

To Setup or not to setup a restaurant

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Introduction

Abeledata Inc., a client wants to extend its foodjoint/restaurant business to other cities in the Manhattan, NY. As such she plans to open one of their restaurant businesses in a neighborhood in Manhattan, NY. However, there is a problem! Though NY is densely populated not all, she would still need to know where she can attract more customers. Said differently, as a profit making business Abeledata would want to open the foodjoint/restaurant business in particular location that will ensure she attracts a large pool of customers and subsequently make good sales.

It is up to us (Data Science Team) to determine where Abeledata Inc should locate or position their business in order to achieve their profit-making goal and customer base.

Data

To tackle Abeledata Inc.'s problem, we will make use of the following list of data:

California neighborhood data location data which encompasses the latitude and longitude coordinates of the area data on office venues, schools, other restaurant venues By leveraging this data and other data our team is likely to get, exploring it and using some machine learning algorithms, we will help our client better decide which vicinity, locality or neighborhood in California to open her restaurant.

Methodology

Our team explored the NY city location data, particularly the Manhattan neighborhood. We used data from Foursquare to select some venues in the Manhattan neighborhood that we thought might be good indicators of opening restaurant or any food joint.

To this end we looked at particularly, shop & service category, food joints category and the offices category from Foursquare. The idea is that, we expect employees that work in offices make great customers if they find a good restaurant within walking distance.

However, as the food joint category will mean exploring towns in the Manhattan neighborhood that are populated with food services, we proposed assigning weights to each category. A negative weight to the food joint group as this negatively affects our client's profit-making goal, positive weights to the shop & service group and office group as they make good customers.

Results

Our team obtained a score for each neighborhood in Manhattan. The score was obtained this way:

- count the food joints, shops & services and offices in a particular neighborhood within a prespecified radius.
- Apply weights to each category and then add them up to obtain the score. A weight of -1 was applied to food joint group, weight of +1 was applied to shop & service group and lastly a weight of 2 applied to the office group.

We then ranked each of the neighborhoods in descending order based on the score. Below is the list of the top five neighborhoods.

Neighborhood	Score
Midtown	54
Soho	46
Morningside Heights	42
Flatiron	33
Gramercy	24

Discussion

Though we tried many different value of weights to be finally assigned, we noticed that despite the weights assigned Midtown and Soho remained in the top three.

Future work will focus on a much more appropriate way to assign weights. As one can tell that weights suggested are subjective.

Conclusion

We propose that our client, Abeledata Inc. chooses between Midtown and Soho to setup her restaurant or food joint. However, we will put all stakes on Midtown.