Willingness to Share Ridehailing Trips: Revealed and Stated Preference Analysis

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Full citation (APA style)

TOMNET D-STOP Transformative Technologies in Transportation Survey (T4 Survey)

- Phoenix, Atlanta, Austin, and Tampa metro areas
- Summer and Fall 2019
- Random address-based sample with online instrument
- Comprehensive attitudinal survey on MaaS and AV
- Weighted to better represent Census distributions

<table>
<thead>
<tr>
<th>Phoenix, AZ</th>
<th>Atlanta, GA</th>
<th>Austin, TX</th>
<th>Tampa, Fl</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Size</td>
<td>1,027</td>
<td>944</td>
<td>1,127</td>
<td>260</td>
</tr>
<tr>
<td>%</td>
<td>30.6%</td>
<td>28.1%</td>
<td>33.6%</td>
<td>7.8%</td>
</tr>
</tbody>
</table>

Survey Instrument

- Attitudes and Preferences
- Vehicles You Have and Where You Live
- Current Travel Patterns
- Mobility on Demand and Shared Mobility Services
- Autonomous Vehicles
- Background Information
Study Objective

• Shared vs Private ridehailing service
  – Familiarity
  – Use
  – Frequency of use

• Joint revealed and stated preferences

Background

• Why should we encourage shared ridehailing?
  – Potential decrease in VMT
  – Reduction in traffic congestion
• UberPOOL was launched in San Francisco, September 2014
• Pooled rides accounted for 20% of all Uber rides worldwide, 2016
• Launch dates
  – Atlanta, 2015
  – Austin, 2016
• Shared RH not available
  – Phoenix
  – Tampa

<table>
<thead>
<tr>
<th>TNC Shared Ridehailing Services</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pros:</strong></td>
</tr>
<tr>
<td>Cost</td>
</tr>
<tr>
<td>Safety</td>
</tr>
<tr>
<td>Convenience</td>
</tr>
</tbody>
</table>
Survey Question: Are you familiar with RH?

1. How often do you generally use the following transportation services?

<table>
<thead>
<tr>
<th>Service</th>
<th>I am not familiar with it</th>
<th>I am familiar but never used the service</th>
<th>I use it rarely (e.g., less than once a month)</th>
<th>I use it monthly</th>
<th>I use it weekly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private ridehailing (e.g., Uber, Lyft)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Shared ridehailing* (e.g., UberPOOL, Lyft Share)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Carsharing (e.g., Zipcar, Share Now)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Bikesharing (e.g., Jump, Grid)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>E-scooter sharing (e.g., Lime, Bird)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

* Shared ridehailing is an Uber/Lyft ride which you are sharing with other passengers not in your party.
Familiarity with Ridehailing

Are you familiar with Private ridehailing?
- Yes: 93%
- No: 7%

Are you familiar with Shared ridehailing?
- Yes: 76%
- No: 24%

Familiarity with Ridehailing: Geographic

Overall Familiarity
- Both: 80%
- Neither: 14%
- Private ridehailing only: 5%
- Shared ridehailing only: 1%

Austin
- Both: 80%
- Neither: 14%
- Private ridehailing only: 5%
- Shared ridehailing only: 1%

Atlanta
- Both: 83%
- Neither: 6%
- Private ridehailing only: 10%
- Shared ridehailing only: 2%
Use of Ridehailing

Have you used Private ridehailing?
- Yes: 62%
- No: 38%

Have you used Shared ridehailing?*
- Used: 37%
- Not used: 63%

*Shared ridehailing only for Austin and Atlanta

Use of Private Ridehailing: Geographic

Austin
- Used: 73%
- Not used: 27%

Phoenix
- Used: 52%
- Not used: 48%

Atlanta
- Used: 64%
- Not used: 36%

Tampa
- Used: 54%
- Not used: 46%
Use of Shared Ridehailing: Geographic

Austin

- Used: 46%
- Not used: 54%

Atlanta

- Used: 26%
- Not used: 74%

Survey Question: Your last RH trip

Revealed Preference

“Considering the last trip you recall using ridehailing services, please answer the following questions. If you don’t remember all of the information precisely, your best guess is fine. You can also refer to your app to see trip details.”
Last RH Trip Mode: Geographic Variation

- What did you use in last RH trip?

Private ridehailing 69%
Shared ridehailing 31%

Austin
- Private ridehailing 65%
- Shared ridehailing 35%

Atlanta
- Private ridehailing 70%
- Shared ridehailing 30%

Last RH Trip Mode: Income Effect

- Low income (below $50,000)
  - Shared ridehailing 39%
  - Private ridehailing 61%

- Medium Income ($50,000-$150,000)
  - Shared ridehailing 29%
  - Private ridehailing 71%

- High Income (above $150,000)
  - Shared ridehailing 20%
  - Private ridehailing 80%
**Last RH Trip Mode:** Age Effect

Young Adults (18-30)  
Private ridehailing 63%  
Shared ridehailing 37%

Middle-Aged (31-50)  
Private ridehailing 75%  
Shared ridehailing 25%

“Old” Adults (above 50)  
Private ridehailing 76%  
Shared ridehailing 24%

**Last RH Trip:** Trip Cost, Travel Time, Waiting Time

- **Trip Cost:**
  - Not known
  - $0-$10
  - $10-$20
  - $20-$30
  - $30-$50
  - >$50
  - NA

- **Travel Time:**
  - Not known
  - 0-10 min
  - 10-20 min
  - 20-30 min
  - 30-50 min
  - >1 hour

- **Waiting Time:**
  - Not known
  - <5 min
  - 5-10 min
  - 10-15 min
  - 15-20 min
  - >20 min
How much did you spend on RH last month?

Overall Spending

- More than $50: 17%
- $30 - $49: 18%
- $10 - $29: 27%
- $1 - $9: 10%
- $0: 28%

Survey Question: Which mode would you choose?

Stated Preference

Imagine that you call a ride through a smartphone app. For each of the trip purposes below, check whether you would choose the private (Option 1) or shared (Option 2) ridehailing option based on the trip features presented (trip cost, travel time, and the presence of additional passengers). Select only one option in each row. Note that the travel times for shared ridehailing include both your waiting time and the extra time picking up/dropping off other passengers.

<table>
<thead>
<tr>
<th>Option 1: Private ridehailing (e.g., Uber and Lyft)</th>
<th>Option 2: Shared ridehailing (e.g., uberPOOL and Lyft Share)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social/Leisure</td>
<td>$18.00/ 20 minutes</td>
</tr>
<tr>
<td>Shopping</td>
<td>$13.00/ 15 minutes</td>
</tr>
<tr>
<td>Work/School</td>
<td>$8.00/ 10 minutes</td>
</tr>
</tbody>
</table>
Stated Preference

Overall Stated Preference Outcome

- Shared ridehailing: 54%
- Private ridehailing: 46%

Stated Preference: Geographic Variation

- Austin: Shared ridehailing 59%, Private ridehailing 41%
- Phoenix: Shared ridehailing 46%, Private ridehailing 54%
- Atlanta: Shared ridehailing 49%, Private ridehailing 51%
- Tampa: Shared ridehailing 46%, Private ridehailing 54%
**Stated Preference: Trip Purpose Variation**

- **Commute**
  - Shared ridehailing: 44%
  - Private ridehailing: 56%

- **Shopping**
  - Shared ridehailing: 61%
  - Private ridehailing: 39%

- **Social/Leisure**
  - Shared ridehailing: 57%
  - Private ridehailing: 43%

**Stated Preference**

Higher travel cost discourages people from choosing private RH.
Stated Preference

Higher trip time discourages people from choosing shared RH

Stated Preference

- Additional passengers discourage the use of shared RH
- Additional passengers do not appear to influence RH mode choice as much as time and cost
Thank you!
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