Fast Food Nation: Who's Targeted in Poughkeepsie?

Introduction

The rise of fast food and its strategic locations has many implications for the widening gap in the health statistics and resource availabilities between wealthier majorities and socioeconomically disadvantaged groups, especially when thinking about food deserts.

This project analyzes the spatial relationships between fast food locations and several variables which may explain these strategic locations in an attempt to determine the types of populations fast food chains are targeting. The variables are: % minorities, % of households below the poverty level, % of people who walk, bike or take public transportation to work, % of people under 19 years of age, housing values, per capita income, and school locations.

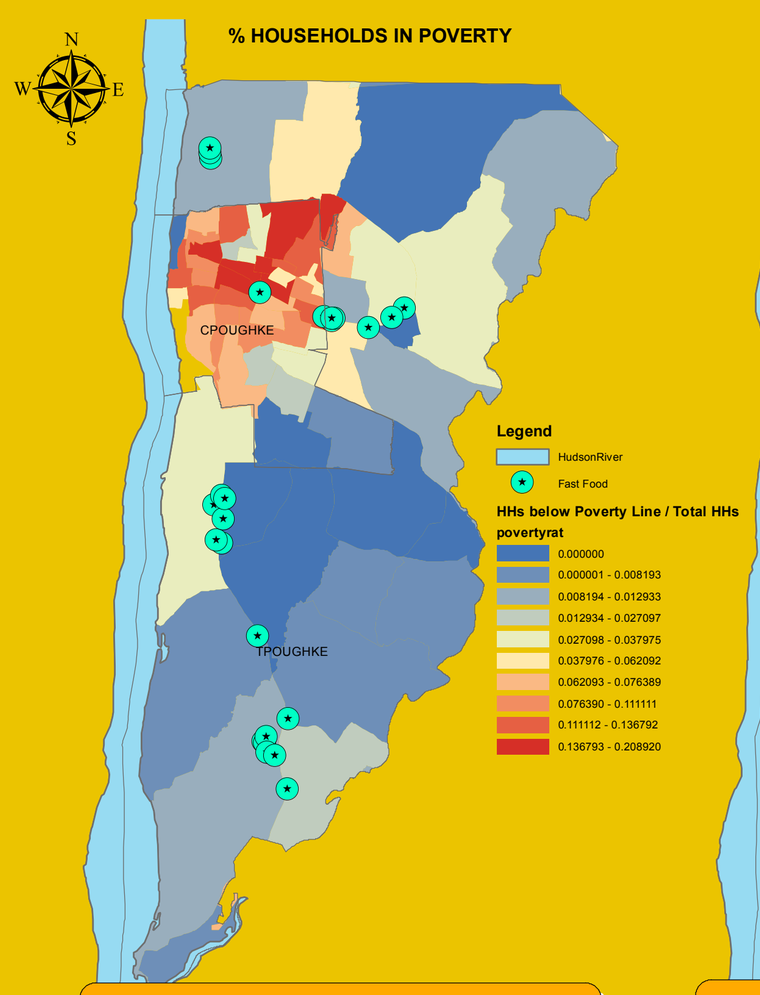
Methods

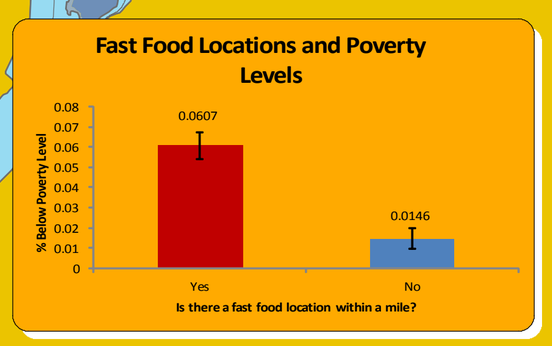
(1) schools and food locations extracted from Google Earth and imported using XTools Pro
(2) data cleaned up by merging data points, deleting duplicates, extracting only relevant points to new layers
(3) calculate ratios for variables of interest with new fields
(4) select by location of polygons that intersected within 1 mile radius of fast food points
(5) assign nominal value to polygons that do and don't have nearby fast food places (0/1)
(6) summarize average and standard deviations of 0/1 polygons
(7) normalize standard deviation and used to create graphs in Excel
(8) fast food locations buffered to 1 mile radius and proportion of schools within buffer calculated
(9) symbology used to represent 10 quartiles

Conclusions

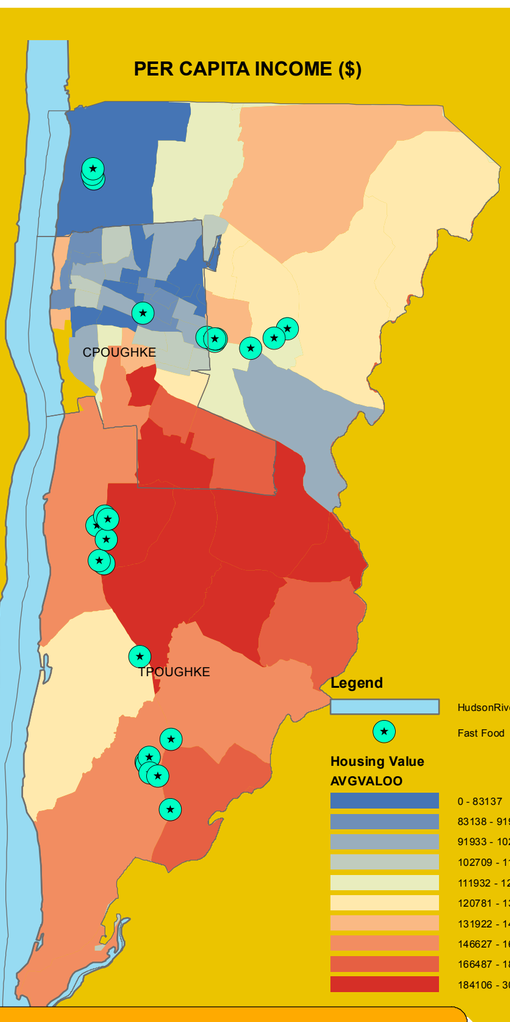
(1) sample groups for households below the poverty level, "limited" transportation methods to work, per capita income, housing value, and minority populations shown to be different due to differences in means and standard errors (no overlap)
(2) the age variable did not show any significant differences, as means and standard errors overlapped
(3) fast food locations do correspond to higher concentrations of socioeconomically disadvantaged minorities (in terms of income, housing values, and mobility)
(4) age does not explicitly affect locations but locations of schools does

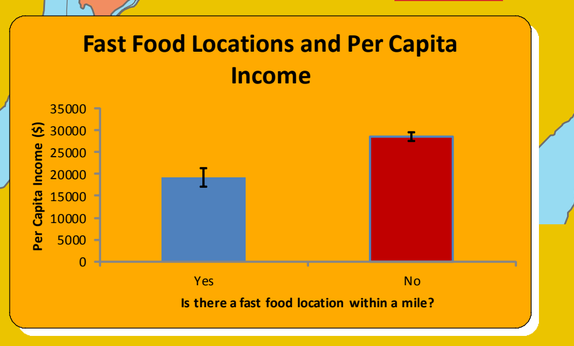
% HOUSEHOLDS IN POVERTY



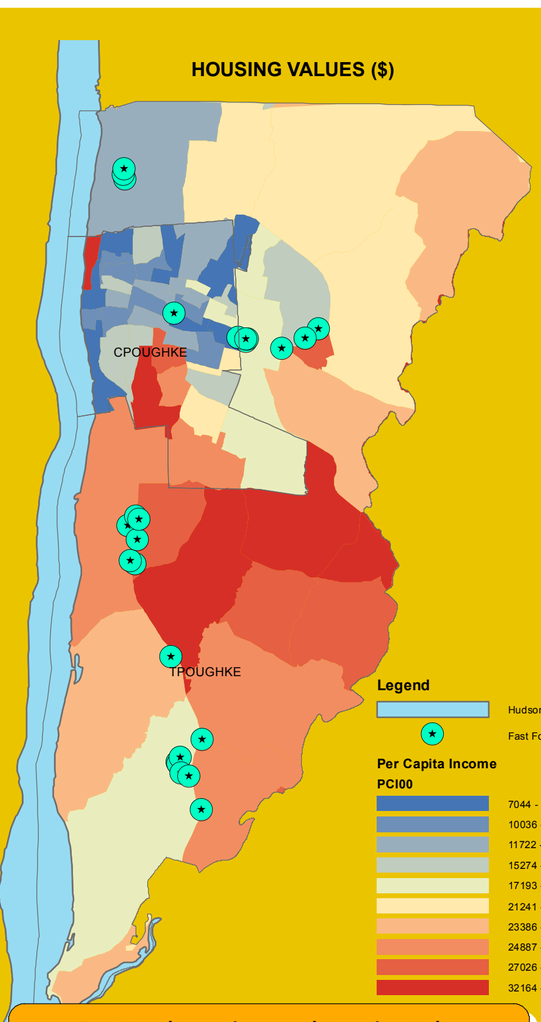


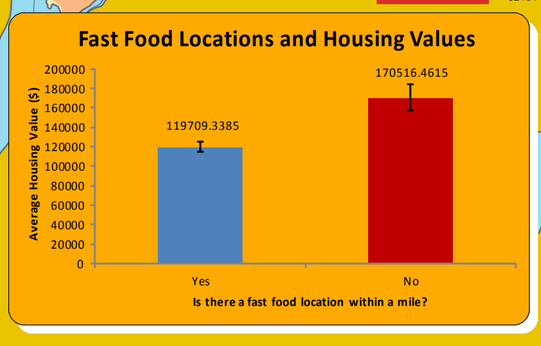
PER CAPITA INCOME ($)



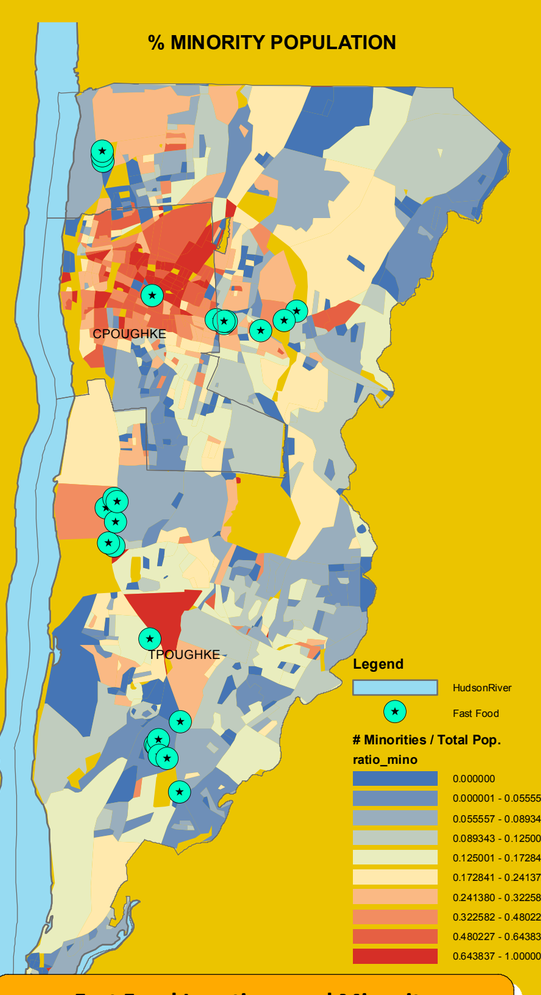


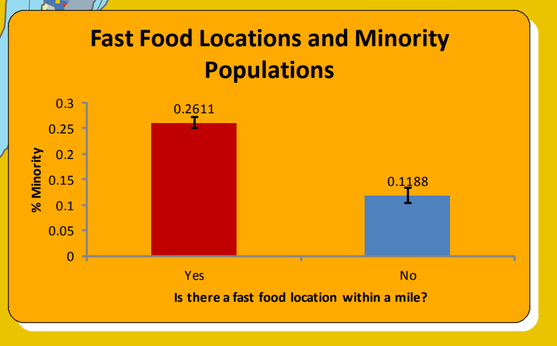
HOUSING VALUES ($)



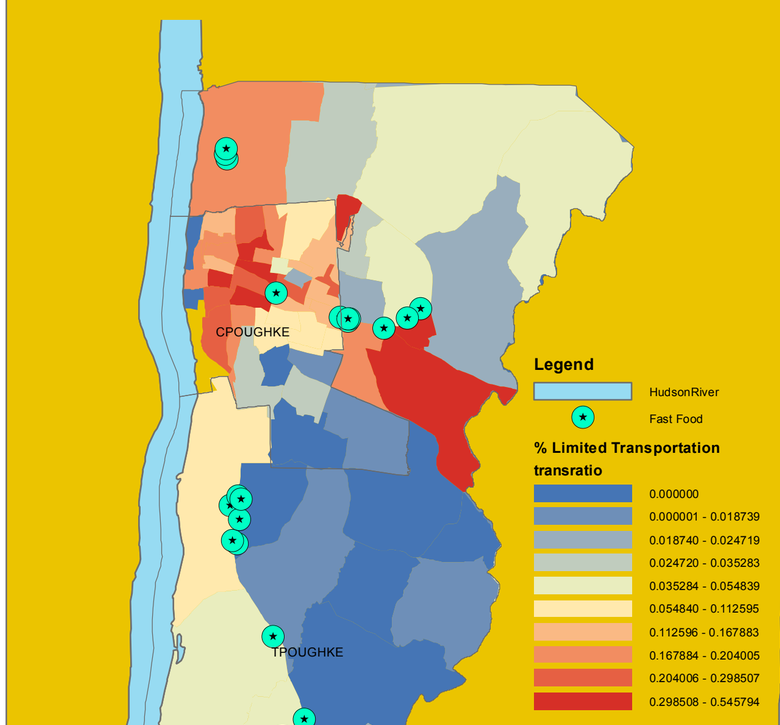


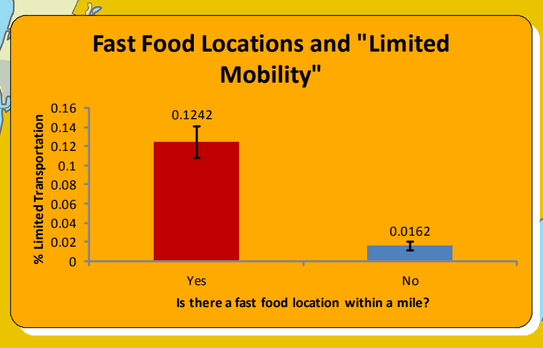
% MINORITY POPULATION



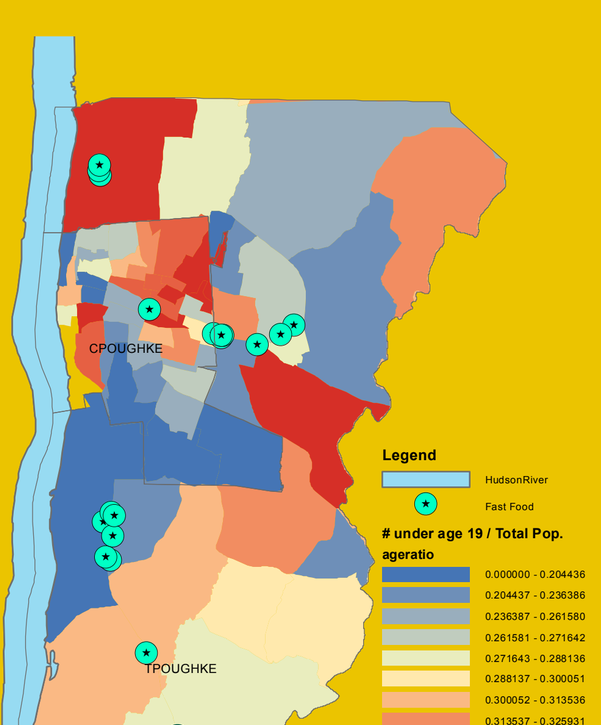


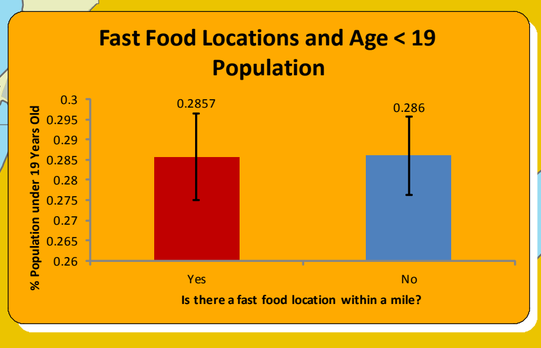
% LIMITED MOBILITY (WALK, BIKE, PUBLIC TRANSPORTATION)



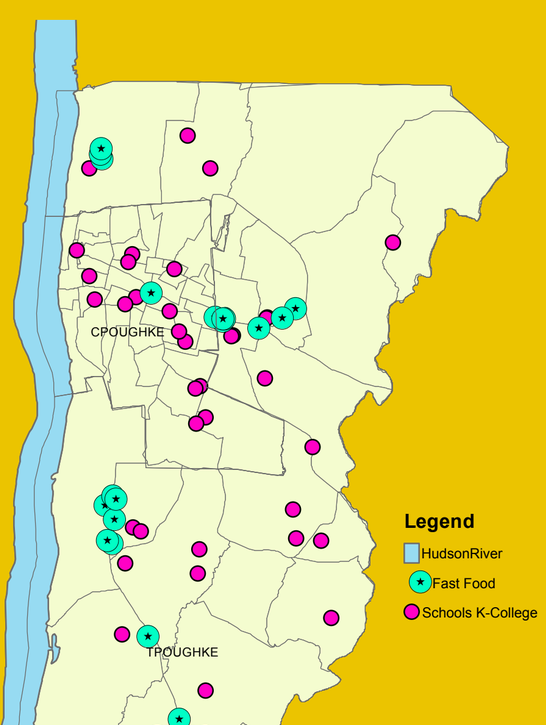


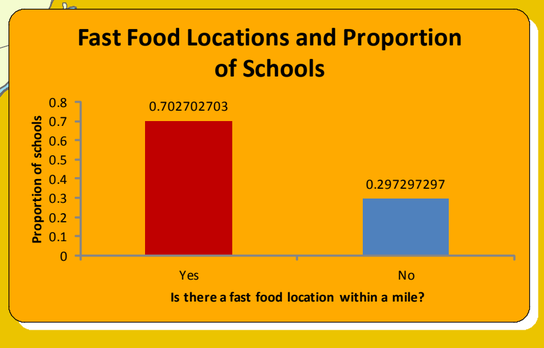
% YOUTH (LESS THAN 19 YEARS OLD)





SCHOOLS AND FAST FOOD LOCATIONS





Sources of Error

(1) sample very small
(2) assumptions made regarding data
(3) data from Google Earth not necessarily correct and/or complete
(4) statistical methods

Sources
Google Earth: school and fast food points
Dutchess County OCIS: municipalities
US Census: 2000 Census

Projection: NAD 83 UTM Zone 18N

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GEOG 224

0 1.25 2.5 5 7.5 10 Miles