Administer the 16-item Transportation Security Index

POVERTY SOLUTIONS
UNIVERSITY OF MICHIGAN

University of Michigan researchers developed the 16-item Transportation Security Index (TSI-16), the first validated measure of the experience of being unable to move from place to place in a safe or timely manner. To learn more about the index and potential uses, visit https://myumi.ch/6NgN9. Contact the research team at TransportationSecurityIndex@umich.edu

Optional introductory question (designed to prime respondents to consider the full range of transportation options):

How often do you use each of the following to get from place to place? If the type of transportation is not available to you, please select "Not available to me."

Statements in row:
1. Walking
2. Biking
3. Riding a motorcycle or moped
4. Your own personal vehicle (e.g., car, truck, SUV)
5. Borrowing the personal vehicle of a friend, family member, neighbor, coworker, or acquaintance
6. Getting a ride from a friend, family member, neighbor, coworker, or acquaintance (including carpooling)
7. Taking a taxi service or rideshare (e.g., Uber, Lyft)
8. Using a rental car or car sharing service (e.g., zipcar, Car2go)
9. Taking the bus
10. Taking the train or subway
11. Using paratransit (that is, specialized, door-to-door transport service for people with disabilities)

Statements in column:
1. Daily
2. A few times a week
3. A few times a month
4. A few times a year
5. Never
6. Not available to me

16-item Validated Transportation Insecurity Index (TSI-16) Items:

1. To get to the places they need to go, people might walk, bike, take a bus, train or taxi, drive a car, or get a ride. In the past 30 days, how often were you late getting somewhere because of a problem with transportation? [Often / Sometimes / Never]

2. In the past 30 days, how often did it take you longer to get somewhere than it would have taken you if you had different transportation? [Often / Sometimes / Never]

3. There are times when we need to wait for transportation to pick us up. In the past 30 days, how often did you spend a long time waiting because you did not have the transportation that would allow you to come and go when you wanted? [Often / Sometimes / Never]

4. In the past 30 days, how often did you have to arrive somewhere early and wait because of the schedule of the bus, train, or person giving you a ride? [Often / Sometimes / Never]

5. In the past 30 days, how often did you have to reschedule an appointment because of a problem with transportation? [Often / Sometimes / Never]

6. In the past 30 days, how often did you skip going somewhere because of a problem with transportation? [Often / Sometimes / Never]

7. In the past 30 days, how often were you **not** able to leave the house when you wanted to because of a problem with transportation? [Often / Sometimes / Never]

8. In the past 30 days, how often did you worry about whether or not you would be able to get somewhere because of a problem with transportation? [Often / Sometimes / Never]

9. In the past 30 days, how often did you feel stuck at home because of a problem with transportation? [Often / Sometimes / Never]

10. In the past 30 days, how often do you think that someone did not invite you to something because of problems with transportation? [Often / Sometimes / Never]

11. In the past 30 days, how often did you feel like friends, family, or neighbors were avoiding you because you needed help with transportation? [Often / Sometimes / Never]

12. In the past 30 days, how often did you feel left out because you did not have the transportation you needed? [Often / Sometimes / Never]

13. In the past 30 days, how often did you feel bad because you did not have the transportation you needed? [Often / Sometimes / Never]

14. In the past 30 days, how often did you worry about inconveniencing your friends, family, or neighbors because you needed help with transportation? [Often / Sometimes / Never]

15. In the past 30 days, how often did problems with transportation affect your relationships with others? [Often / Sometimes / Never]

16. In the past 30 days, how often did you feel embarrassed because you did not have the transportation you needed? [Often / Sometimes / Never]

How to score the TSI-16:

Looking at responses to the main questionnaire, assign each "never" response a score of 0, each "sometimes" response a score of 1, and each "often" response a score of 2. Sum the scores to arrive at the respondent's continuous transportation insecurity score.

To assign the respondent to a transportation insecurity category, use the following scheme:

- Sum score 0-2:   No insecurity/Secure
- Sum score 3-5:   Marginal insecurity
- Sum score 6-10:   Low insecurity
- Sum score 11-16:   Moderate insecurity
- Sum score 17-32:   High insecurity

Short form:

The research team has developed an abbreviated TSI comprised of 6 items (TSI-6) that is able to assess a respondent's level of transportation insecurity with similar accuracy to the 16-item measure. For information on what questions comprise the TSI-6 and how to score it see: https://myumi.ch/6NgN9.

Are you implementing the TSI in your own work? Please let us know so we can keep track of how it is being used and learn more about what people are finding. Email us at TransportationSecurityIndex@umich.edu

For more information on the development of the TSI-16 see:

- https://www.surveypractice.org/article/3706-developing-a-new-measure-of-transportation-insecurity-an-exploratory-factor-analysis
- https://www.surveypractice.org/article/27185-validating-the-sixteen-item-transportation-security-index-in-a-nationally-representative-sample-a-confirmatory-factor-analysis
- https://academic.oup.com/aje/article/192/11/1854/7207808