altREU: Exploring Food Deserts and Environmental Impacts on Health in Chicago and Oregon

Abstract
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Food deserts are defined as, "an impoverished area where residents lack access to healthy foods". This lack of access can be due to a combination of socioeconomic, geographic, and food-related variables, and has been proven to impact the health of residents in the area. In this project, several statistical and machine learning techniques are used to model the impact of food desserts and various other factors on health outcomes, including diabetes and obesity rates, in both the different neighborhoods in the City of Chicago and the various counties in the state of Oregon. The models are then used to determine the influence of specific variables on health outcomes, in order to help evaluate potential solutions.

There have been studies conducted on the impact of food deserts on health in both Oregon and Chicago, but our goal was to incorporate more variables in order to create a more comprehensive picture of what environmental and food-related factors affect health outcomes most significantly. By combining manual data exploration and machine learning models, this unique, cross-sectional approach takes into consideration a wide array of variables and also uses different geographical areas to compare and contrast results.

The findings from this project can benefit the communities in both Chicago and Oregon, and perhaps provide useful insight to public health or government officials. In exploring the impact of different variables on health outcomes, the ones found to be most important can be specifically addressed in an attempt to improve community health and work to reduce both food deserts and diet-related health outcomes.