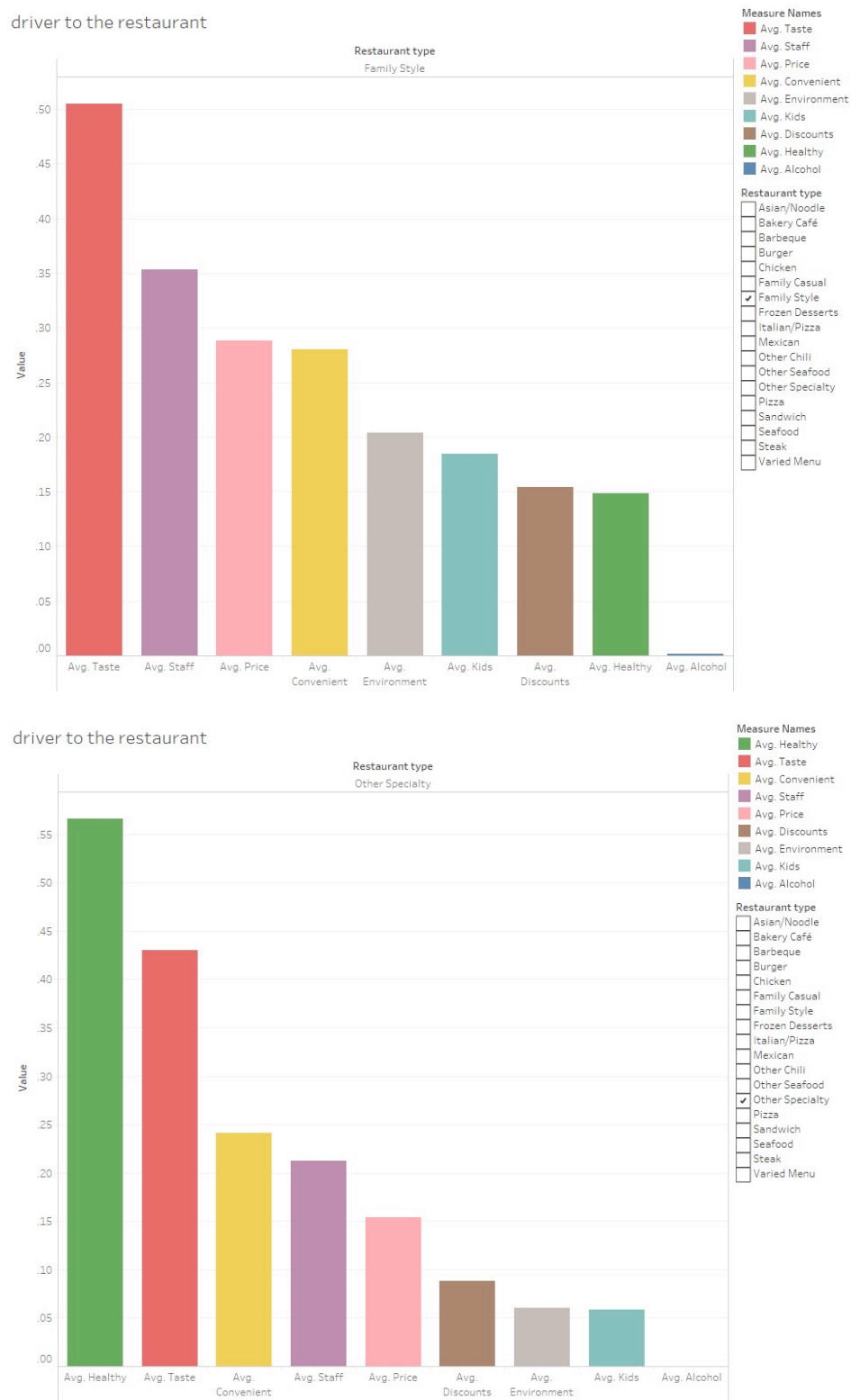


Overview:

Main effort was on using Random Forest and R Shiny to understand important factors. Additionally, we used Tableau to create visualization which might give us some different business insights on our objective.

Interactive dashboards which can tell us about current situation of certain type of restaurant in certain designated market areas:

1. Drivers to the restaurants.



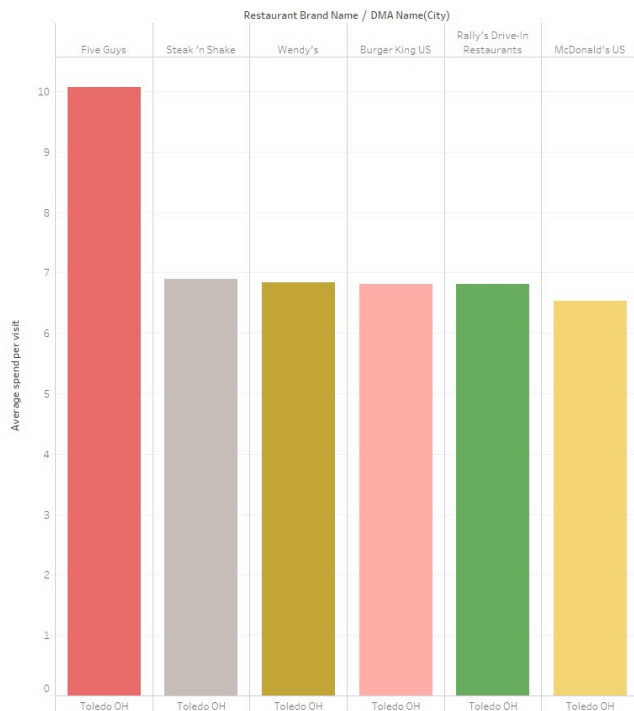
- From the above 2 images we could see for different type of restaurants, people are expecting different factors or we can

say there are different reasons for people to go to these restaurants.

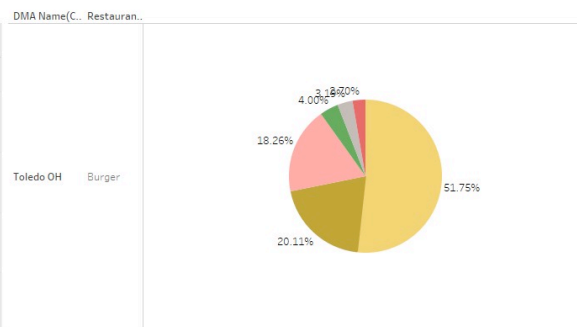
- For family style restaurant, except for taste factor, which is obvious, people go there because of staff and price concerns. However, for other specialty type restaurant, people become more concerned with health factor.
- Our suggestions for new entries to these two types of restaurants would be based on these visualizations. For family type restaurants, owners should focus more on training their staff to provide better service. For other specialty, owners might want to make their food healthier or even create a health image to customers through marketing efforts.
- Also, with the interactive tableau dashboard we can always choose from different types of restaurants to see the results and give suggestions.

## 2. Competitors and pricing strategy.

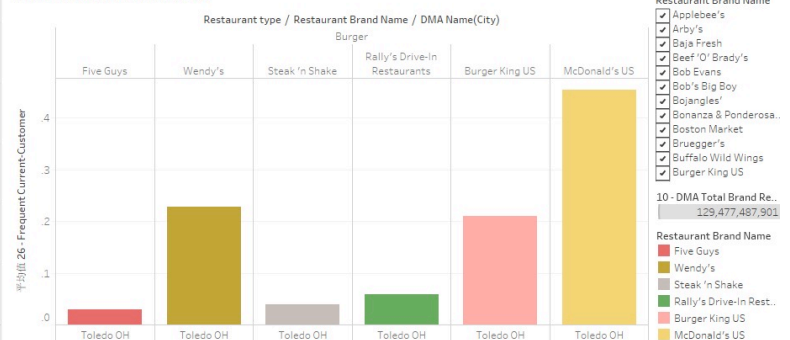
competitors and pricing



brand revenue



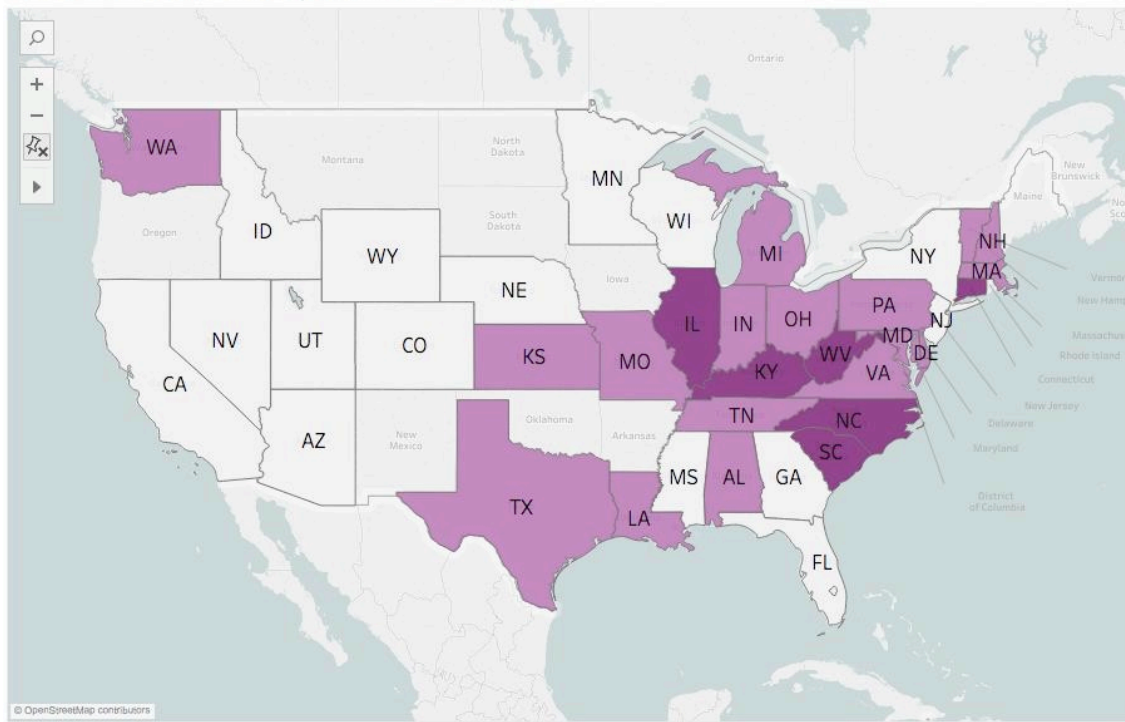
Likelihood to recommend



- The image above shows the competitors and competitors' customer satisfaction level in a certain area for a certain type of restaurant. In Tableau dashboard we can always choose which restaurant type we want to enter and a certain designated market area we want to enter to see how the potential competitors are doing and give possible insights about pricing strategy.
- In this example we choose Burger type and the designated market area as Toledo in Ohio.
- We can conclude that there are 6 main competitors in this market and generally McDonald's is doing the best and Five Guys has the worst customer satisfaction in terms of likelihood to recommend. In that case, we can somehow ignore the average spend per visit of Five Guys and look at other 5 competitors' pricing. It is obvious that all 5 competitors are expecting their customers to spend around 6.5 - 7 dollars per visit. Our recommendation is for new entries to price their products based on that in order to avoid unnecessary pricing wars which may cause failure for new entries.

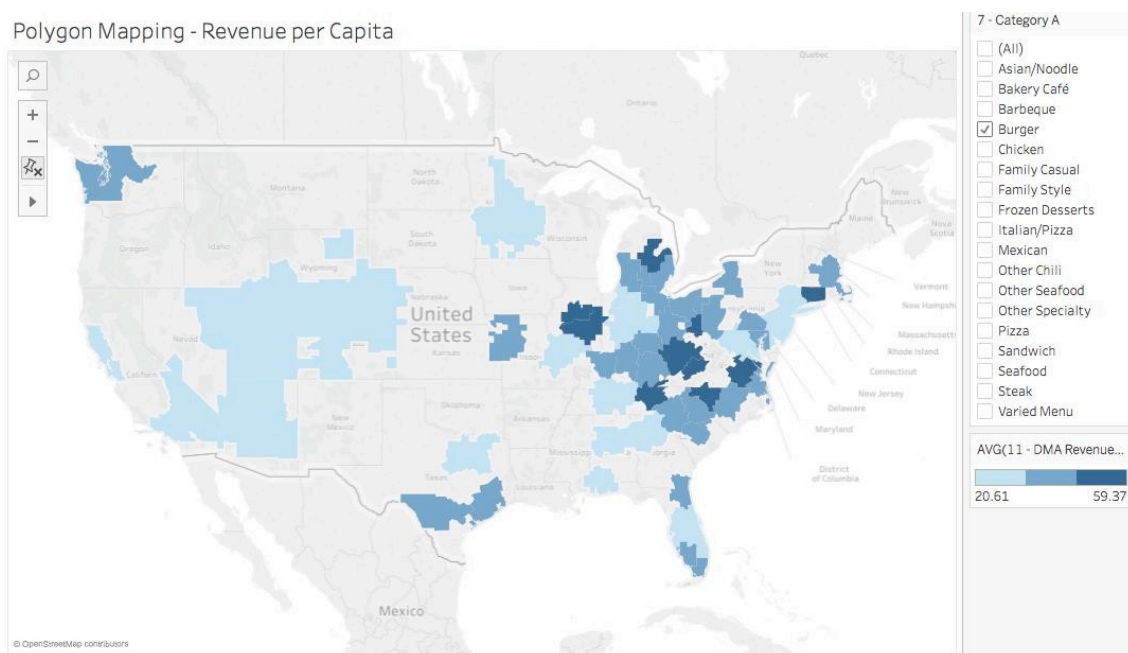
### 3. Mapping

DMA revenue per capita(for each category)



- From this location map, we can see how the Revenue per Capita is changing with each category of the restaurants. The states that are doing well can be easily determined, and the restaurant can look to enter the market classifying themselves on the basis of their food category. For example, from this screenshot, a burger type restaurant looking to expand its business can see easily which states are the most profitable - Illinois, Kentucky, NC and so on.

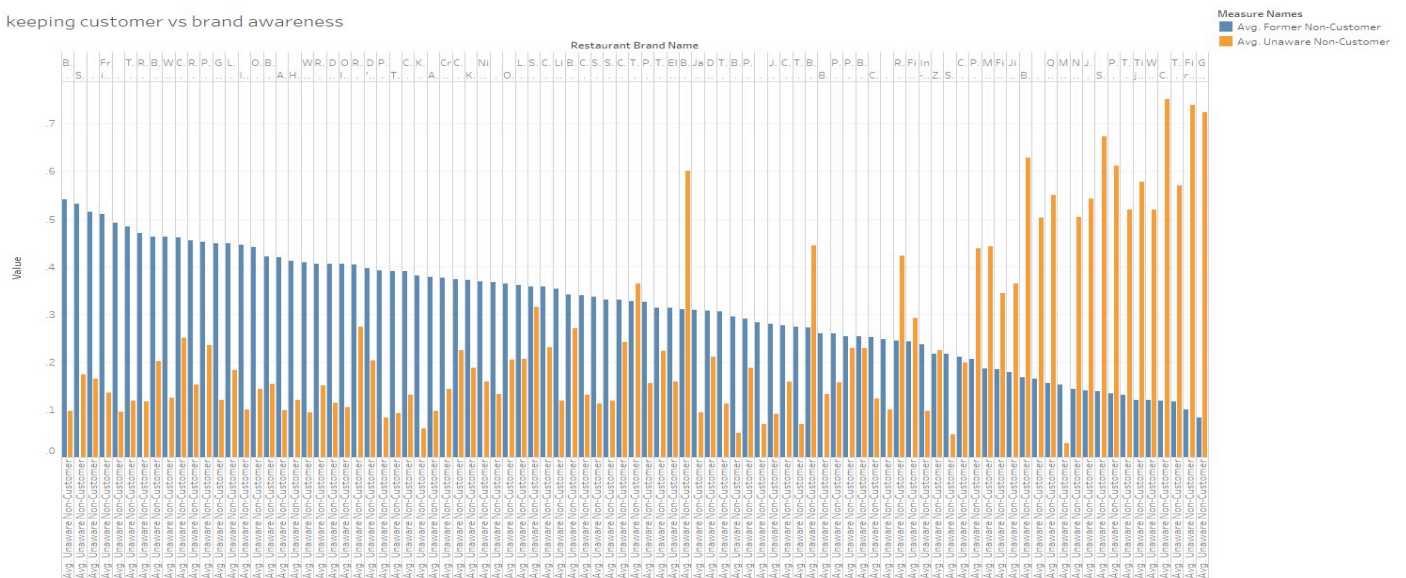
Polygon Mapping - Revenue per Capita



- To go deeper, the polygon mapping shows us even with the exact zip codes usually where the restaurants are located at. Which helps hugely in choosing the next location. Because as we have seen from our Random Forest insights, Convenience is a major driver for a customer in choosing his restaurant.

#### 4. Interesting finding.

keeping customer vs brand awareness



- Among all brands in our dataset, we had some interesting finding.
- The blue bar in the above image shows the percent of former customers among all non-customers. From left to right it decreases means that the restaurants on the right side are performing good in terms of keeping existing customers. On the other hand, the orange bar shows the percent of unaware customers among all non-customers. The higher the bar is, the worse the brand is performing with making their brand recognizable by the non-customers.
- If we ignore a few outliers such as McDonald's, which are really big brands that have high awareness while also good at keeping old customers, there is a clear trend that restaurants who are performing very good at keeping their customers (located on the right side of the image) don't really have a good brand awareness among non-customers.
- Our suggestion for this would be that for those 10 restaurants on the right side, including 'The Habit Burger Grill', 'Cosi', 'Waba Grill' and etc., to spend more effort on advertising or marketing to increase their brand awareness. For those on the left side, it is clear they are relatively bad at keep their customers. However, we don't have any data to suggest the reason which caused that. Therefore, we could only say they are performing bad in terms of keeping old customers and they should figure out a way to solve it.