UCLA INSTITUTE OF TRANSPORTATION STUDIES

Neighborhood Character and Travel Behavior

A comprehensive analysis of the United States

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Daily trips

INTRODUCTION AND AIMS

This paper examines synergistic and threshold effects of the built environment on travel behavior by:

- (1) classifying neighborhoods throughout the United States using a typology based on built-environment characteristics.
- (2) determining how travel behavior differs by residential neighborhood type.

DATA AND METHODS

Neighborhood Classification

Data sources:	Method:
 Environmental Protection Agency 	• Factor analysis to reduce 20 built-environment variables to 5 independent
Smart Location Database	factors
 2010 United States Decennial Census 	• Cluster analysis to identify 7 distinct clusters, each with similar sets of factor
	scores

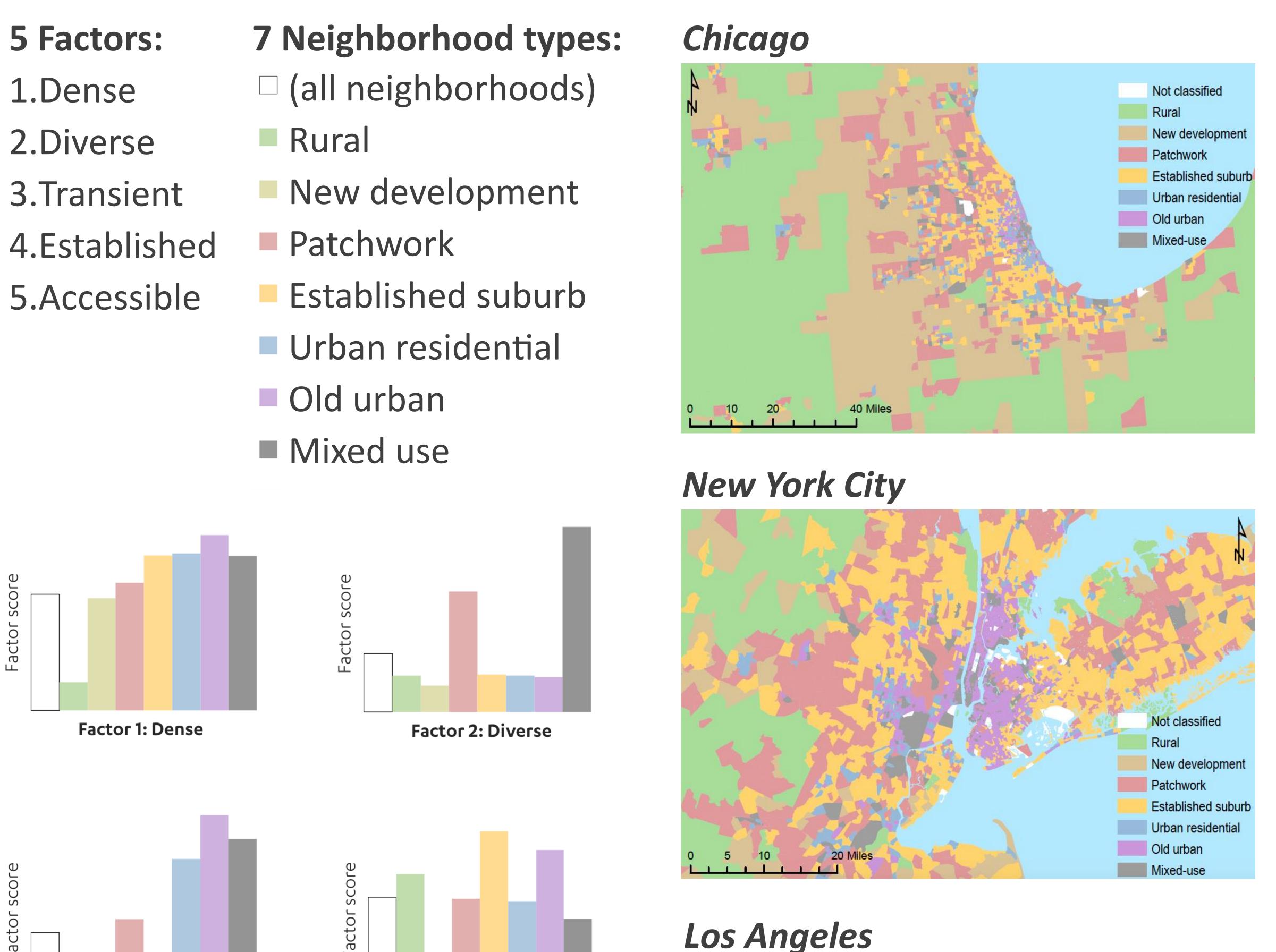
Travel behavior models

Data source:	Travel behavior outcome:	Model Forms:
 2009 National Household 	 Daily person-miles traveled 	 Tobit model censored at 0
Travel Survey by the Federal	 Number of daily trips 	 Negative binomial model
Highway Administration	 Percent of trips by single-occupancy vehicle 	 Tobit model censored at 0 and 100
 Sample limited to adults (ages 27—61) 	 Percent of trips by transit 	percent
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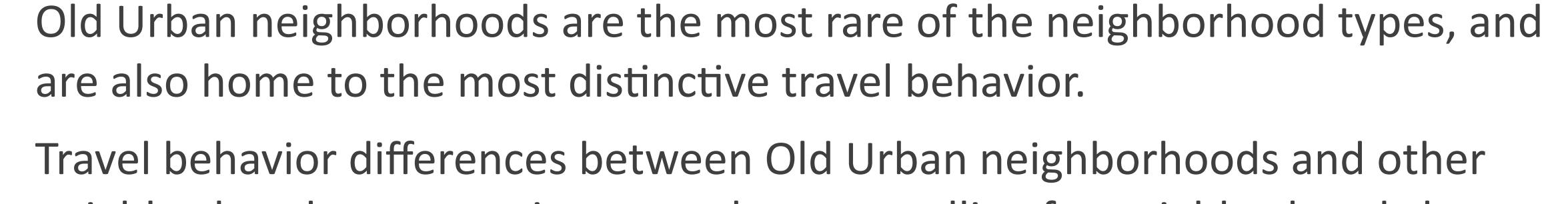
Independent variables:

- Independent characteristics: Age, sex, race/ethnicity, employment, internet use
- Household characteristics: Highest education level, income, number of adults, number of children
- Neighborhood characteristics: Five factor scores, neighborhood type indicator

NEIGHBORHOOD CLASSIFICATION RESULTS



CONCLUSIONS



neighborhood types persist even when controlling for neighborhood characteristics such as density, diversity, and accessibility, suggesting that these factors may have a synergistic effect on travel behavior.



TRAVEL BEHAVIOR RESULTS

Observed

variation by

neighborhood

Controlling for

individual and

characteristics

Controlling for

household, and

neighborhood

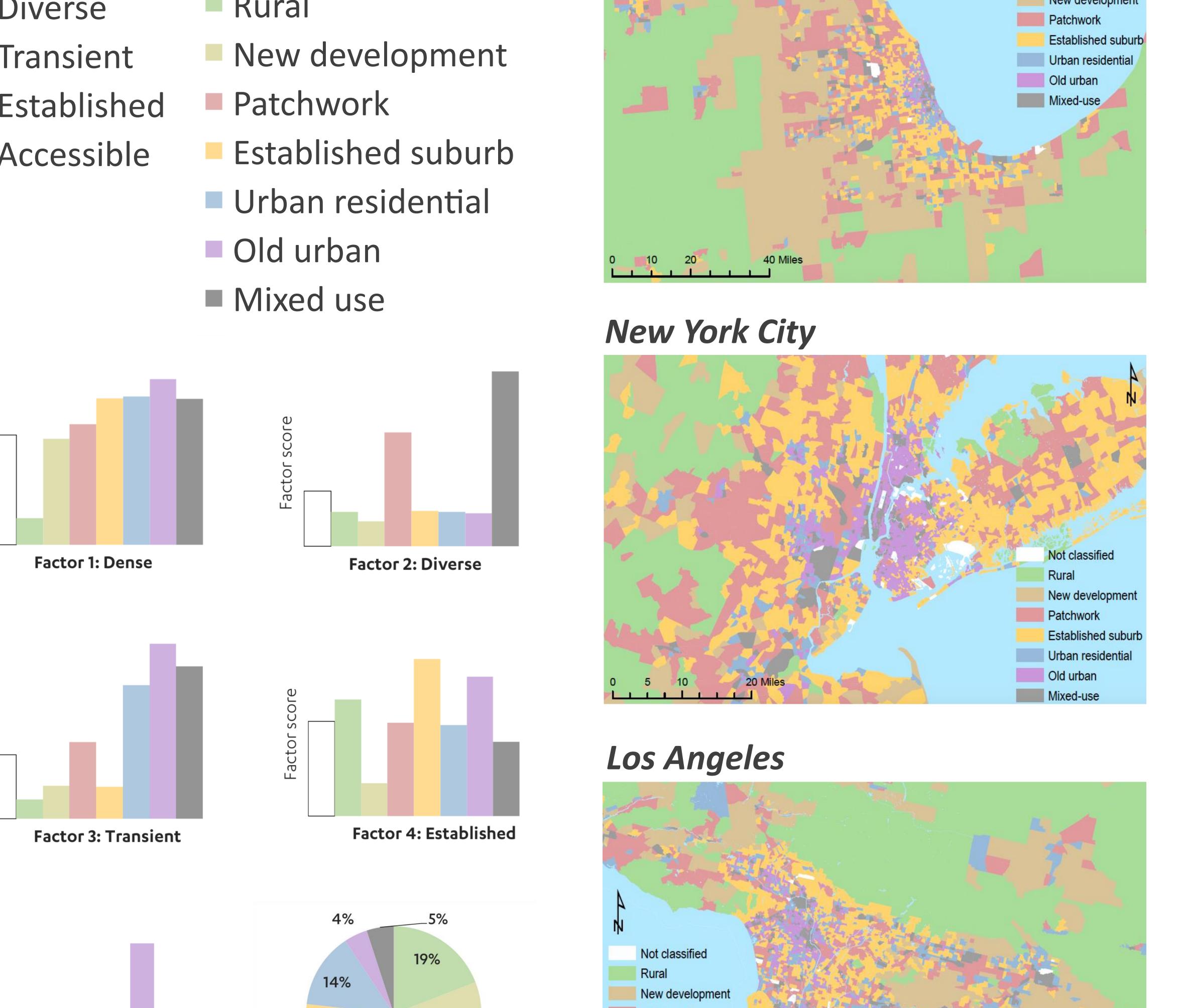
characteristics

individual,

household

Daily PMT

This research was supported by a grant from the Federal Highway Administration, and the authors are grateful for this support.



Mixed-use 0 10 20 40 Miles





Percent transit