

Final Project

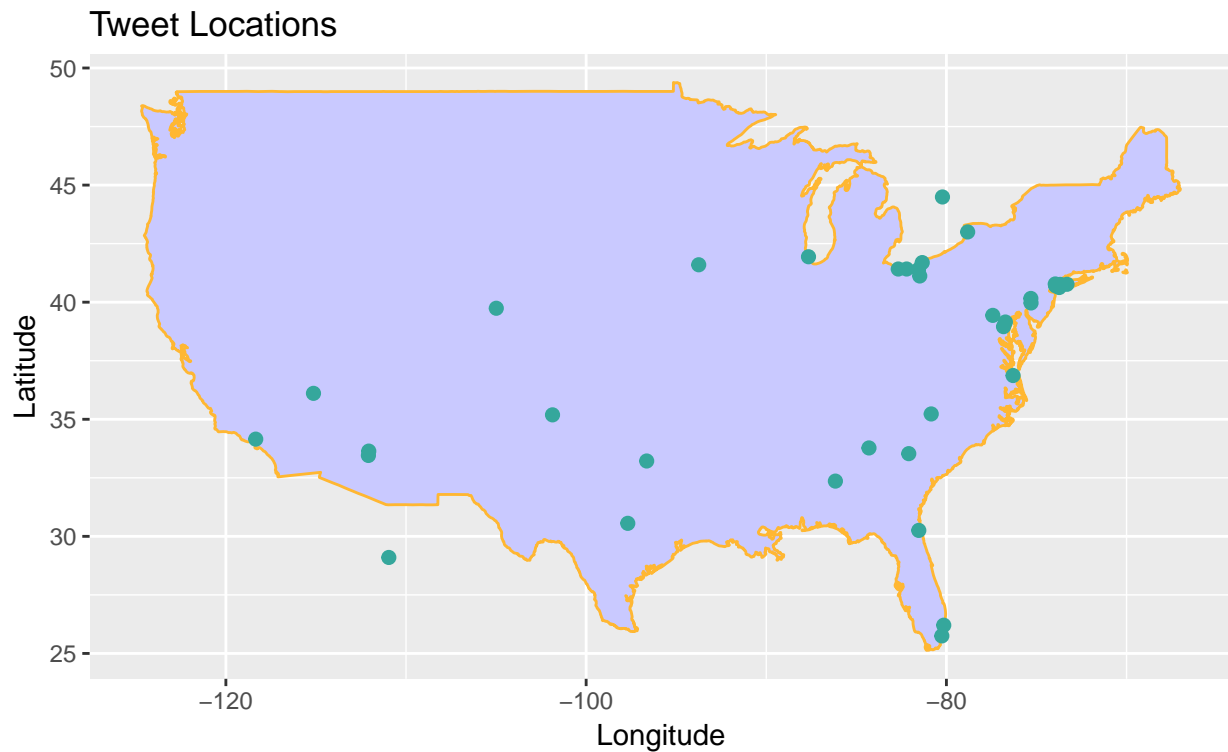
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For my final project, I decided to perform Twitter research on Chipotle, the restaurant chain. My reason for choosing Chipotle is that people tend to enjoy tweeting about food. Additionally, the official Chipotle Twitter account, @ChipotleTweets, is a relatively active account with nearly 900,000 followers and 675,000 tweets. I was also curious to see if I could find any relevant information regarding the recent launch of Chipotle's own queso that was released on September 12th of this year. I had seen online after the release that people were generally not happy with the queso and I wanted to see if that could be concluded from the tweets about the queso as well.

First, I thought it might be interesting from a marketing standpoint to see where people who tweet about Chipotle are located in the United States. There is a feature on Twitter that allows its users to share their location for each specific tweet. I decided to use this information to plot these locations. It should be noted that most people do not have this location feature made visible, so there is not an enormous amount of available location data. Regardless, I thought it might be interesting to see if any particular trends could be visualized.

Where People are Tweeting about Chipotle in the USA



Unfortunately, as mentioned prior, it can be quite difficult to gather a plethora of locations from tweets just because not many people choose to share their location; however, I was able to gather about 40 locations

within the United States from 11,000 tweets and plotted the longitudes and latitudes. Although the locations are a small data set, there still appears to be some clustering going on that can still be useful information. In particular, the West and Midwest regions of the country are extremely lacking in data points. There could be several reasons for this result. Perhaps Chipotle is less popular in these regions, or there may just be less Chipotle restaurant locations in these areas. I found a map online that displays Chipotle restaurant locations on a map of the USA (based on the data from “<https://www.redliondata.com/chipotle-stores-map/>”). Interestingly enough, this map I inserted below bears a similar resemblance to the map above generated by the tweets, supporting the argument that people are tweeting about Chipotle less in the West and Midwest regions of the United States because there are simply less Chipotle restaurants. The Chipotle marketing team should therefore think about focusing on the areas in which there are a high number of Chipotles, which is mainly the Southern and Northeast parts of the country. However, it may also be of value for the marketing team to focus efforts on the West and extreme Northwest parts of the United States due to the fact that there are quite a few Chipotle restaurant locations there, but they are lacking the Twitter traffic that could be helping their branding in that region. Perhaps the official Chipotle Twitter account could try to interact with users in those areas more than it currently is.

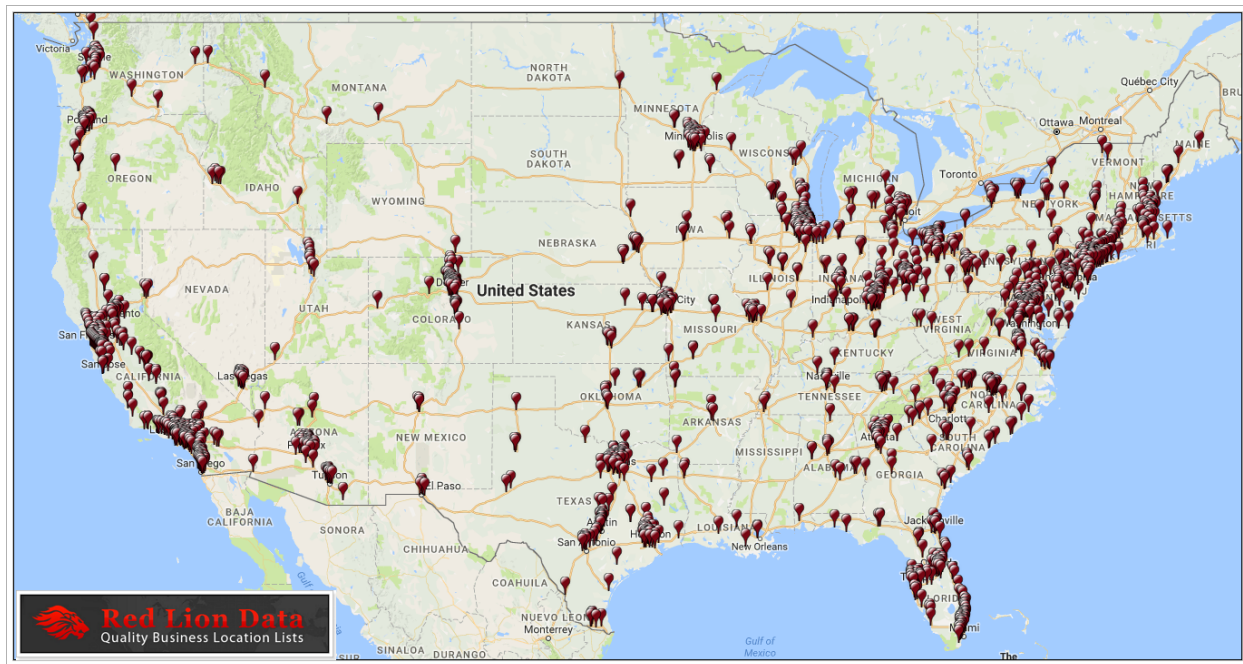


Figure 1: Chipotles in the USA

Word Cloud

Below is a link to a Shiny app I have created which is an interactive word cloud that can alternate between representing words in tweets about Chipotle and, more specifically, tweets about Chipotle’s queso. You can use the drop down to select the tweets you wish to have the word cloud express and press the interactive “Change” button to watch the cloud change according to your choice. Then, you can move the sliders to modify the cloud based on the minimum frequency of the words and the maximum number of words. The bigger and bolder a word is within the word cloud, the more frequently it is used in the tweets. After looking at the word cloud at the link below, one can gather some information about how people tend to tweet about Chipotle.

<https://jahorn.shinyapps.io/chipotle-wordcloud/>

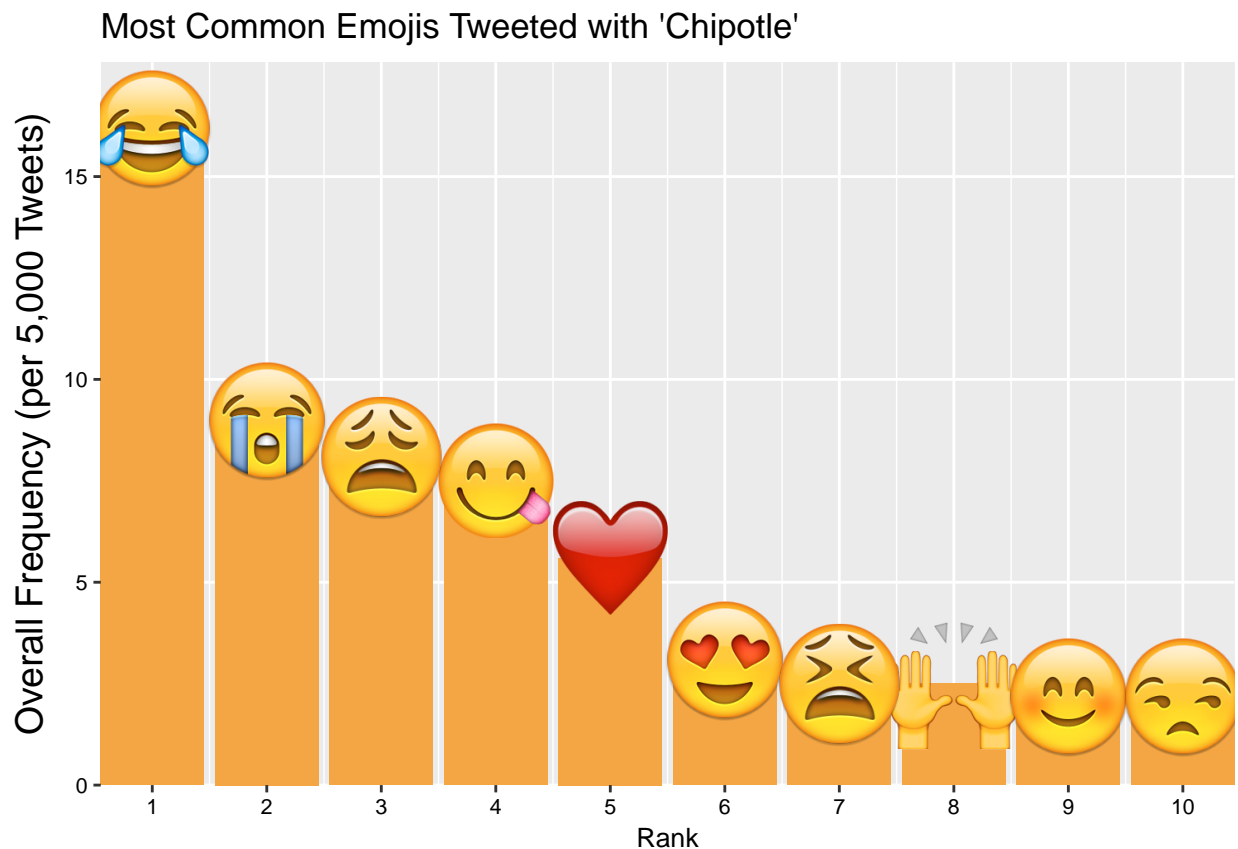
First, when looking at the Chipotle tweets word cloud when it is set to minimum frequency 10 and

maximum number of words 85, significant words that stand out are “Chipotle”, “ceo”, “founder”, “steve”, “ells”, “support”, “changed”, “struggling”, “fundraiser”, and “turnaround”. These words show that many people are tweeting about the issues that the CEO of Chipotle, Steve Ells, is facing. He has been trying to save Chipotle from the many mishaps of E. coli and poorly received queso release. There has also been talk of him stepping down as CEO. (To learn more about the outbreaks of E. coli and other illnesses caused by Chipotle, the FDA discusses them in detail here <https://www.fda.gov/Food/RecallsOutbreaksEmergencies/Outbreaks/ucm470410.htm> .) However, there are some words like “fundraiser” and “support” that are likely to be from more positive tweets about Chipotle, since Chipotle often helps organizations hold fundraisers at their restaurants. Also, “turnaround” could be indicative of people tweeting about how Chipotle is making a positive turnaround from its near-disastrous illness outbreaks.

Next, let us look at the Chipotle queso tweets word cloud. I selected tweets for this word cloud that were after September 12th, 2017 to ensure that I collected people’s tweets that were posted after the queso was released. For a good visual, set the minimum frequency to 20 and the maximum number of words to 75. Significant words that stand out with this word cloud are “good”, “sh*t”, “garbage”, “super”, “bad”, and “norovirus”. “Norovirus” refers to the outbreak of the norovirus around the Boston College area from Chipotle food in December of 2015. Unfortunately, there seem to be many negative words in the cloud referring to Chipotle’s new queso. The spike in the word “norovirus” could be because people fear that with a new food item being introduced to the Chipotle restaurants comes along a new concern that this item may not be safely stored or not adequately prepared to prevent foodborn illnesses.

Emoji Analysis

Next, we will look at the emojis that frequently appear in tweets about Chipotle.



This chart above looks at the emojis being used in tweets about Chipotle and ranks the top ten starting from

the most used starting at the left. Some of the top emojis can be logically interpreted, such as the heart eyes face, heart, praise hands, and smiling faces. However, the top two emojis can be a little confusing out of context. The top emoji tweeted along with “Chipotle” is the laugh crying face, followed by the crying face. These may seem sad or of mocking nature, but below are some example of tweets with these emojis to get a general idea of what the context of the tweet usually is.



Figure 2: Laugh crying face



Figure 3: Crying face and laugh crying face



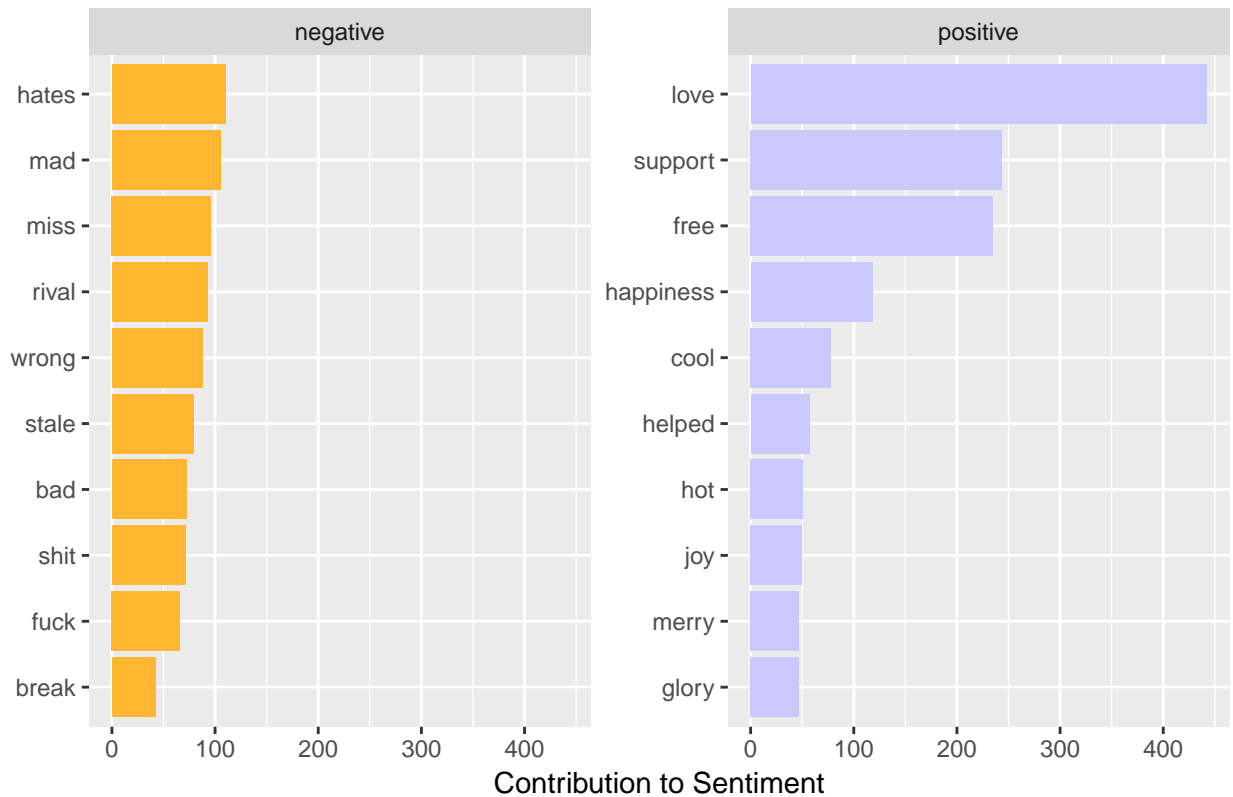
Figure 4: Crying face

These tweets pictured above are good examples of the context of the tweets containing these emojis. One can conclude from the chart and the tweets that most people tweeting about Chipotle and using emojis are tweeting positively about the restaurant chain, often saying they are craving the food.

Sentiments Expressed in Tweets about Chipotle

Below we will look at the sentiments of tweets about Chipotle, but in relation to Twitter users' word choices.

Negative vs. Positive Words in Tweets about Chipotle



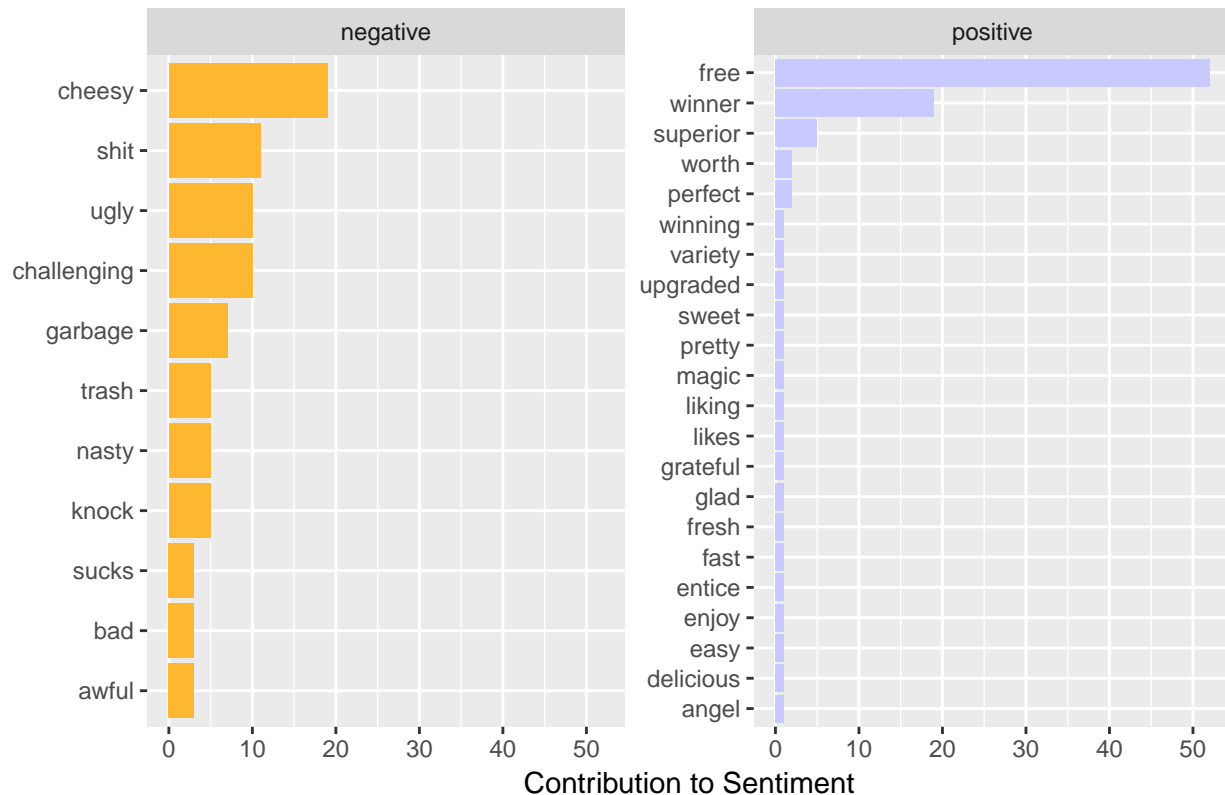
The chart above looks at positive and negative words used in tweets about Chipotle. There are relatively high contributions of positive sentiment words to the tweets versus the lower contributions of the negative words. “Support” is a very popular positive word being tweeted with “Chipotle”, with “love” also usually being at the top of the list. Below is a table that includes a sample of 25 tweets that are about Chipotle and include the word “support”, to show a glimpse of what these types of tweets look like.

Sample “Support” Tweets:

chipotle tonight to support unified basketball show the cashier this flyer or tell them you a
 come out to chipotle tonight and mention youre supporting west mec from
 et to dine at chipotle tonight wedbetween pm and show the flyer to below to support the b
 et to dine at chipotle tonight wedbetween pm and show the flyer to below to support the b
 otile spirit night is tonight from make sure you tell the cashier you are supporting the cau
 our favorite ladies by eating dinner at the chipotle in hadley ma tomorrow from pmpm rem
 the game well tomorrows your chance to grab some grubsupport the ghs boys soccer p
 get some chipotle tonight to support sk tennis
 rt the limestone girls track program tonight at chipotle on sterling ave in peoriajust show
 me out to chipotle this thursday evening and support our avid program show this flyer or
 come support kpc todaynear fresno state from pm
 es a great chance to support our future physical educators grab dinner at chipotle shaw
 eres a great chance to support our future physical educators grab dinner at chipotle sha
 agree chipotle is the goto place to eat why not support the mountain view cheer team whi
 until our next fundraiser head out to chipotle next tuesday to support minithonof your orc
 eat chance to support our future physical educators grab dinner at chipotle shawcedarjus
 n on eating dinner next wednesday night go to chinotle and let them know youre there to

If you take a look above at the group of tweets I pulled about Chipotle, it seems to be that a many of these tweets that include “support”, which is a large proportion of positive tweets about Chipotle, are about different fundraisers that are being held at Chipotle and the tweets are mostly inviting people to come and “support” by coming to the participating Chipotle. This is much more reassuring about the reputation of Chipotle, being that the word clouds were slightly more negative. This chart may represent that there is still a lot of positivity surrounding the company, despite its various scandals and obstacles it has encountered in the recent years. Since these tweets are from the beginning of this current year on, we know we are getting tweets that have ocured after most of the major negative publicity instances of Chipotle, showing that despite the issues Chipotle has had, many people still take on the opportunity to fundraise with the company and do good, which is beneficial to Chipotle’s reputation as well.

Negative vs. Positive Words in Tweets about Chipotle's Queso



Looking at the second set of charts regarding sentiment, which looks more specifically at sentiment regarding Chipotle's queso, there are sadly not many positive words being used in tweets regarding the new queso. On the other hand, there are many more negative words being used and at a higher frequency. For example, "garbage" or "trash" tend to usually be at the top of the negative side, which does not mean good news for Chipotle. The queso was supposed to be a new marketing technique to help get customers back that may have made the decision to frequent the restaurant chain less often perhaps due to the E. coli and norovirus breakouts that occurred in 2015 and 2016.

Final Thoughts

Based on all of the analysis above, Chipotle's bid to get back its diners with queso does not appear to have been received well based on the tweet text analysis that has been performed. Both the word cloud and text sentiment analysis showed much negativity surrounding the queso. However, Chipotle should not lose hope because as shown in the first sentiment chart, there is still a fair amount of positivity surrounding the company, primarily with fundraising. The emoji analysis chart also shows relatively positive results. But perhaps Chipotle should focus its efforts on continuing to enhance its humanitarian image in conjunction with promoting their efforts to ensure safe food preparation, rather than trying to promote its new queso. Additionally, Chipotle may want to increase their Twitter interaction in areas of the United States where there are Chipotle restaurants but a lack of tweets about Chipotle. Twitter could be a very valuable tool to the Chipotle brand to research its consumer base and help the company make smart business decisions.