



The Transportation Security Index

TECHNOLOGY NUMBER: 2024-502

OVERVIEW

Survey-based tool measuring transportation insecurity symptoms and severity

- Focuses on symptoms, avoiding cataloging all possible influencing factors
- Applies to policy assessment, urban planning, transportation research, social services allocation

BACKGROUND

Transportation insecurity affects individuals' ability to move safely and timely, impacting their access to employment, education, healthcare, and social activities. Historically, transportation issues have been framed around macro-level considerations, such as infrastructure or public transit availability, but these approaches often overlook personal experiences and daily struggles. Traditional measures often fail to capture the nuanced impacts of transportation deficits on individuals, particularly those arising from resource constraints or emotional strain. Additionally, transportation studies have primarily focused on mode-specific challenges or geographic disparities, neglecting personal experiences across different transit methods. There is a need for an improved, individualized method to identify and address transportation insecurity holistically. The Transportation Security Index (TSI) addresses this gap by focusing on personal accounts and the qualitative impact of transportation insecurity on individuals, thus providing a more comprehensive understanding of its scope and effects.

INNOVATION

The Transportation Security Index (TSI) offers a novel approach to measuring transportation insecurity by focusing on its symptoms rather than attempting to catalog all influencing factors. Modeled after the Food Security Index, the TSI is based on extensive qualitative research, including ethnographic studies and 187 interviews, to capture the lived experiences of those facing transportation insecurity. This 16-question survey assigns respondents a continuous score or categorizes them into various levels of insecurity, from none to high. An abbreviated 6-item version (TSI-6) has also been developed and validated, delivering comparable performance. Real-world applications of the TSI include policy assessment, urban planning, transportation research, and the allocation of social services. By providing a standardized measure, the TSI enables more effective identification, analysis, and mitigation of transportation insecurity across diverse populations.

ADDITIONAL INFORMATION

PROJECT LINKS:

Technology ID

2024-502

Category

MOSS - Michigan Open Source
Software

Inventor

Alexandra Murphy
Alix Gould-Werth
Jamie Griffin
Karina McDonald-Lopez

Learn more



- [TSI Project Website](#)

DEPARTMENT/LAB:

- [Alex Murphy, Institute for Social Research](#)

LICENSE:

- TSI-6 & TSI-16: CC-BY-NC-ND