Willingness to Share Ridehailing Trips: Revealed and Stated Preference Analysis

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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></th>
<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>
<td>3,358</td>
</tr>
<tr>
<td>%</td>
<td>30.6%</td>
<td>28.1%</td>
<td>33.6%</td>
<td>7.8%</td>
<td>100%</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

### TNC Shared Ridehailing Services

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>Journey time</td>
</tr>
<tr>
<td>Safety</td>
<td>Seating restriction</td>
</tr>
<tr>
<td>Convenience</td>
<td>Locked route</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>

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

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

- **Private ridehailing** (e.g., Uber, Lyft)
  - I am not familiar with it
  - I am familiar but never used the service
  - I use it rarely (e.g., less than once a month)
  - I use it monthly
  - I use it weekly

- **Shared ridehailing** (e.g., uberPOOL, Lyft Share)
  - I am not familiar with it
  - I am familiar but never used the service
  - I use it rarely (e.g., less than once a month)
  - I use it monthly
  - I use it weekly

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**Graphical Representation:**

- **SHARED RIDEHAILING**
  - I am not familiar with it: 10%
  - I am familiar but never used the service: 20%
  - I use it rarely (e.g., less than once a month): 30%
  - I use it monthly: 20%
  - I use it weekly: 10%

- **PRIVATE RIDEHAILING**
  - I am not familiar with it: 10%
  - I am familiar but never used the service: 20%
  - I use it rarely (e.g., less than once a month): 30%
  - I use it monthly: 20%
  - I use it weekly: 10%
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:
- 75% Both
- 18% Neither
- 6% Private ridehailing only
- 1% Shared ridehailing only

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

Atlanta:
- 83% Both
- 10% Neither
- 2% Private ridehailing only
- 5% Shared ridehailing only
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

- Not used: 54%
- Used: 46%

Atlanta

- Not used: 74%
- Used: 26%
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%

Last RH Trip Mode

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

- **Last Ridehailing Trip Cost**
  - Shared ridehailing (e.g., uberPOOL, Lyft Share)
  - Private ridehailing (e.g., Uber, Lyft)

- **Last Ridehailing Trip Travel Time**
  - Shared ridehailing (e.g., uberPOOL, Lyft Share)
  - Private ridehailing (e.g., Uber, Lyft)

- **Last Ridehailing Trip Waiting Time**
  - Shared ridehailing (e.g., uberPOOL, Lyft Share)
  - Private ridehailing (e.g., Uber, Lyft)
How much did you spend on RH last month?

Overall Spending

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

LOW INCOME
- 27% 13% 33% 14% 13%

MEDIUM INCOME
- 31% 9% 25% 19% 16%

HIGH INCOME
- 21% 7% 23% 20% 29%
**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></th>
<th><strong>Option 1:</strong> Private ridehailing (e.g., Uber and Lyft)</th>
<th><strong>Option 2:</strong> Shared ridehailing (e.g., uberPOOL and Lyft Share)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social/Leisure</td>
<td>○ $ 18.00/ 20 minutes</td>
<td>○ $ 12.00/ 35 minutes/ three additional passengers</td>
</tr>
<tr>
<td>Shopping</td>
<td>○ $ 13.00/ 15 minutes</td>
<td>○ $ 10.00/ 25 minutes/ two additional passengers</td>
</tr>
<tr>
<td>Work/School</td>
<td>○ $ 8.00/ 10 minutes</td>
<td>○ $ 6.00/ 15 minutes/ one additional passenger</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%

Atlanta

- Shared ridehailing: 49%
- Private ridehailing: 51%

Phoenix

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

Tampa

- Shared ridehailing: 46%
- Private ridehailing: 54%
Stated Preference: Trip Purpose Variation

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

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

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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