Presentation

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Project Description

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.

Locations

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 Tweet about Chipotle in the USA
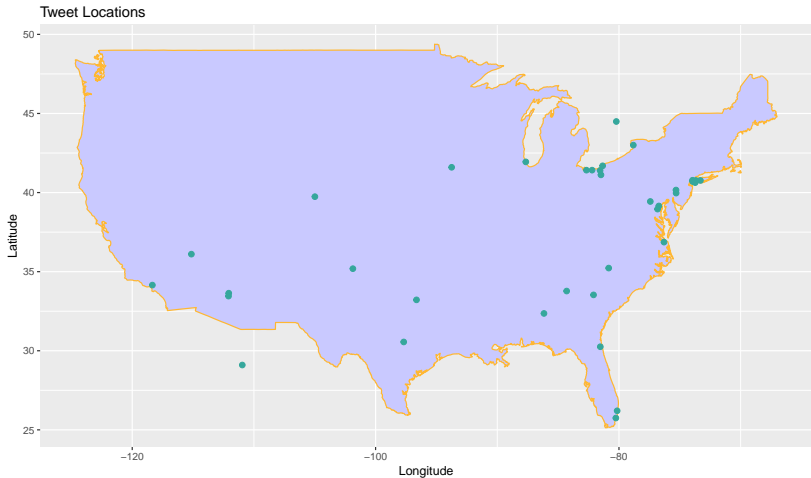
Tweet Locations

Where People Tweet 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 in the next slide bears a similar resemblance to the map above generated by the tweets, supporting the argument that people are tweeting about Chipotle less where there are less Chipotle restaurants.
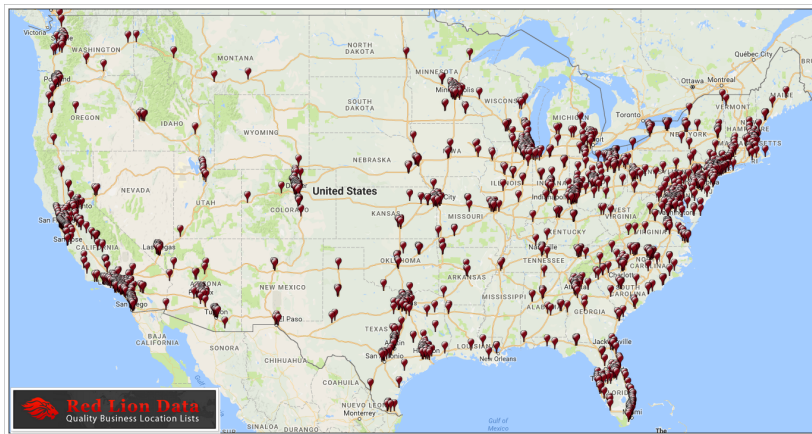
Figure 1: Chipotles in the USA

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/`

Word Cloud

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.

Most Common Emojis Tweeted with 'Chipotle'
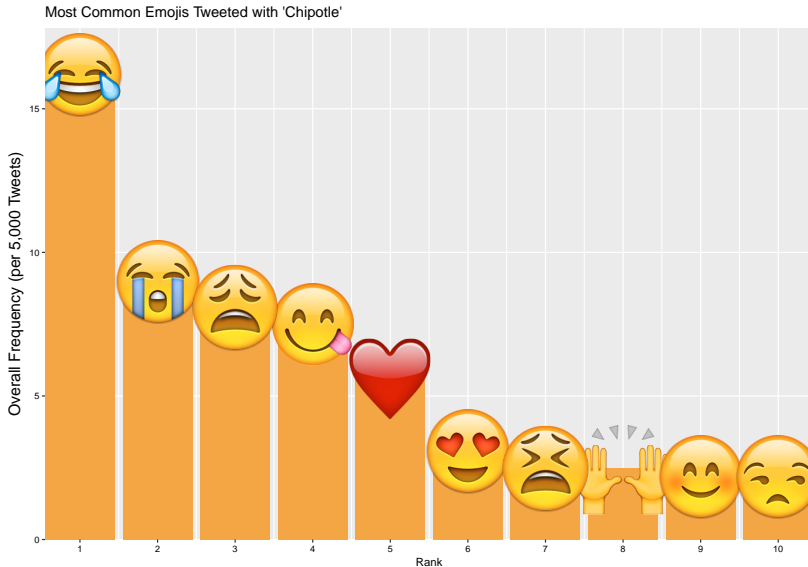
Emoji Analysis

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 examples 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 about Chipotle

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
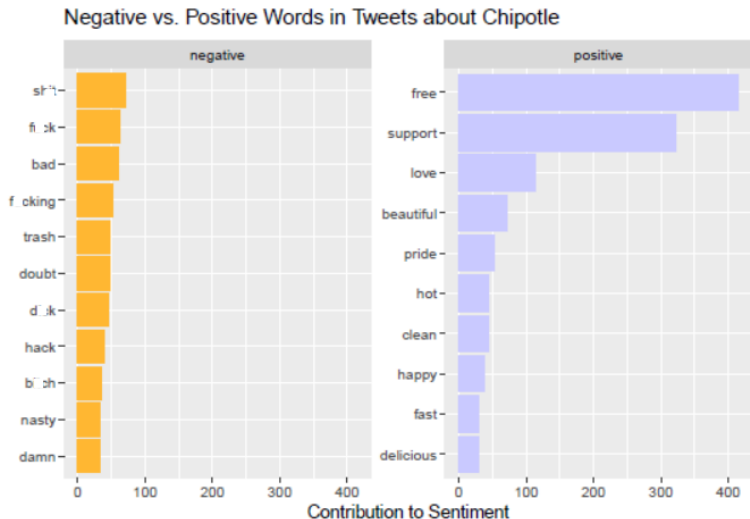
Sentiments Expressed about Chipotle

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 lower contributions of the negative words. "Support" is a very popular positive word being tweeted with "Chipotle". 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

come out and support the class oftonight at chipotle in holmdel frompm show the flyer when ordering

monday pm chipotle at th and harlemfundraiser forsay youre there to support andrew bowling

monday pm chipotle at th and harlemfundraiser forsay youre there to support andrew bowling

december th come to chipotle in burlington pmpm bring thepicture of the flyer below to support

monday pm chipotle at th and harlemfundraiser forsay youre there to support andrew bowling

go to chipotle in woodbridge to support yoursca all proceeds go towards promshow this flyer at the cash

almostmin until cheer chipotle night starts come out to support our girls to get to nationalspmpm

come support the mens lacrosse team tonight at chipotle

december th come to chipotle in burlington pmpm bring thepicture of the flyer below to support

december th come to chipotle in burlington pmpm bring thepicture of the flyer below to support

hey volleyballers get yourself some chipotle and support the

almostmin until cheer chipotle night starts come out to support our girls to get to nationalspmpm

almostmin until cheer chipotle night starts come out to support our girls to get to nationalspmpm

december th come to chipotle in burlington pmpm bring thepicture of the flyer below to support

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december th come to chipotle in burlington pmpm bring thepicture of the flyer below to support

if you reside in the alexandria groveton va area please come out and support the west potomac bball team fundrai

monday pm chipotle at th and harlemfundraiser forsay youre there to support andrew b

Sample "Support" Tweets

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 occured 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.
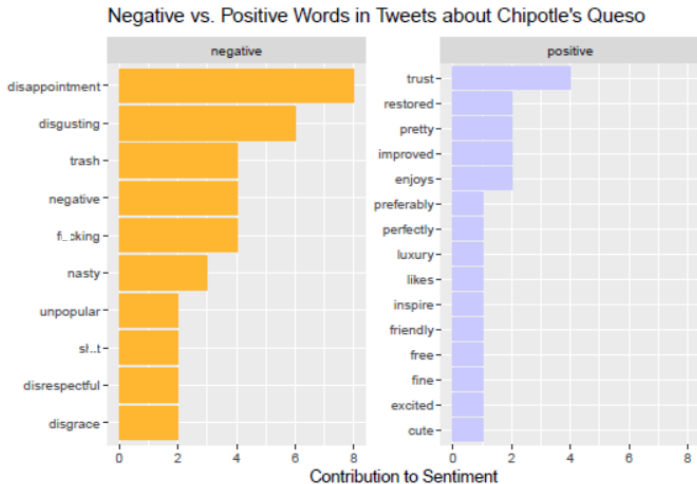
Chipotle Queso Tweets Sentiment

Figure 5: Chipotle queso tweets sentiment

Chipotle Queso Tweets Sentiment

Looking at the second set of charts regarding sentiment, which looks more specifically at sentiment regarding Chipotle's queso, there are sadly not as 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, "disappointment" and "disgusting" are at the top of the negative side, which does not mean good news for Chipotle. "Disappointment" having the highest contribution to negative sentiment in tweets indicates that people were expecting tasty queso but were let down once they tried it. Meanwhile, the positive sentiment words have lower contributions overall compared to negative. 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 breakouts.

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. 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.

Figure 6: Bon Appetit!