**Covid-19 Impact on Twitter in**

**North Carolina – Data Observations**

# Are Covid-19 references on Twitter linked to virus progression both globally and in North Carolina?

*During the early stages of the pandemic, Twitter data globally did not see a steady increase in original tweets as expected. Instead, higher numbers of original tweets occurred on days when there were major world headlines. Clear examples occurred on January 31st when the US announced travel restrictions for visitors returning from China and when the first quarantines were initiated. Similar headline grabbing announcements occurred on February 9th, 2020 (China investing10bn to fight the virus) and on February 21st (WHO announced that Covid-19 was officially a pandemic). News cycles had significant impact on original tweets rather than sustained but increasing information such as what was experienced in the early part of the Covid-19 pandemic.*

*As the Covid-19 progressed in NC, the team saw Twitter activity increase in those counties where the virus was most severe. This is seen by the deepening colors on the Twitter heatmaps representing more tweets in those impacted counties.*

# Does location impact the probability of Twitter use as the virus progressed?

*Yes, areas experiencing more severe Covid-19 impact (i.e. Cases & Deaths) were more active on Twitter as the virus progressed. This is apparent from Mecklenburg county Twitter activity which moved from light green and yellow at the start of the US pandemic to red by May.*

*This differed from Wake county where Twitter activity declined during the time period as cases and deaths were not as significant. Additionally, Buncombe county which experienced relatively low impact from Covid-19 did not register on the Twitter activity heatmaps. This is consistent with the team’s belief that if a location were not significantly impacted, there would not be a corresponding increase in Twitter activity.*

# As the number of cases and deaths increased, did Twitter original Tweets increase?

*Early pandemic increases in original tweets were positively correlated to headlines. That being said, there did appear to be a slow growth in original Tweets as the virus progressed globally into late February.*

*The North Carolina data set did not differentiate between original tweets, retweets, and likes but did monitor overall Twitter activity. Activity is impacted by the severity of the Covid-19 outbreak. This is noted in the data set from the experience of Wake county where Twitter activity was initially high but leveled off/decreased as the area was not as significantly impacted as other locations.*

# As the number of cases and deaths increased, did Twitter retweets and likes increase?

*Yes, as the virus progressed globally there was a corresponding growth of retweets and likes. Retweets and Tweets, however, remained more heavily correlated to those dates with major headlines.*

*As noted above, the North Carolina data set did not differentiate between original tweets, retweets, and likes but did monitor overall Twitter activity. It can be inferred from the data set that retweets and likes increased as the virus progressed in severity by analysis of Mecklenburg County. Mecklenburg experienced a sharper increase in cases and death than the other counties sampled. This increase aligned with increased Twitter activity as represented by the red coloring on the May Twitter activity heatmap. This behavior is aligned to the team’s hypothesis that Twitter activity increased as the pandemic progressed.*

# Is North Carolina a good representation of US COVID-19 trends and what thereby can be inferred about Twitter usage?

*North Carolina metropolitan area Twitter trends are likely to be consistent with those of other US metropolitan areas, however, as the team did not sample rural counties, an assessment cannot be made as to whether NC is a good representation of the country as a whole.*