Who Uses Ride-Hailing?

Using Cluster Analysis to Identify Traveler Markets in the Greater Toronto & Hamilton Area

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Background

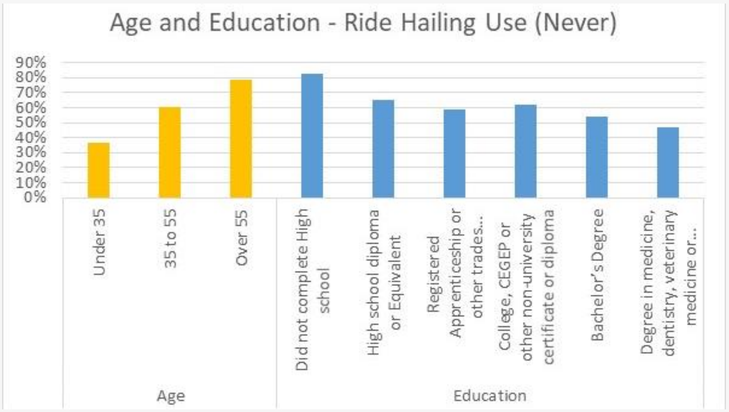
Ride-hailing has become popular, but how is this technology used? And how does it align with long-term planning and policymaking?

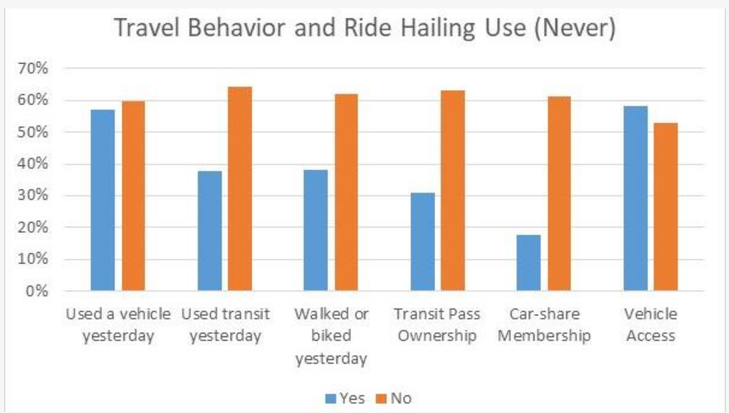
Research Design

Using data from an online survey of 3,200 participants in the Greater Toronto and Hamilton Area conducted in December 2018, this study uses descriptive statistics and cluster analysis results.

1. Descriptive statistics are used to gather a general understanding of correlations between individual, household, and travel characteristics, on the one hand, and ride-hailing use.
2. Traveler clusters are identified using variables relating to travel behavior and access to mobility tools.
3. Traveler sub-markets identified through cluster analysis are compared with ride-hailing use.

Descriptive Analysis Findings





Acknowledgements

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Cluster Analysis Findings

Cluster A: Multi-Modalists

- Biggest users of shared-mobility tools including bike-share, car-share, and ride-hailing, mirroring the characteristics of "Supersharers", as coined by Clewlow and Mishra (2017).
- Highly mobile with access to many mobility tools: vehicles (1.6 vehicles per household) , bikes, transit passes.
- Already engages in the most multi-modal travel (notably public transit and regional transit commuting).
- Propensities: young (49.2% under 35), highly educated, employed (65.5%), and students (14.5%)

Cluster B: Low Mobility Travelers

- High ride-hailing use rate.
- Low levels of mobility and access to fewest mobility tools.
- 0.8 vehicles per household.
- 61.3% rely on transit for commuting.
- Low smartphone ownership.
- Have the highest proportion of lower income households (9.4% of households earn under $14,999, 21.5% earn between $15,000 and $39,999).
- Highest proportion of unemployment (14.8%), with 5.6% not in the workforce and 10.1% being full-time students.

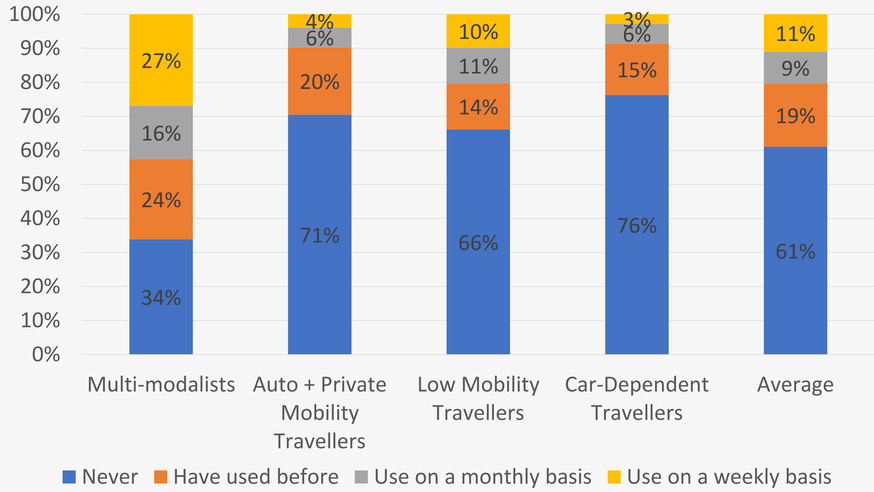
Cluster C: Auto + Private Mobility Traveler

- Low users of ride-hailing (70.5% have never used ride-hailing).
- Heavily reliant on their cars but also have a high bicycle ownership rate.
- 1.7 vehicles per household.
- Highest proportion of retired individuals at 30.8%, just below half (45.0%) of respondents are full-time employed

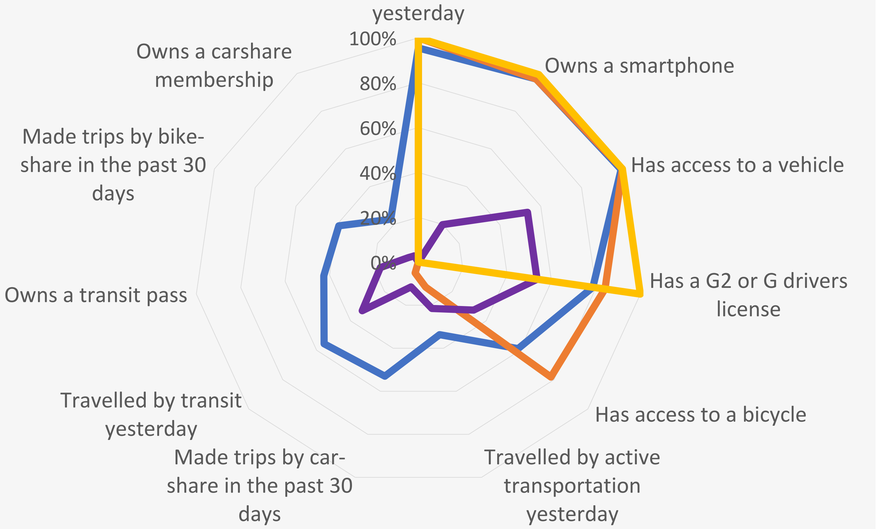
Cluster D: Car-Dependent Travelers

- Lowest ride-hailing adoption rate (76.1% have never used ride-hailing).
- Reliant solely on their personal vehicles.
- 57.1% of respondents are employed full time.
- 91.0% of respondents drive, either alone or with others, to work.
- Typical commute time is the lowest among the groups (30.8 minutes).

Traveler Sub-Markets and Ride-Hailing Use



Traveler Sub-Markets were identified from 11 variables:



Conclusions

There are three main findings in this study:

(1) Car dependent lifestyles are not associated with ride-hailing.

Auto + Private Mobility Travelers and Car-Dependent Travelers are infrequent users and least likely to ride-hail. This finding suggests that policymakers should be cautious to conclude that ride-hailing is likely to significantly reduce auto-dependence among those auto-oriented residents.

(2) Ride-hailing is filling a transportation gap for the Low Mobility Travelers.

Low Mobility Travelers have lower household incomes, lower levels of educational attainment, and lower levels of mobility. Although there are many equity-based critiques of ride-hailing - e.g. not being available for the "unbanked" – ride-hailing appears to be advancing needs of economically vulnerable transportation system users.

(3) Multi-Modalists are the single largest ride-hailing user group.

This group is highly multi-modal, owns and uses cars, owns transit passes and uses transit, and uses other forms of shared mobility, such as car-sharing and bike-sharing. This cluster is significantly younger and more highly-educated compared to other traveler sub-markets. Overall, ride-hailing appears to be used as one additional form of mobility to augment many diverse other sources of mobility.

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