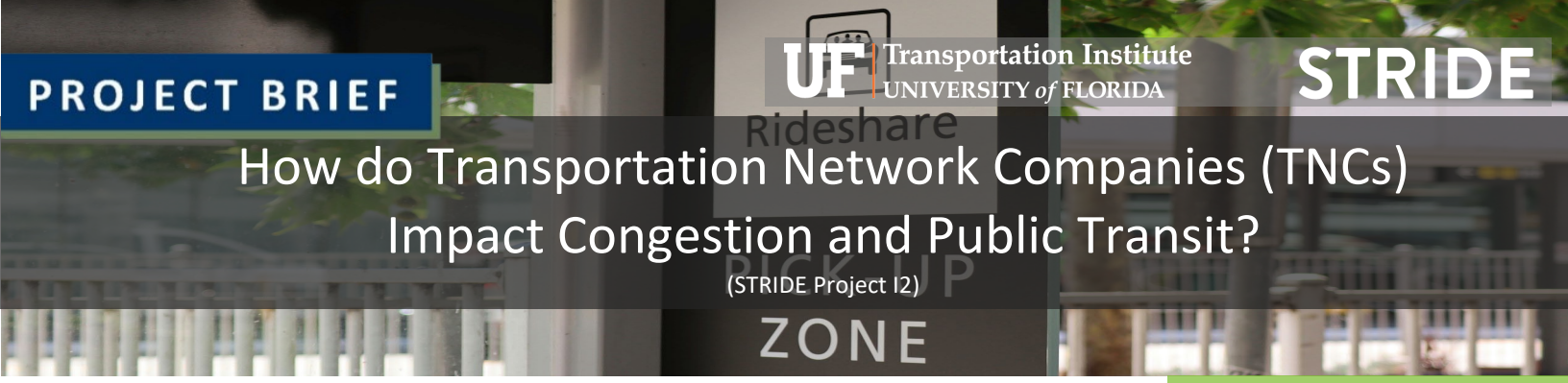

How do Transportation Network Companies (TNCs) Impact Congestion and Public Transit?

(STRIDE Project I2)

PROJECT OVERVIEW

Transportation Network Companies (TNCs) like Uber and Lyft, provide a service that offers a higher level of availability, reliability, and convenience than traditional taxi and transit services. Studies have pointed to both positive and negative impacts that TNCs can have on urban congestion and public transit services. This study used the MATSim agent-based simulation platform and two cities in the Southeast as test sites to examine (a) perceptions and predictors of TNC use; (b) mode choice shifts in the presence of transit, TNC, and road pricing options; and (c) impacts of various levels of public transit and/or TNC presence on transportation network performance.

GOAL

The study 1) examines factors that influence the use of TNCs in the southeastern U.S.; 2) uses advanced simulation methods to model the effects of TNCs on traffic congestion, transit, and automobile trips; and 3) uses crowdsourcing data collection methods to gather information on TNC usage.

PRODUCT DESCRIPTIONS

1) User questionnaire survey on transportation user behaviors

The questionnaire collects transportation users' mode choices and demographics. It can be used by researchers and analysts interested in documenting users' preferences, attitudes, and mode choices in markets where transit options and Transportation Network Services (TNS) are available. The survey can inform planners and TNC providers about factors that drive people towards the use of TNCs services.

2) Miami Beach, FL MATSim model

The activity-based simulation model can be used for testing what-if scenarios that incorporate transit and automobile options. Results can inform local transportation agencies and transit providers of impacts that transit ridership changes have on transportation network performance.

3) Birmingham, AL MATSim model

The activity-based model integrates cars, transit, and Uber trips. It can be used by local transportation planners and researchers interested in studying the impact of shifts in travel demand due to applications of shared-use economy and/or changes in transit on local and regional congestion. Details on the model development and data collection methods can be useful for researchers looking to develop similar multimodal agent-based simulation models in other locations.

For more information, contact the Lead PI or visit STRIDE Project I2.

PRODUCTS

1) Questionnaire on Transit Behaviors
2) Two Simulation Models evaluate the impact of TNCs on transit and automobile usage

IMPACT

The products can help transportation decision makers optimize transit system operations to create a mode integrated environment where TNCs and public transit work together and reduce congestion.

WHO BENEFITS?

- Transportation agencies
- MPOs
- Transit authorities
- TNC providers
- Urban planners
- Transportation researchers

RESEARCH TEAM

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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). STRIDE Partners include Auburn University, The Citadel, Florida International University, Georgia Institute of Technology, Jackson State University, Tennessee Tech University, North Carolina State University, University of Alabama at Birmingham, University of North Carolina at Chapel Hill.