Center for Advanced Multimodal Mobility Solutions and Education

UTC Project Information – CAMMSE @ UNC Charlotte	
Project Title	The Effect of Competition of Transport Modes on Mobility
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Funding Sources and Amount Provided (by each agency or organization)	The University of North Carolina at Charlotte: $37,267
Total Project Cost	$37,267
Agency ID or Contract Number	
Start and End Dates	01/15/2017 – 09/30/2018
Brief Description of Research Project	Emerging technologies in transportation will have profound impacts on travel both within and between cities in the Unites States. Some examples of these new technologies include Uber, Zipcar, driverless vehicles, high-speed rail and hyperloop. These new technologies will enhance competition of transport modes and therefore benefit travelers by improving their mobility. Policymakers need rigorous evidence on the effects of the enhanced transport mode competition caused by new technologies on travelers' mobility in order to prioritize transportation policies. In this project we will build transport mode-choice models of travelers both within and between metropolitan areas in the United States and use the models to understand travelers' willingness-to-pay for important transport

attributes such as travel time, reliability and safety. Given these parameter estimates, we will quantify the effect of the enhanced competition on travelers' mobility which is measured by both trip allocation and trip generation.

The project will include the following two components. 1. Transport mode choice models for within-city travel. Typical transport modes for within-city travel include private driving, public transit, taxi and bicycle. We will study how UBER services affect travelers' mode choices. 2. Transport mode choice models for inter-city travel. We will analyze mode choice behavior among automobile, rail and air and simulate how high-speed railway affect inter-city travel.

The mode choice models will have the following important features. First, they are nested-logit models in order to account for the non-travel option, which is important to quantify the trip generation effects of new technologies. Second, they are random-parameter models in order to account for the rich heterogeneity in travelers' preferences. Third, they can be estimated by both disaggregate and aggregate mode share data so we do not need to compile survey data all the time. Data can be used to estimate the model choice models are the National Household Transport Survey Data, which are disaggregate data, and the DB1B data, which provide market share of air travel between any two cities in the United States.

Describe Implementation	

of Research Outcomes (or why not implemented) Place Any Photos Here	
Impacts/Benefits of Implementation (actual, not anticipated)	
Web Links • Reports • Project website	https://cammse.uncc.edu/sites/cammse.uncc.edu/files/media/CAMMSE-UNCC-2017-UTC-Project-Information-10-Yan.pdf https://cammse.uncc.edu/sites/cammse.uncc.edu/files/media/CAMMSE-UNCC-2017-UTC-Project-Report-10-Yan-Final.pdf