitter as a social network to voice their thoughts and opinions.

**Diagram

Description automatically generated**

***Figure 1: Twitter Analysis of N95***

References

Sayce, D. (2022). The number of tweets per day in 2020. Retrieved from https://www.dsayce.com/social-media/tweets-day/

Social Media Research Foundation. (2019, February 12). NodeXL Pro tutorial: Social network and content analysis with Twitter network data – step by step. Retrieved from https://www.smrfoundation.org/nodexl/tutorials/