

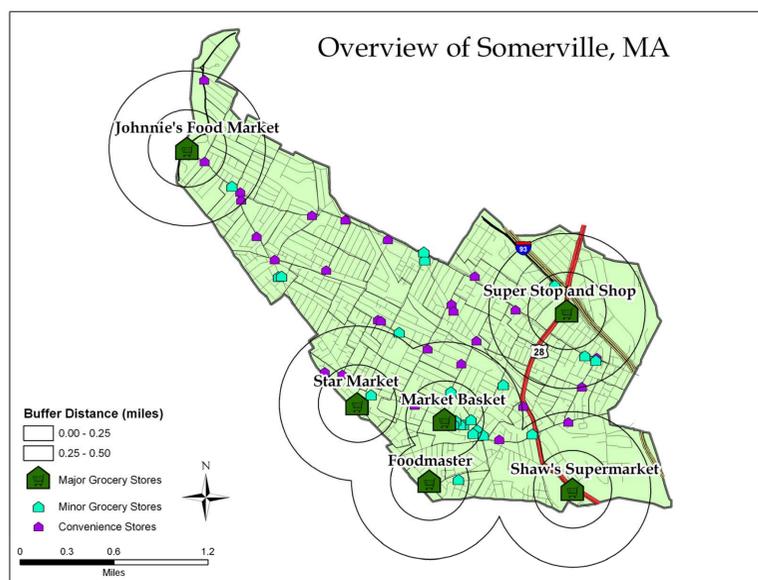
Socio-Economic Analysis of Food Accessibility in Somerville, MA

Overview

Evidence suggests that limited access to “healthy” food options can lead to diabetes, heart disease, and other medical conditions. In urban settings, disparities in food distribution can lead some neighborhoods to purchase groceries at non-ideal locations: convenience stores and small food markets. Socioeconomic factors affecting the possible distribution of these food retailers was analyzed using GIS.

Study Area

The area of Somerville, Massachusetts contains 6 major grocery retailers, with many additional small food retailers and convenience stores. I - 93 and Route 28 run through Somerville's eastern portion, which is bounded to the north by the Mystic River. Quarter and half mile buffers are as shown.



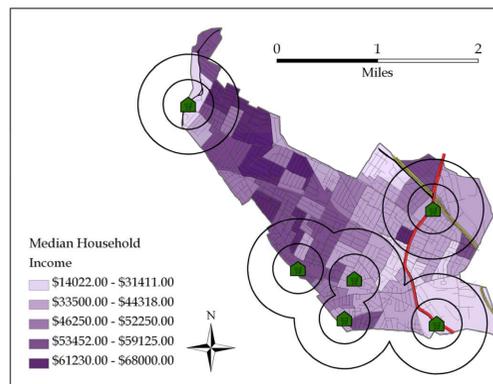
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Methods

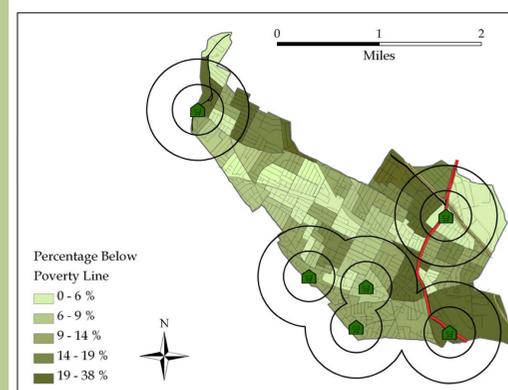
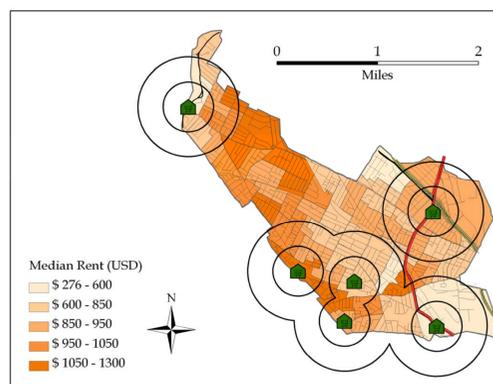
Data was obtained through the Massachusetts GIS website, MassGIS. All socio-economic status data was derived from the 2000 United States Census, and was based off of block groups. Geocoded information on store type, shelf space, and location was obtained from Aliza Sandburg, who previously located Somerville stores. Once imported, a 0.25 and 0.5 mile buffer was established around each major grocery store such that SES data for the surrounding block groups could be analyzed.

Economic Status

Distributions of various economic factors show some spatial correlation with major grocery stores. Most areas with low income families are located within the 0.5 mile buffer, with two stores, Johnnie's and Shaw's located within the lowest bracket of block group income. One of the areas of concern, the Mystic River Housing Project, lies adjacent to Super Stop and Shop on the border of the half mile buffer, and shows both low incomes, median rent values.



Areas further removed from major grocery retailers generally show higher incomes and rent values, contrary to expectation. Increasing physical proximity, and thus general availability of healthy food options, did not show an increase in economic status. Housing values did not necessarily follow the same trend as poverty percentages and gross income, with some areas close to the available supermarkets having greater property values.

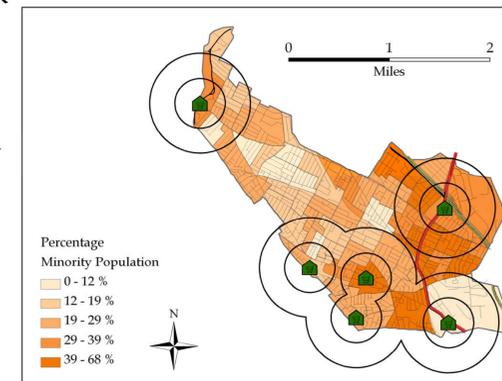


Social Factors

Areas within the buffer region showed trends in various social factors as well as economic factors. Eastern Somerville has high immigrant, minority populations, many of whom have not obtained citizenship.

Education showed a distinct spatial distribution, with large percentages of these populations coming from backgrounds with little or no education. It is possible that this lack of education could contribute to the utilization of non-healthy food alternatives in lieu of grocery stores.

Children are a key at risk demographic group for type II diabetes, and are often unable to make their own decisions with regards to healthy food alternatives. In Somerville, block groups located near supermarkets showed the highest numbers of at risk children.

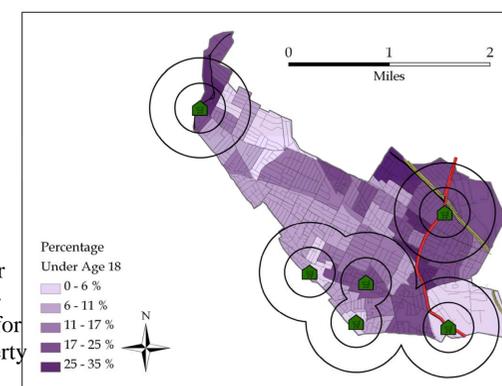


Conclusions and Recommendations

Blockgroups located furthest away from an available grocery store tended to have the highest economic status, and was typically composed of white, educated individuals. As such, the further removed from major grocery stores one travels, economic status increases. Further studies into the viability of public transportation to these locations might show relative difficulty of lower income populations to utilize these stores, regardless of proximity. It is possible that the prevalence of less healthy alternative food sources makes them a more viable option for the lower income community in Somerville.

Sources & Acknowledgements

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