

Method for Determining Low-Income Population Access to Transit and Jobs

(Part 1 of STRIDE Project A2: Changing Access to Public Transportation and the Potential for Increased Travel)

PROJECT OVERVIEW

Between 1990 and 2013, the poverty rate in suburban areas increased significantly compared to other areas. As the low-income population moves to suburban areas in the United States, they may experience longer commutes or have reduced access to jobs. Transportation accessibility is defined as how easily an individual can reach their destination by one or multiple transportation modes. Analyzing accessibility over time can show if transit system improvements are providing adequate access to the suburbanized low-income population.

RESEARCH GOALS

The goal of the project was to assess if transit improvements in the Triangle region (Raleigh–Durham–Chapel Hill, North Carolina), have resulted in higher or lower transit accessibility for low-income populations while taking into account the poverty suburbanization trends. Accessibility to transit was defined as how easily a low-income individual reaches a bus station by walking, while accessibility to employment was defined as how easily a low-income individual reaches a low-wage or low-skill job by transit.

FINDINGS

Overall, accessibility to transit increased over time in all areas of the Triangle Region. However, suburban areas experienced a less than proportional improvement in transit access compared to the high increase in poverty rate. With respect to employment accessibility, between 2006 and 2015, access to low-wage and low-skill jobs by transit decreased for low-income populations throughout the Triangle Region.

These findings indicate that despite the expansion of the transit network, accessibility between residential locations and employment centers did not improve.

PRODUCT

The developed **Accessibility Methodology** shows how easy or hard it is for low-income populations to access transit and access employment by transit from different locations (city center, suburban, rural).

IMPACTS

Transit agencies and planners can use the methodology to understand if past transit improvements are helping and also evaluate where service can be improved in the future.

WHO BENEFITS?

- Regional and local transit agencies
- Transportation planners
- Low-income populations

RESEARCH TEAM

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PRODUCT DESCRIPTION

Accessibility Methodology

The research team developed a methodology to assess whether two simultaneous changes—suburbanization of low-income populations and the expansion of the transit system—made it easier or harder for low-income residents to access public transportation and jobs.

The methodology calculated two factors:

- 1) Accessibility to transit (number of bus stops, walking time) and
- 2) Accessibility to employment by transit (accessibility to qualified jobs in all zones, the number of qualified jobs, the demand for jobs, and travel time by transit between zones).

The methodology was applied at the census block group level over time in different geographical regions in the Triangle region.

The majority of previous research on accessibility focuses on one point in time and does not differentiate between different locations. This study makes an important contribution by analyzing the *changes* in access to transit or to employment by transit over time and space for socially disadvantaged populations.

For more information on Project A2 (Changing Access to Public Transportation and the Potential for Increased Travel), visit the [STRIDE Project page](#).

About STRIDE

The Southeastern Transportation Research, Innovation, Development & Education Center (STRIDE) is the 2016 Region 4 (Southeast) U.S. Department of Transportation University Transportation Center headquartered at the University of Florida Transportation Institute (UFTI).

