Travel and the Built Environment
Insights from the Sprawl Index and Neighborhood Types

RESEARCH QUESTION
Which measures best capture the relationship between the built environment and travel behavior?

BUILT ENVIRONMENT MEASURES

ACTIVITY DENSITY
Measure: Continuous; Two components: population and employment density
Scale: Census block/tract, county, MSA
Availability: National
Source: U.S. Census

SPRAWL INDEX
Measure: Continuous; Four factors: density, land use mix, activity centering, and street connectivity
Scale: Census tract, counties, MSAs, and UZAs
Availability: National, non-rural
Source: Voulgaris et al. (2017) goo.gl/Xdpgr7

NEIGHBORHOOD TYPES
Measure: Categorical; Five factors: density, diversity, transience, established, accessibility
Scale: Census tract
Availability: National
Source: Voulgaris et al. (2017) goo.gl/Xdpgr7

DESCRIPTIVE ANALYSIS

VMT per person
Walk Trip (%)
Transit Trips (%)
Trip length (miles)

MULTIVARIATE ANALYSIS
For each dependent variable, four separate models with different explanatory variables:
- Model 1: Activity density
- Model 2: Sprawl index
- Model 3: Neighborhood type
- Model 4: Sprawl index & Neighborhood type

Control Variables:
- Age (and age²)
- Sex
- Race/ethnicity
- Employment
- Internet use
- Education level
- Number of adults
- Number of children
- Household income (log transformed)

Assess fit with Akaike Information Criterion (AIC)

RESULTS
Relative model fit (% worse AIC than best-fitting model)