

Research Project Title

Activity-Based Household Travel Survey through Smartphone Apps in Tennessee

Purpose of the Project

Activity-based household travel surveys (HTS) are one of primary sources that provide detailed information of people’s travel activities. Traditional methods for conducting HTS are often costly, time-consuming, labor intensive, less scalable, and difficult to achieve high quality and accuracy. Recent years have witnessed a fast-growing interest in conducting HTS through smartphone apps, which has a great potential to address many issues faced by traditional survey methods. In this project, we propose to perform an activity-based HTS study in Tennessee through smartphone apps. This project aims to develop an effective, economical, scalable HTS solution and deliver a high-quality HTS database to TDOT.

Scope and Significance

The scope of the research project includes:

- Conduct literature review related to smartphone app-based household travel survey.
- Design the Tennessee activity-based travel survey database.
- Develop survey instruments for recruiting HTS mobile app users.
- Develop the smartphone apps for activity-based HTS.
- Conduct the household travel survey through the smartphone apps.
- Perform data analytics on collected data.

Expected Outcomes

The following are expected outcomes of this research project:

- Our smartphone app-based HTS solution will assist TDOT in implementing future travel surveys effectively and efficiently.
- The collected household travel survey data will enable TDOT to gain a more accurate and in-depth understanding of household travels in TN and discover new knowledge.
- Our sensor-based techniques for measuring the accuracy of user-reported survey data will assist TDOT in improving the quality of survey data collected through smartphones.

Time Period

The time period for the project is from 08/01/2019 to 08/31/2021.

Contact Information

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