Essays in Health Economics: A Focus on the Built Environment

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Summary of Dissertation

My dissertation analyzes how individual behaviors and health outcomes interplay with surrounding built environments. In particular, I conceptually focus on travel behaviors and accessibility. My first essay quantifies decreases in health-related activity participation due to commuting time, my second essay tests for associations between urban sprawl and food insecurity, and my third essay focuses on adolescents' decision to walk or bicycle to school.

My dissertation's primary essay focuses on time constraints due to commute (and labor) time and trade-offs with exercise and dietary activity participation using the American Time Use Survey (2003-2008). Specifically, I test the hypothesis that longer commutes prohibitively limit leisure time available as inputs to health production. I find small but highly significant associations between commuting time and time spent exercising, preparing food, sleeping. Additionally, I find commuting trade-offs often exceed labor time trade-offs on a per-minute basis. Longer commutes are also associated with an increased likelihood of non-grocery food purchases and substitution into lower intensity exercise activities. To the possibility of intertemporal substitution I find evidence of increased sleep time, only, during non-work days. Lastly, I find the association between urban sprawl and greater body mass persists even after controlling for commute time. Recognizing self-selection bias, I also utilize daily metropolitan traffic accidents as instruments which exogenously influence commute length on that day.

My dissertation's second essay investigates associations between urban sprawl and food insecurity using data primarily from the Behavioral Risk Factor Surveillance System's Social Context Module. This research was motivated by theories linking urban sprawl and obesity to healthy food inaccessibility in poor neighborhoods, and similar theories explaining "paradoxical" occurrences of obesity and food insecurity within the same household. I analyze how the likelihood of food insecurity varies over urban sprawl, with an emphasis on occurrences of joint obesity/insecurity outcomes. I find evidence of strongly negative associations between urban sprawl and food insecurity, particularly that food insecurity is greatest where road connectivity is less. I find no evidence that the likelihood of joint outcomes varies over urban form.

My dissertation's third essay identifies determinants of adolescents' decision to walk or cycle to school. I utilize a GIS-encoded dataset and evaluate an array of individual, school, and community-level factors. The paper then investigates the extent to which actively traveling to school impacts adolescents' involvement in exercise and sports activities, to which no relationship is found. This result is significant because fails to support a suggested policy prescription that inducing students to walk or bike to school creates an "inertia" effect which elevates physical activeness throughout other portions of students' time It would instead be more efficient to redirect efforts to increase adolescents' activity towards other avenues.