Geospatial Model to Identify Gaps in Service to Transportation Disadvantaged Populations

(Part 3 of STRIDE Project A2: Changing Access to Public Transportation
and the Potential for Increased Travel)

PROJECT OVERVIEW

Transportation options are crucial for not just the general public but for transportation disadvantaged (TD) populations, such as individuals with disabilities, older adults, or people who do not own a vehicle. Transportation Network Companies (TNCs), such as Uber and Lyft, provide additional transportation options, but little is known about their relationship with public transportation and specialized transportation services or if they can meet the needs of the transportation disadvantaged.

RESEARCH GOALS

The goals of the project were to

1) Locate transportation service gaps for transportation disadvantaged (TD) populations in metro Orlando and

2) Identify opportunities and challenges for Transportation Network Companies (TNCs) partnerships to fill these service gaps.

For simplicity, this research focused on older adults, a segment of the TD population.

FINDINGS

For the first goal, the research team developed a geospatial model to identify specific service gaps facing the transportation disadvantaged. Service gaps were identified as areas with low supply (very low or low) and a high demand (very high or high). The gap areas included 31 census block groups with 41,947 older adults (16.8% of total 249,352 older adults).

For the second goal, the team interviewed transit and social service agencies to ascertain the requirements and challenges associated with partnerships between public transportation, specialized transportation services, and TNCs. Challenges to establishing effective and sustainable partnerships with TNCs that serve TD populations include limited budgets, a lack of evaluation data, equity concerns, technology barriers, safety concerns, and difficulties in the integration of myriad choices.

PRODUCT

The **geospatial model** identifies gaps in transportation services for transportation disadvantaged (TD) populations.

IMPACTS

Transportation agencies and TNCs can use the model to identify opportunities for partnerships with TNCs to expand transportation options for transportation disadvantaged populations.

WHO BENEFITS?

- Transit agencies
- Transportation Network Companies (TNCs)

RESEARCH TEAM

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PRODUCT DESCRIPTION

Geospatial Model

The geospatial model identifies gaps in transportation services for transportation disadvantaged (TD) populations. The model analyzes the interaction between the supply of transportation services and the travel demand:

1) Transportation service supply was measured by the transportation accessibility of each census block group. Accessibility scores were calculated by considering the number of destinations, travel time using transit route, and walking time from/to transit stop.
2) Transportation demand was measured as the size of the older-adult population.

Each census block group was categorized into seven categories (very low, low, medium low, medium, medium high, high, very high) of supply or demand based on the computed supply and demand scores. Census block groups labelled as having a low supply (very low or low) and a high demand (very high or high), were identified as gap areas (Figure 1).
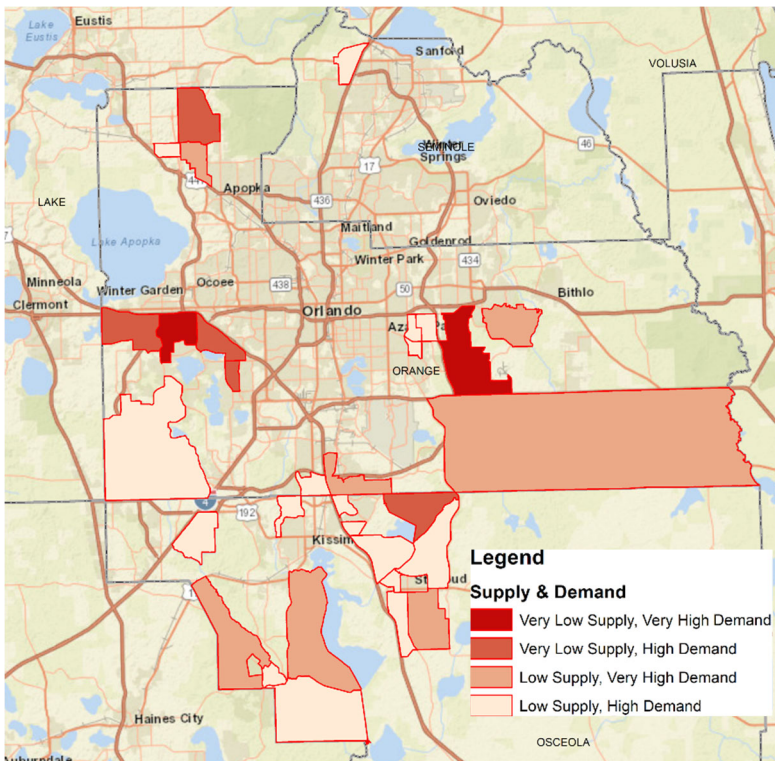

Figure 1. Transportation Service Gaps for Older Adults in Metro Orlando

For more information on Project A2 (Changing Access to Public Transportation and the Potential for Increased Travel), visit the STRIDE project website.

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