Houston
Health Food Related Restaurant High-Potential Locations

6/8/2020

Introduction

The Business Problem: One of the biggest challenges for any restaurant is finding the right location. As they say in Real Estate, the three most important things are location, location, location. This would be especially true for healthy food alternatives to fast food that are more of a niche product with a more limited clientele than traditional fast food. The Business Problem I will be solving is to identify high-potential areas in Houston for opening healthy food alternatives to fast food.

Who would be interested: The hypothetical interested party would be an investor looking to open a restaurant that is a healthy food alternative to fast food.

Data Sources and Uses

I will use Starbuck locations in the Houston area from FourSquare as starting point because Starbucks create traffic, Starbucks corporate picks good locations for their stores, and Starbucks clientele are affluent, health conscious and ecologically aware (from the Motley Fool 6/27/2018).

I will use the Neighborhood GIS data from Houston MyCity web site combined with Starbucks data to determine high potential Neighborhoods.

I will use this FourSquare web page of Venue Categories:
Juice Bar
4bf58dd8d48988d112941735
Health Food Store
50aa9e744b90af0d42d5de0e
Poke Place
5bae9231bedf3950379f89d4
Smoothie Shop
52f2ab2ebcbc57f1066b8b41
Vegetarian / Vegan Restaurant
4bf58dd8d48988d1d3941735

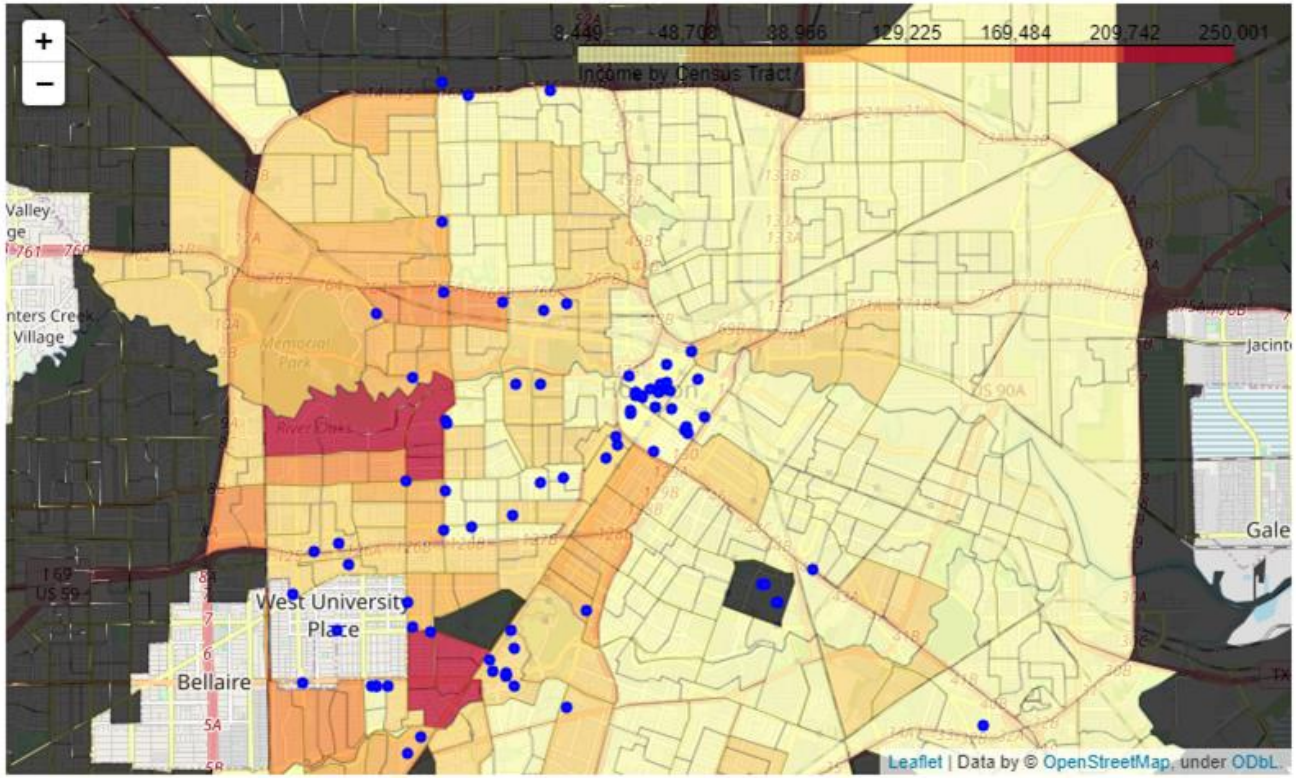
I will use this FourSquare web page of Chain Codes:
Starbucks 556f676fbd6a75a99038d8ec

I will then determine for those Starbucks locations in high potential Houston neighborhoods the availability of health food related venues near them from FourSquare. The lower the availability of health food related venues near a Starbucks, the higher the potential for a new Health food venue in that area. I will then cluster areas by proximity to other Starbucks and away from Health venues to identify high opportunity areas.

Data Acquisition

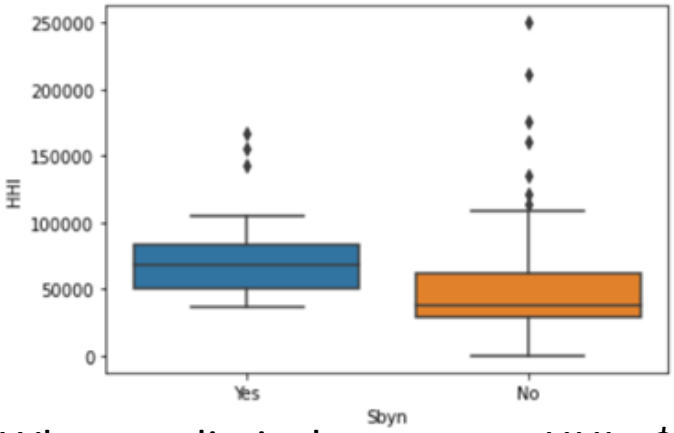
Census Tract level data and Land Use data was downloaded from Houston's MyCity web site. Starbucks and Health Food Venue data was retrieved from FourSquare.

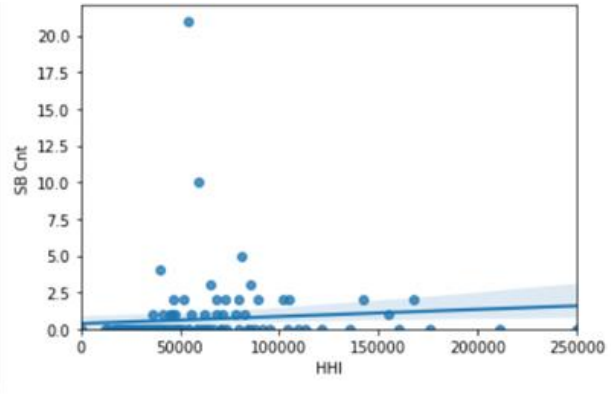
Choropleth map of Household Income by census tract and Starbucks locations



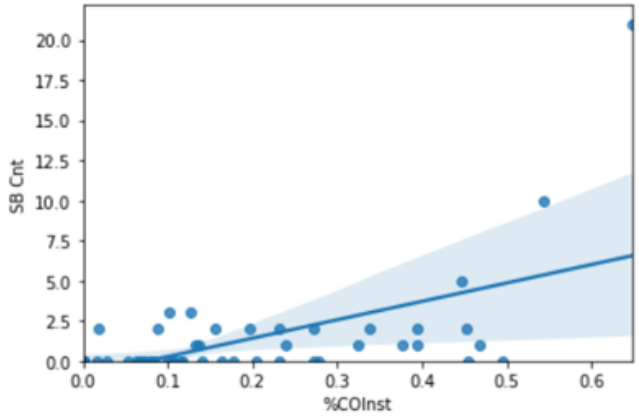
Exploratory Data

Starbucks locations are loosely correlated with Household Income, but largely in tracts with Income over $50,000





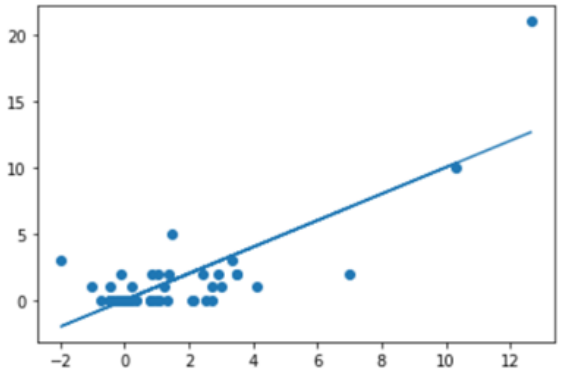
When we limit the tracts to HHI> $50,000 we can see a better correlation with the percent of the land use that is Commercial, Office or Institutional and the correlations by factor:



HCT	-0.578959
SINGLEFAM	-0.230185
HHI	-0.170480
INDUSTRIAL	-0.032001
AGRICULTURE	0.097685
Pop	0.130236
TRANS	0.180907
MULTIFAM	0.215151
PubInst	0.331916
UNDEVELOPED	0.421111
OFFICE	0.562772
%COInst	0.575434
COMMERCIAL	0.619708
COInst	0.736006
SB Cnt	1.000000

Predictive Modeling and Results

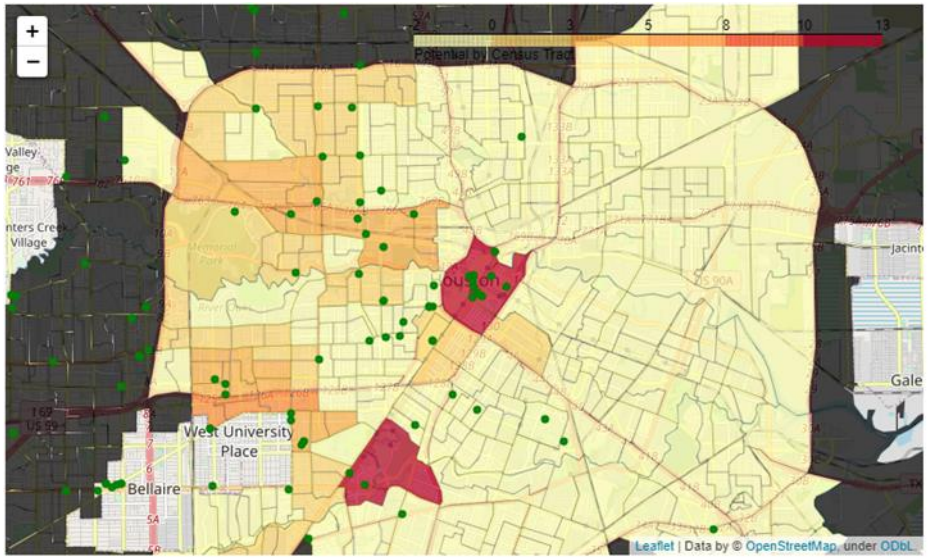
Ridge Regression Model had a Correlation of .636



Top 10 Predicted Opportunity tracts

	Values		
HCT	Sum of SBPredicted	Sum of HFV	Sum of HFVar
313100	10.3	2	8.3
411800	7.0	2	5.0
411502	4.1	0	4.1
312500	2.7	0	2.7
411000	2.7	0	2.7
510900	3.3	1	2.3
411300	2.1	0	2.1
511100	2.1	0	2.1
100000	12.6	11	1.6
510600	3.5	2	1.5

Folium choropleth map of existing Health Food venues overlaid on tracts by potential:



Conclusion

This study analyzed the locations of Starbucks venues in census tracts in the inner loop of Houston to develop a predictive model that would be useful for selecting locations for a new Health Food restaurant and was able to identify numerous census tracts that have high potential.