

UC research explores national trends in commuting patterns

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Daniel Schleith, a University of Cincinnati doctoral student of geography, examined 25 metro regions over 20 years to see who has the shortest and longest commutes to work. Credit: Joseph Fuqua/University of Cincinnati

An investigation of excess commuting in 25 U.S. metropolitan areas

over the past two decades finds that nearly all workers experienced a longer drive, but at different rates. In Ohio, however, workers driving to the City of Columbus are experiencing shorter trips than they were in the past. Daniel Schleith, a University of Cincinnati doctoral student of geography, will present results of his study at the 16th annual Local Employment Dynamics Partnership Workshop, which takes place June 23-24, in Washington, D.C.

Schleith updated a highly cited 2002 geographical study on excess commuting reported by Mark W. Horner, a professor of geography at Florida State University. That study added to what's now a standard commuting geographic measure known as the excess commuting framework. That study used 1990 data to examine commuting patterns of more than 20 metro regions in the U.S. The data came from the 1990 Census Transportation Planning Package (CTPP). Horner's study factored number of trips into cities as well as which cities had the shortest and longest commutes.

The UC study further examined how commuting travel had changed between 1990 and 2002 and from 2002 to 2011 to see in part if planners' efforts to ease traffic congestion were working. The study applied the excess commuting framework, using data from the U.S. Census Bureau's Longitudinal Employer-Household Dynamics database.

"Our findings provide an interesting perspective on how commuting has changed in regions across the U.S. of varying size over approximately two decades," explains Schleith. "Additionally, our study design provides a new, updated baseline for future revisions as data continues to be made available, as well as provides a region-wide baseline for future disaggregate comparisons of the [commuters](#) in these regions, that is, age, income, industry."

The newer analysis also covers commuting to work when the U.S. was

affected by unemployment resulting from the recession as well as the housing bubble crisis.

The UC study examined five different measures in regard to commuting patterns:

- Theoretical minimum commute - A measure of a region's job-housing balance.
- Theoretical maximum commute - Measures overall dispersion of a region's urban form.
- Observed commute - The average over-the-road network distance between the origin-destination pairs.
- Excess commuting - The proportion of observed commutes that occur beyond the minimum required by the urban form.
- Capacity used - Includes the upper bound distance maximums of how inefficient a region could be.

Ultimately, the UC study found that out of the 25 cities studied, the top 5 cities with the worst or longer-than-average commutes in 2011 were:

- Atlanta, with 17 miles and 1.8 million commuters
- Phoenix, with 15 miles and 1.4 million commuters
- St. Louis, with 14.8 miles and 1 million commuters
- Miami, with 14.376 miles and 1.8 million commuters
- Seattle, with 13 miles and 1.3 million commuters

Cities with the lowest commutes in 2011 were:

- Omaha, with 9 miles and 350,000 commuters
- Wichita, with 10.12 miles and 220,000 commuters
- Las Vegas, with 10.33 miles and 700,000 commuters
- Portland, with 10.69 miles and 820,000 commuters

The top 5 cities with the worst commutes in 1990 were:

- Minneapolis, with 8.08 miles and 1.22 million commuters
- Seattle, with 8.57 miles and 1.15 million commuters
- St. Louis, with 8.81 miles and 1.02 million commuters
- San Diego, with 9.04 miles and 1.12 million commuters
- Atlanta, with 10.42 miles and 1.27 million commuters

The top 5 cities with the shortest commutes in 1990 were:

- Boise, with 4.15 miles and 87,000 commuters
- Omaha, with 5.14 miles and 274,000 commuters
- Wichita, with 5.99 miles and 198,000 commuters
- Las Vegas, with 6.3 miles and 356,000 commuters
- Milwaukee, with 6.62 miles and 775,000 commuters

Schleith says that out of the 25 metros studied since 1990, five held the same boundary, six shrank their boundaries and 14 grew their boundary. For example, Miami added two counties (which added 1.1 million jobs) to its metro definition from 1990 to 2011, resulting in a maximum commuting distance soaring to 45.5 miles. Portland, on the other hand, removed counties from its metro, which decreased travel time and distance from 1990 to 2011. However, Portland also is the only major city in that metro. Schleith says future examinations of the Portland findings will explore whether or not the urban growth boundary that was delineated had anything to do with the reduced commute.

"Ultimately, we find that all of the commuting metrics are relatively stable over a period of multiple decades," says Schleith. "Due to the slow pace that cities evolve, this is not surprising. However, because these measures are averaged over hundreds of thousands of commuters, small changes in their values should be considered as important differences. This makes the boundary delineations all the more interesting as it lends

insight into how the definition of a metro influences its performance relative to other metros."

Schleith says future study will look into the causes for the increases in commuting and the few decreased [commuting](#) trips. An additional study is examining the way that commuter sheds (metro regions) are defined and how the sheds differ for different commuters, based on their age and income categories.

Ohio Cities Studied

The Ohio metropolitan areas included in the study were Cincinnati, Columbus and Cleveland.

"Of all the metro regions, Columbus is arguably the most interesting," says Schleith. "Generally, every city sprawls more over the two decades, although some sprawl at different rates. Columbus is the only case where it shrinks slightly with this measure. On average, workers have a shorter commute to Columbus and theoretical minimum and maximum commutes shrank over the decade."

- Cleveland: Observed average was 11.28 miles in 2011 with 722,000 commuters
- Columbus: Observed average was 12.05 miles in 2011 and 652,000 commuters
- Cincinnati: Observed average was 11.54 miles in 2011 and 746,000 commuters

Schleith adds that in using spatial interaction to define the boundaries of Cincinnati, he found that high-income workers live much farther away from the main city than in the past and are spreading out much farther into the suburbs to live.

The 25 metro regions studied were:

- Atlanta, Georgia
- Baltimore, Maryland
- Boise, Idaho
- Charlotte, North Carolina
- Cincinnati, Ohio
- Cleveland, Ohio
- Columbus, Ohio
- Denver, Colorado
- Las Vegas, Nevada
- Memphis, Tennessee
- Miami, Florida
- Milwaukee, Wisconsin
- Minneapolis, Minnesota
- Omaha, Nebraska
- Philadelphia, Pennsylvania
- Phoenix, Arizona
- Pittsburgh, Pennsylvania
- Portland, Oregon
- Rochester, New York
- Sacramento, California
- San Diego, California
- Seattle, Washington
- St. Louis, Missouri
- Wichita, Kansas

Provided by University of Cincinnati

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