C5G Project: Mapping local beliefs and non-adherence to COVID-19 prevention measures using social media

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This project has used social media data aggregation from the City of Cincinnati to learn:

What local beliefs or events discussed on social media appear to be most related to the rising incidence of COVID-19 cases?
Aim 1. Identify public online discussion of cultural beliefs around prevention activities
Data Collection Process

Step 1: Location-based Data
Created novel location-based social media aggregation method

Step 2: Begin Aggregation
Aggregating data from each of the 60 Cincinnati zip codes

Step 3: Filter data
Keyword bins separate Tweets into mask-wearing, social distancing, hand washing, and vaccinations

Step 4: Apply sentiment analysis
Each Tweet is given a composite score ranging from -1 to +1
### Preliminary Data

<table>
<thead>
<tr>
<th>Zip Code</th>
<th>Population Total</th>
<th>Median Age</th>
<th>Median Household Income</th>
<th>Total Tweets</th>
<th>Mean Sentiment</th>
<th>Mean Sentiment Toward Masks</th>
</tr>
</thead>
<tbody>
<tr>
<td>45203</td>
<td>2429</td>
<td>29.6</td>
<td>19167</td>
<td>484</td>
<td>0.461</td>
<td>0.533</td>
</tr>
<tr>
<td>45011</td>
<td>71451</td>
<td>36.8</td>
<td>31646</td>
<td>33406</td>
<td>0.135</td>
<td>0.129</td>
</tr>
<tr>
<td>45111</td>
<td>324</td>
<td>60.3</td>
<td>78750</td>
<td>15</td>
<td>0.182</td>
<td>-0.718</td>
</tr>
</tbody>
</table>
Aim 2. Identify events that may be indicative to high-risk non-adherence to social distancing and mask-wearing and label these areas on a map.
Real-time Query Tools

Using common operational picture tool as a method to identify live events in a local area
Aim 3. Correlate sentiments towards preventative measures with the incidence of confirmed COVID-19 cases
Exploring the data

Correlating Daily Sentiment with Cases

Comparing count of daily sentiment with cases

Correlating All Zip Code Attributes
Questions? Email us:

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