Which transportation barriers contribute to transportation-related social exclusion among young adults?

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Research Context

Transportation-related social exclusion is a critical social equity issue, which cannot be resolved until the risk of limited activity participation is equitably addressed.

Young adults participate in fewer activities and are likely to face transportation barriers due to their travel behaviour and socio-demographic attributes.

An exploration of young adults' self-reported transportation barriers to activity participation and the type of activities that they find more challenging to participate in remains less explored.

Research Objectives

Focusing on Canadian young adults, two research questions were addressed:

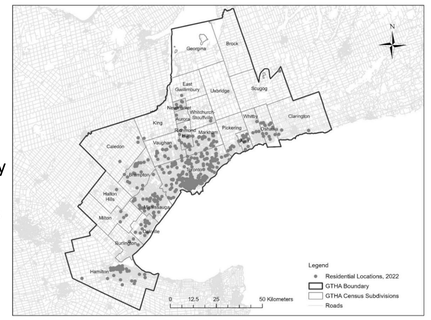
1) Which transportation barriers limit activity participation among young adults, and how are these barriers associated with their socio-demographic characteristics and built environment conditions?

2) Which subsistence and discretionary activities do young adults find more challenging to participate in due to transportation barriers and other factors?

Study Area and Data

Study area: Greater Toronto and Hamilton Area (GTHA), Canada.

Data: Travel data (n=668) collected in spring 2022 through a follow-up survey of StudentMoveTO program (www.studentmoveto.ca). Participants include post-secondary students and those who graduated within the past three years.



Methods

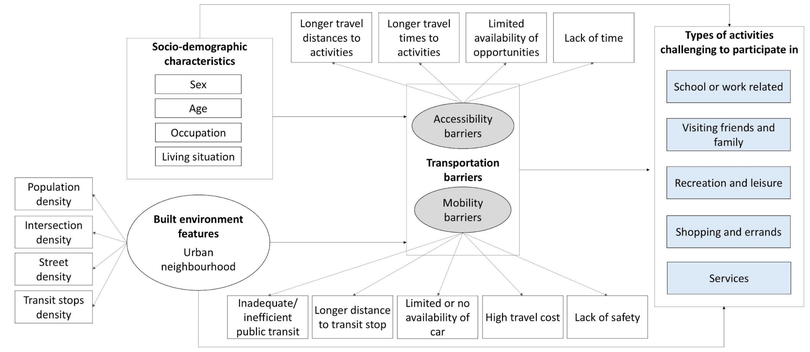
Explored differences in experiencing transportation barriers by mode use frequency using chi-square tests.

Examined differences in activity participation rates across transportation barriers using *t*-tests.

Explored how socio-demographic characteristics and mode use frequencies were associated with experiencing transportation barriers using binomial logistic regression.

Applied Structural Equation Modeling (SEM) to examine socio-demographic and built environment variables that were associated with transportation barriers, and participation challenges in activities.

Conceptual Model

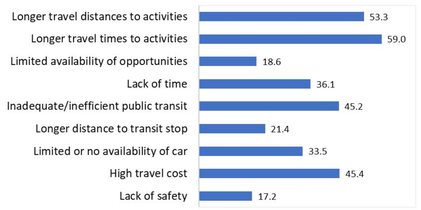


Observed variables are presented in rectangles while latent variables are presented in ovals.

Findings

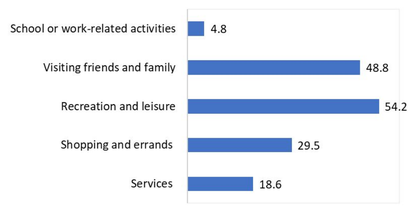
Only 16% (n=105) respondents reported that transportation barriers do not limit their participation in activities, while others (84%; n=563) reported experiencing transportation barriers.

Percentage of Respondents who Reported Transportation Barriers to Activity Participation



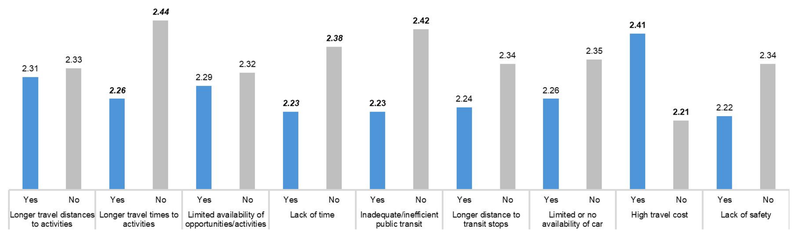
Longer travel time and travel distance to activities were the most frequently reported transportation barriers.

Percentage of Respondents who Find Activities Challenging to Participate In



Recreational activities were most frequently reported by respondents that they find challenging to participate in.

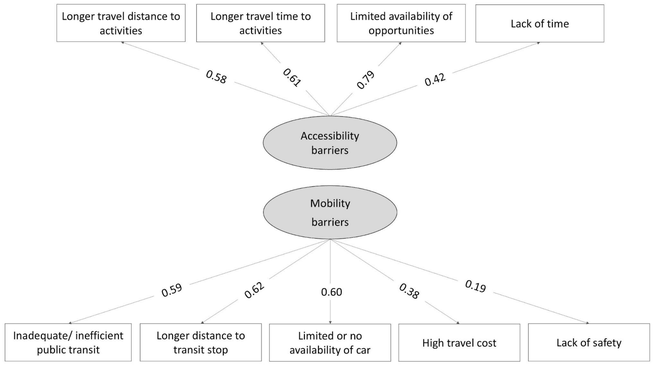
Differences in Activity Participation Rates by Transportation Barriers



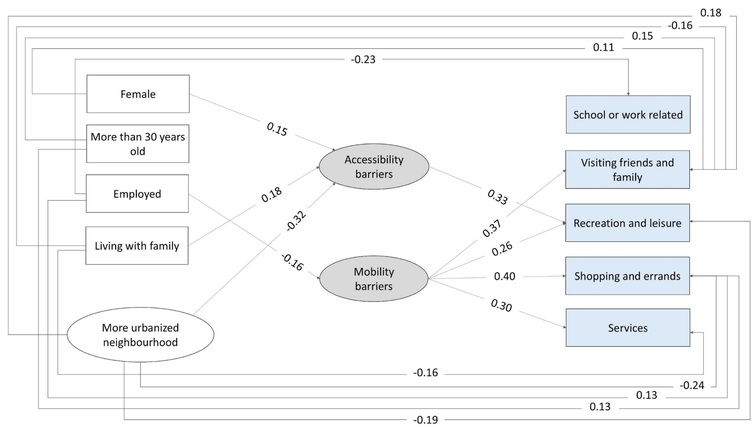
Bold values are statistically significant at α=0.01 and ***bold italics*** values are significant at α=0.05.

Results from Structural Equation Model

Perceived barriers to activity participation was measured as latent variables. Two latent constructs emerged: 1) Accessibility-related barriers and 2) mobility-related barriers.



Key Correlations from Structural Equation Model



Coefficients are statistically significant at $p < 0.05$.

Implications

The mixed-use diverse neighbourhoods can be an effective policy measure to improve young adults' participation in discretionary activities, due to higher proximity to various destinations.

When opportunities are not available within easy reach, providing better public transit accessibility spatially and temporally may help undermine importance of cars.

Political support in the form of land use and transportation management strategies that are centred around people and not cars, may help reduce transportation barriers among young people.

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