ABSTRACT OF THE DISSERTATION

Unraveling the Complexity of Land Use and Travel Behavior Relationships:
A Four-Part Quantitative Case Study of the South Bay Area of Los Angeles

By

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Characteristics of the built environment, such as the mixture of land uses, transportation infrastructure, and neighborhood design, have often been associated with reduced automobile use and increased walking and transit use. However, a significant gap remains in our understanding of travel behavior, especially with respect with social environmental and attitudinal factors influencing travel, such as crime rates and the perceptions of walking. This dissertation, comprised of four empirical essays, explores the complex relationships between the built and social environment and neighborhood travel by focusing on non-work travel for individuals sampled from eight communities in the South Bay Area of Los Angeles County.

In the first essay, I examine claims made by proponents of New Urbanism that traditional neighborhood designs promote walking and discourage driving by comparing automobile and walking trip rates for mixed-use centers and auto-oriented corridors. The results showed no discernible differences in individual driving trips between these two types of neighborhoods while more walking trips were reported in mixed-use centers. Therefore, the results both support and challenge New Urbanist claims.
The second essay examines the interactions between race/ethnicity, demographic change, and travel behavior by comparing driving and walking trips across racial and ethnic groups. The results showed that African-Americans took fewer driving trips and Asians walked less compared to non-Hispanic whites, and that Hispanics who walk are more sensitive to demographic changes in their neighborhood than other groups.

The third essay focuses on crime and perceptions of safety and how they impact walking behavior. After taking sociodemographic and built environment factors into account, violent crime rates had a strong deterrent effect on walking across race, income, and gender groups, while perceptions of neighborhood safety varied.

In the fourth essay, I focus on whether the built environment encourages walking above and beyond individuals’ attitudes toward walking. By comparing individuals with positive attitudes toward walking with those with neutral or negative attitudes, the results showed that individuals with positive attitudes were more responsive to built environment characteristics than those held negative attitudes. These findings suggest differences in walking behavior are more strongly shaped by personal attitudes than the built environment.