

ESTIMATING THE EFFECT OF MOBILITY AND FOOD CHOICE ON OBESITY

Geoffrey Battista

Abstract

A majority of Americans are overweight, with nearly one-third of the total population classified as clinically obese (BMI > 30). The prevalence of obesity and its related health consequences has evoked a considerable response by policymakers, but the condition has been difficult to address due to its various causes. Previous studies have indicated that the topographical features of the built environment affect individual mobility and food choice, which in turn impact caloric energy balance. This current research contributes to deeper understanding of this relationship by considering northern New England, a region with a unique rural and seasonal environment. The analysis will estimate the size and significance of individual mobility and food pattern choices on caloric energy balance while accounting for both seasonality and individual perceptions of navigability of the built environment in northern rural climates.

Panel data from 654 individuals residing in Vermont, New Hampshire, and Maine were gathered through the “Transportation in Your Life” survey from 2008 through 2009. The panel data set contains individual level data, including both time constant and time (seasonal) variant variables. The geospatial characteristics of the built environment – grocery stores, convenience stores, fast food and full-service restaurants, recreational amenities, and trails – were incorporated into the model using geographic information systems. Panel participant accessibility to features of the built environment was assessed through as-the-crow-flies buffering and real-distance network analysis from geocoded participant addresses. While the final models have not yet been estimated, previous results suggest rural residents are both more car-reliant and more likely to rate their travel time to various amenities as “too long,” a combination of factors that discourages active commuting and inhibits caloric energy balance.

Keywords: obesity, mobility, energy balance, built environment, food systems, complex systems