

**TOMNET and D-STOP USDOT Tier 1 University Transportation Centers present
The ABCs (Attitudes – Behaviors – Choices) of Future Mobility**

Willingness to Share Ridehailing Trips: Revealed and Stated Preference Analysis

Shuqing Kang, Aupal Mondal, and Chandra Bhat

Department of Civil, Architectural and Environmental Engineering

University of Texas At Austin

June 12, 2020

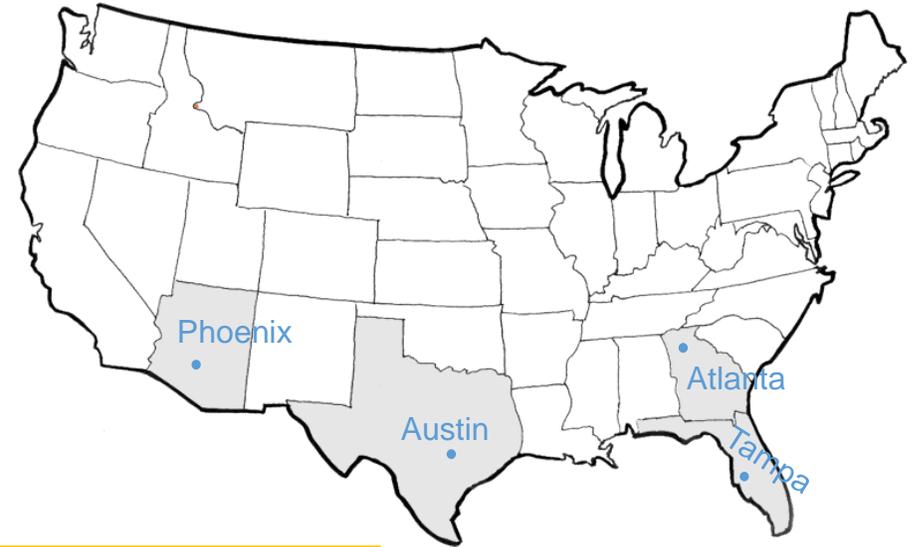


Full citation (APA style)

Kang, S., Mondal, A., & Bhat, C. (2020). *Willingness to Share Ridehailing Trips: Revealed and Stated Preference Analysis*. The ABCs (Attitudes – Behaviors – Choices) of Future Mobility. Available at <https://www.tomnet-utc.org/leadership-webinar-series.html>.

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



	Phoenix, AZ	Atlanta, GA	Austin, TX	Tampa, FL	Total
Sample Size	1,027	944	1,127	260	3,358
%	30.6%	28.1%	33.6%	7.8%	100%

Survey Instrument



Attitudes and
Preferences



Vehicles You
Have and
Where You
Live



Current
Travel
Patterns



Mobility on
Demand and
Shared
Mobility
Services



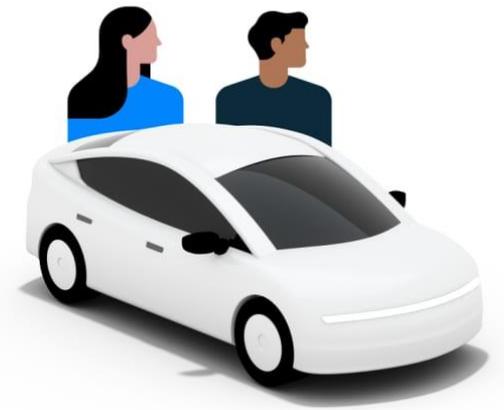
Autonomous
Vehicles



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	
Pros :	Cons :
<ul style="list-style-type: none"> <input type="checkbox"/> Cost <input type="checkbox"/> Safety <input type="checkbox"/> Convenience 	<ul style="list-style-type: none"> <input type="checkbox"/> Journey time <input type="checkbox"/> Seating restriction <input type="checkbox"/> Locked route

Survey Question: Are you familiar with RH?

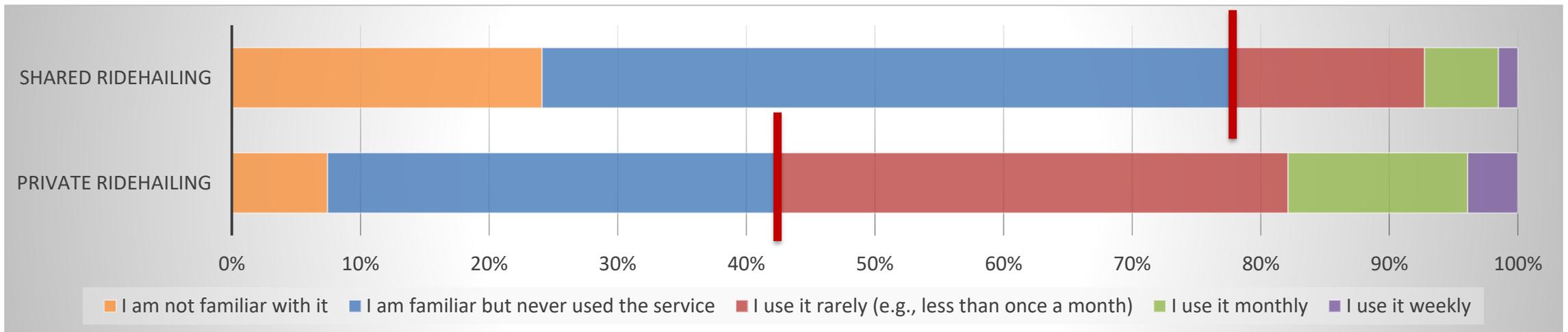
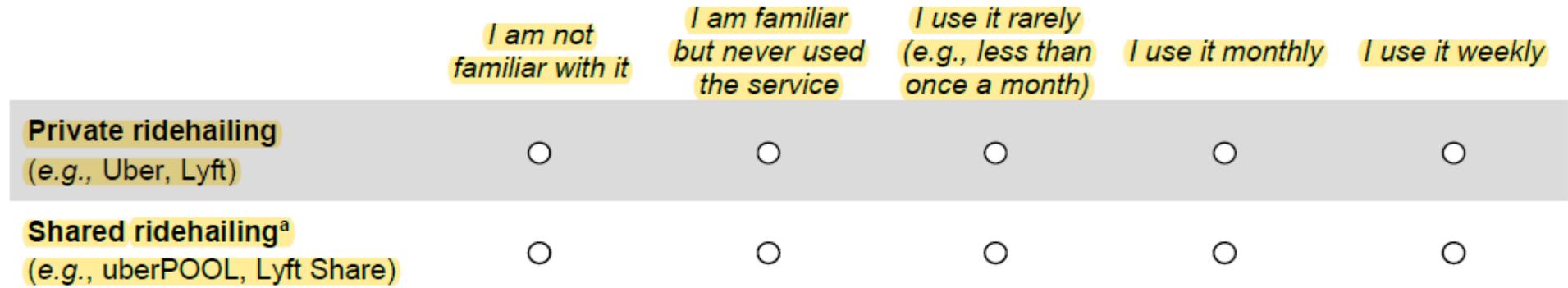
1. How often do you generally use the following transportation services?

	<i>I am not familiar with it</i>	<i>I am familiar but never used the service</i>	<i>I use it rarely (e.g., less than once a month)</i>	<i>I use it monthly</i>	<i>I use it weekly</i>
Private ridehailing (e.g., Uber, Lyft)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shared ridehailing^a (e.g., uberPOOL, Lyft Share)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Carsharing (e.g., Zipcar, Share Now)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bikesharing (e.g., Jump, Grid)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E-scooter sharing (e.g., Lime, Bird)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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

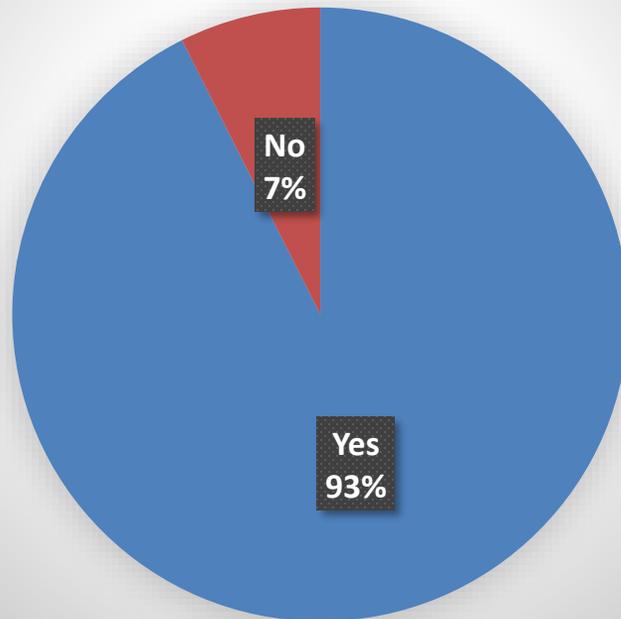
Familiarity with Ridehailing

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

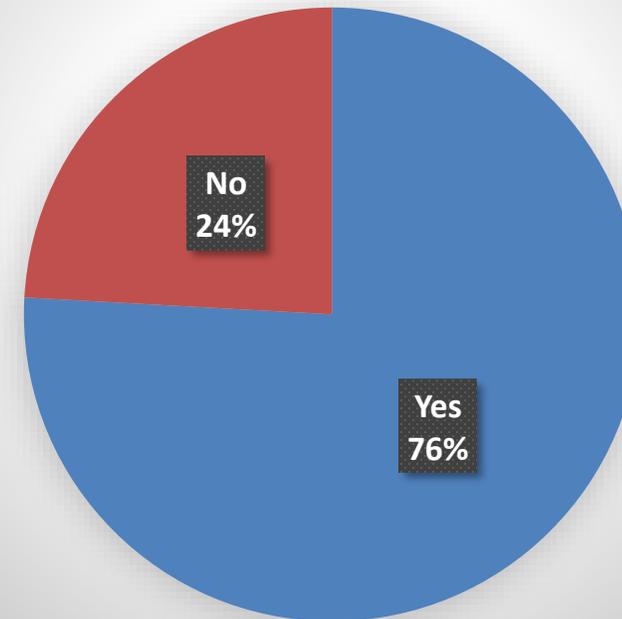


Familiarity with Ridehailing

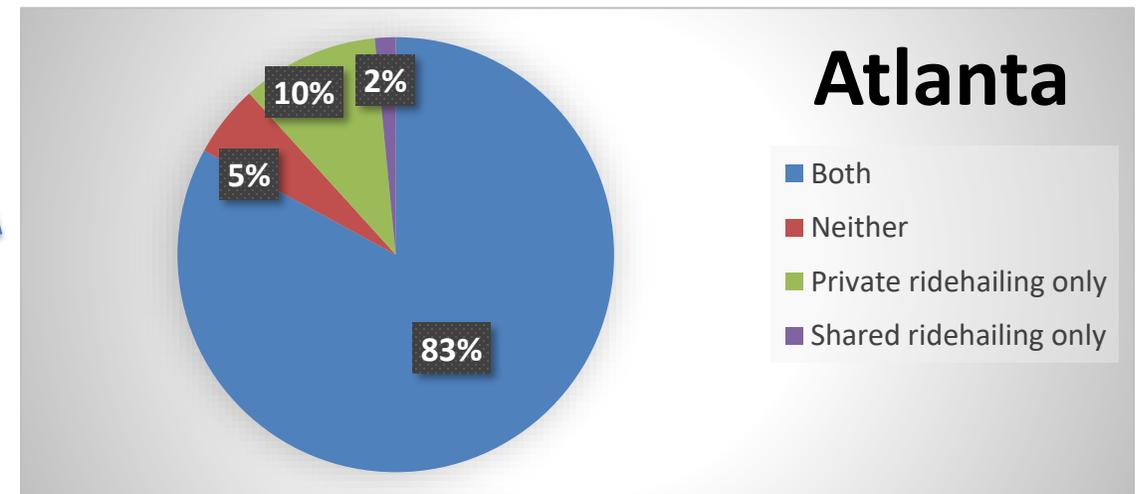
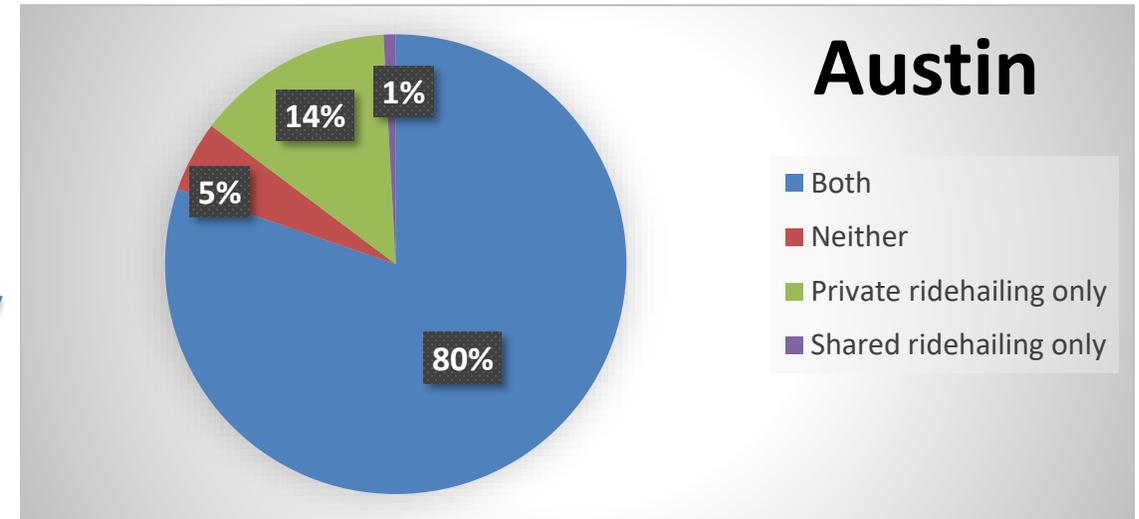
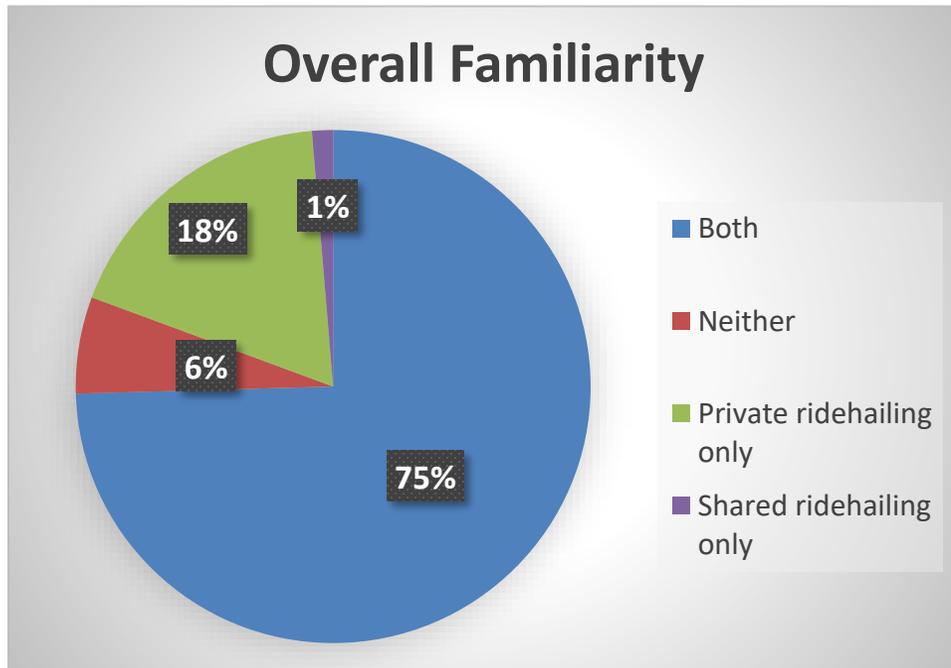
Are you familiar with
Private ridehailing?



Are you familiar with
Shared ridehailing?

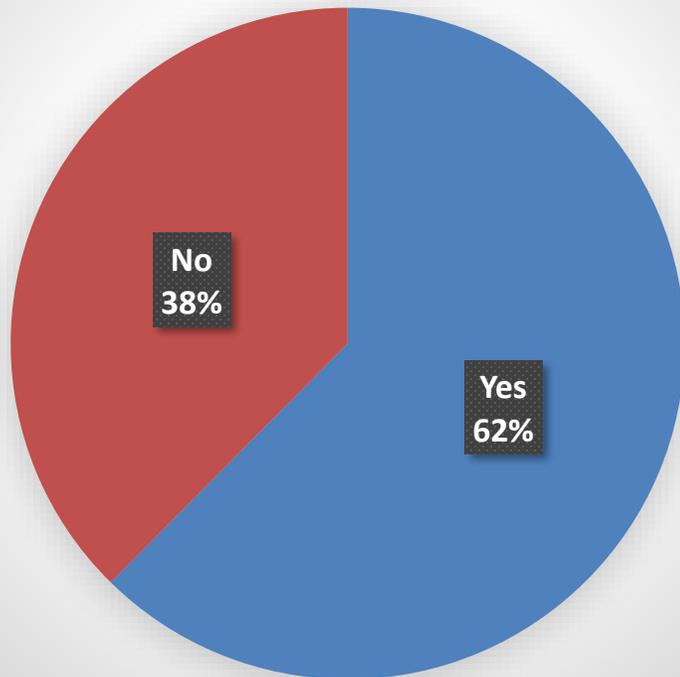


Familiarity with Ridehailing: Geographic

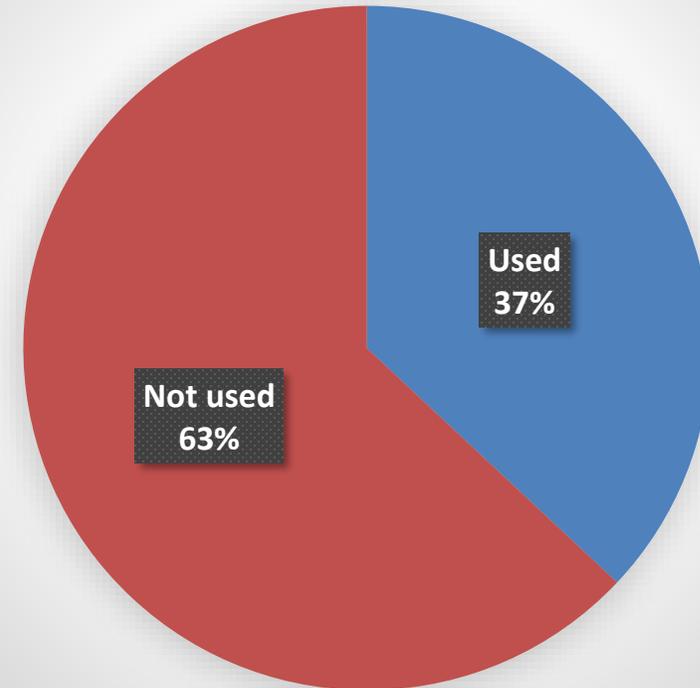


Use of Ridehailing

Have you used **Private** ridehailing?



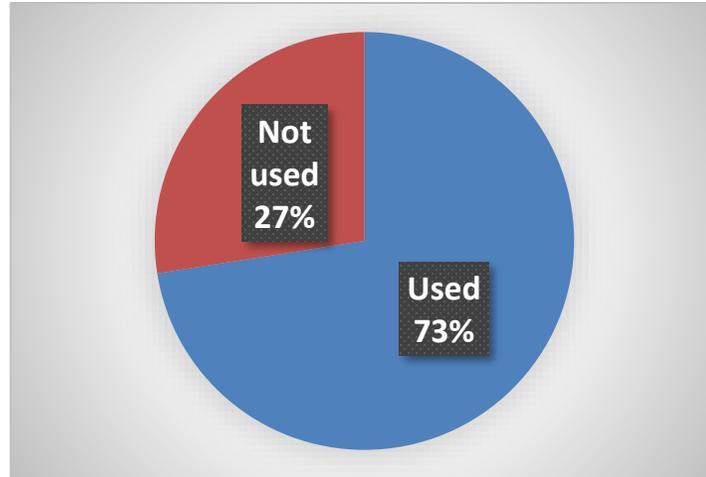
Have you used **Shared** ridehailing?*



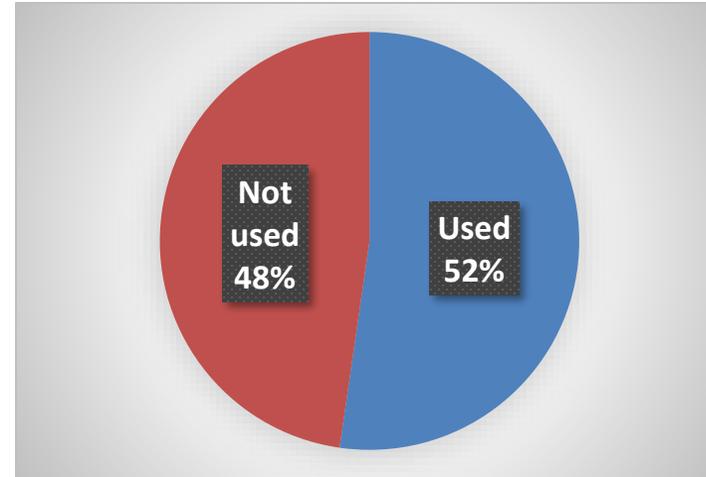
**Shared ridehailing only for Austin and Atlanta*

Use of Private Ridehailing: Geographic

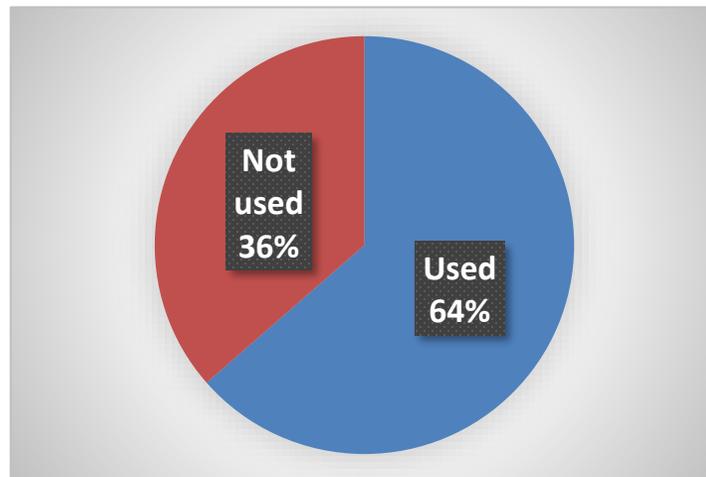
Austin



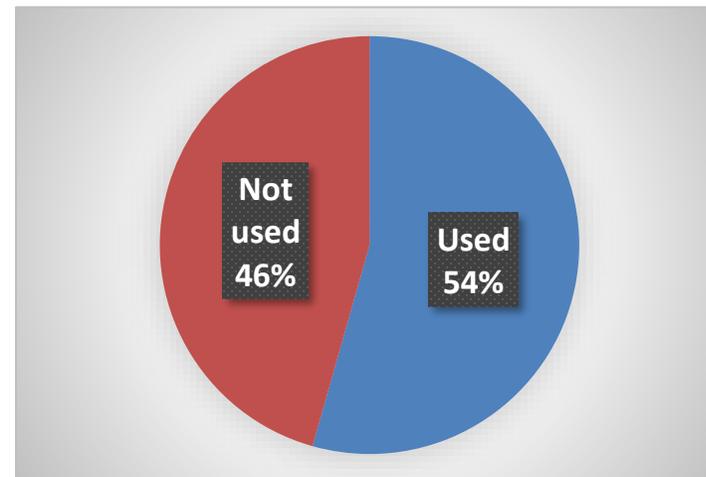
Phoenix



Atlanta

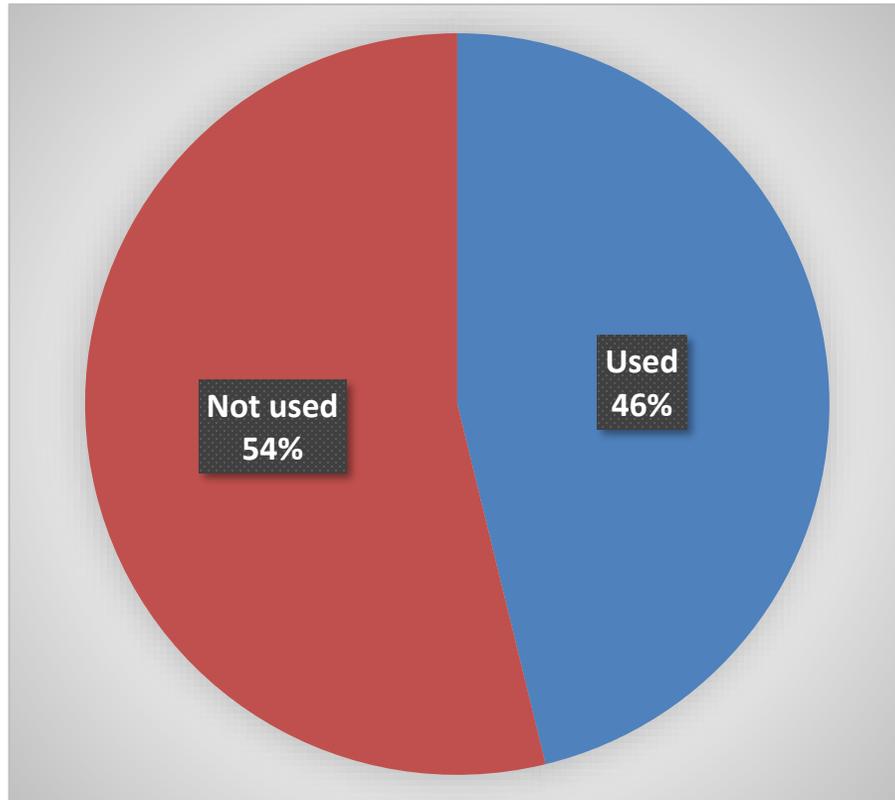


Tampa

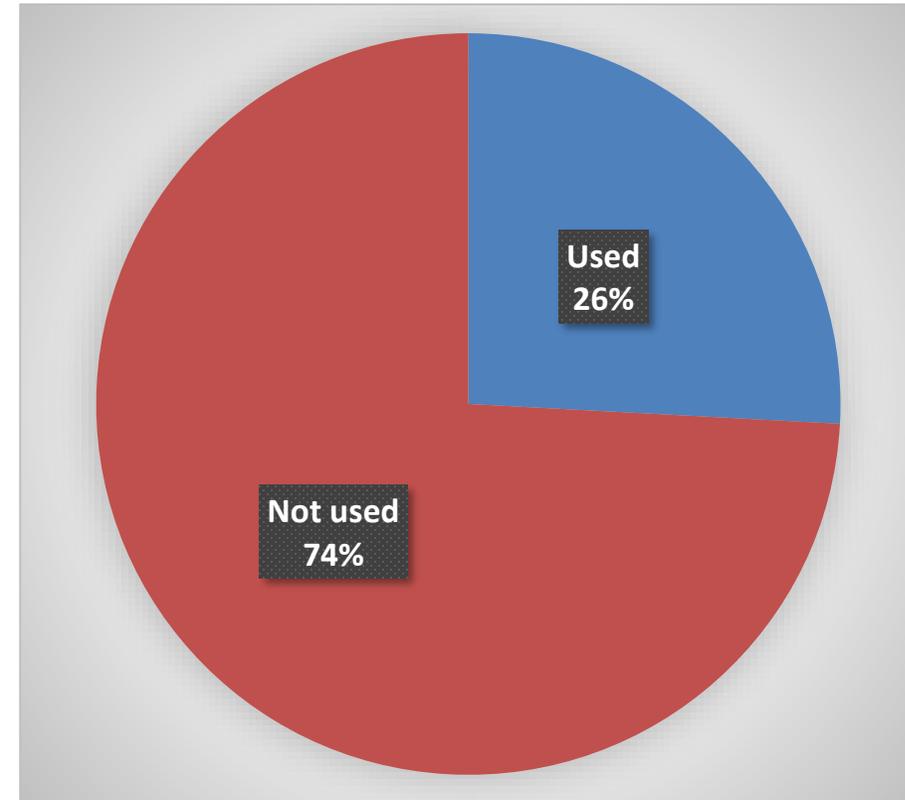


Use of Shared Ridehailing: Geographic

Austin



Atlanta



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. ”

What type of ridehailing service did you use?

Private ridehailing (e.g., Uber, Lyft)
 Shared ridehailing (e.g., UberPOOL, Lyft Share)

Where did you travel using this service? Provide address or major cross-streets and city name.

From: _____
 To: _____

When did you use it?

Weekday daytime
 Weeknight (excluding Friday night)
 Weekend daytime
 Weekend night time (including Friday night)

About how long was the wait time for this trip? _____ minutes

About how long was the travel time in the vehicle? _____ minutes

About how much did the trip cost? \$ _____ OR I don't know because someone else called the ride.

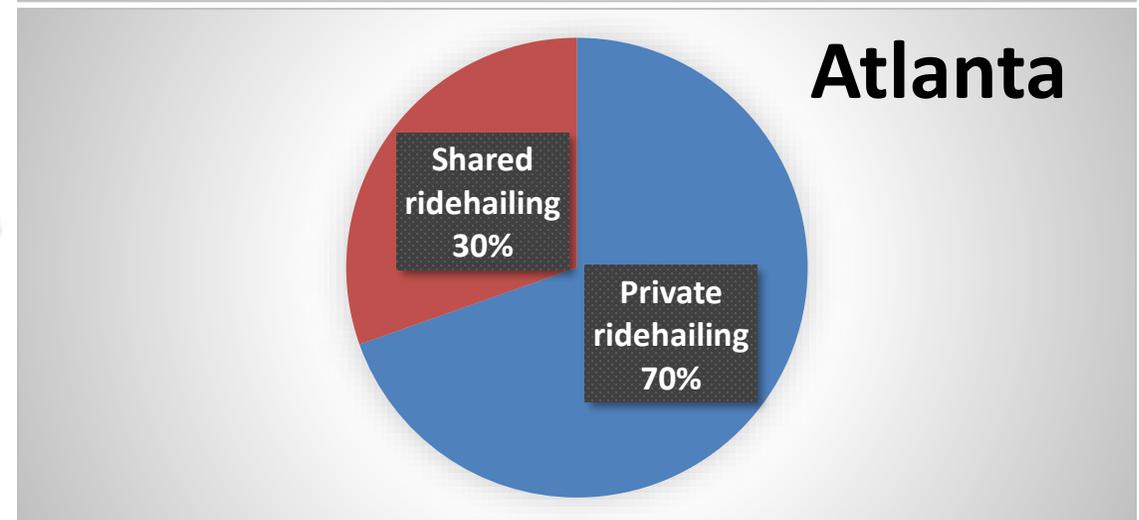
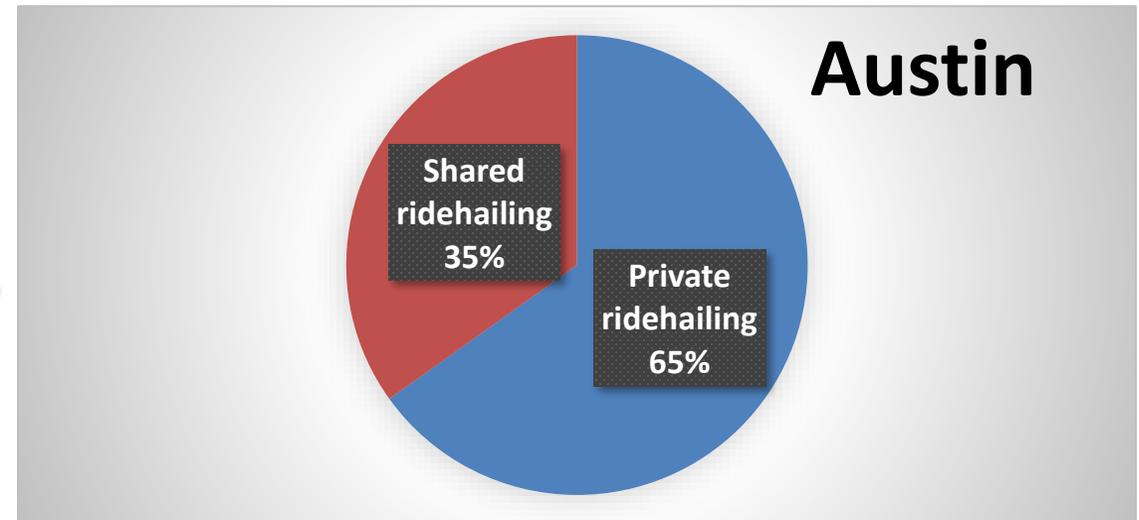
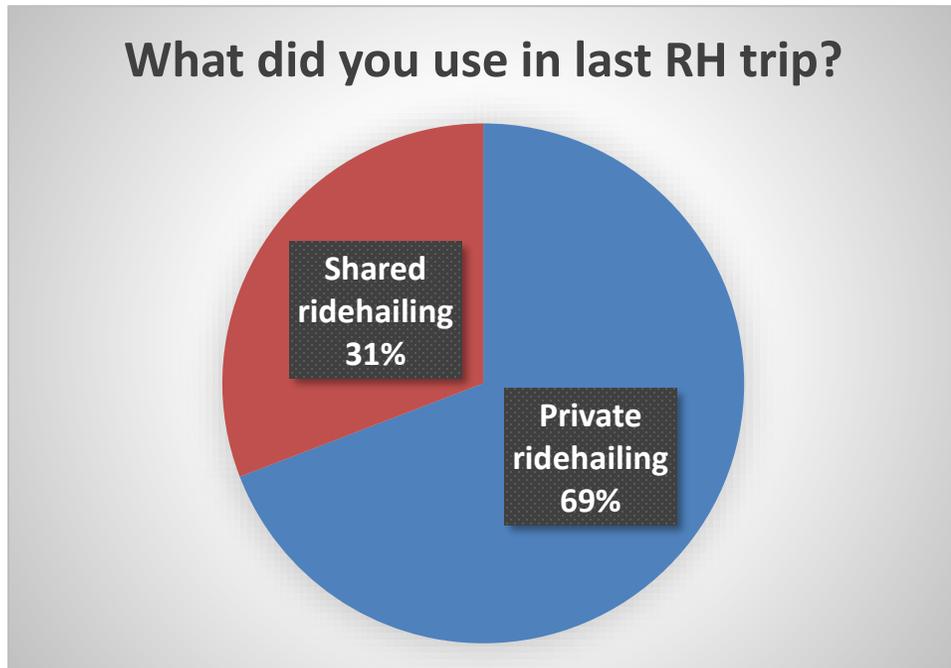
What was the primary purpose of the trip? Please check the **best answer**.

Work/school
 Shopping/errands
 Eating/drinking
 Social/recreational
 To access airport
 To access public transit
 Medical/dental
 Going/returning home from another location
 Other (please, specify): _____

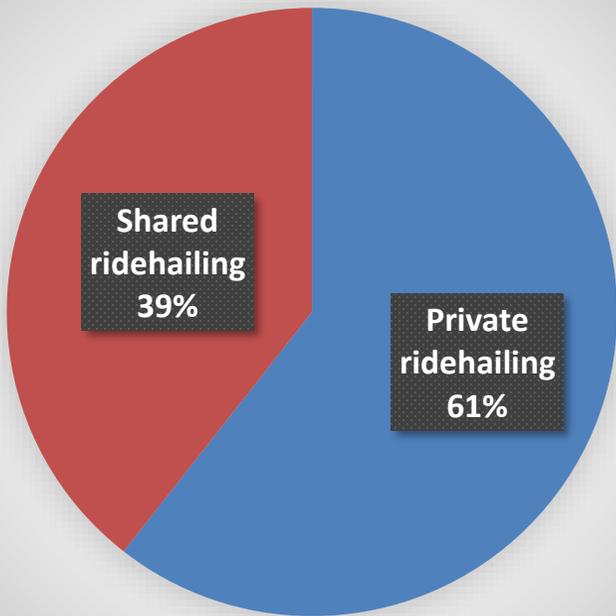
How many other passengers traveled with you?

I was the only passenger OR
 _____ Family members, friends or colleagues
 _____ Other passengers matched via the app (for shared ridehailing)

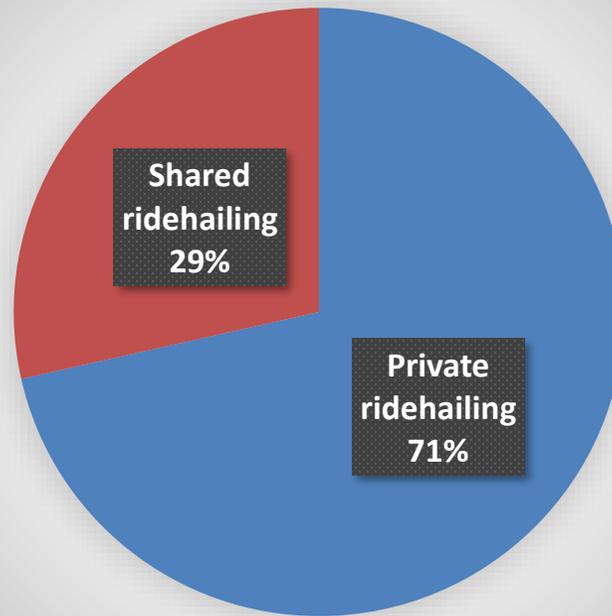
Last RH Trip Mode: Geographic Variation



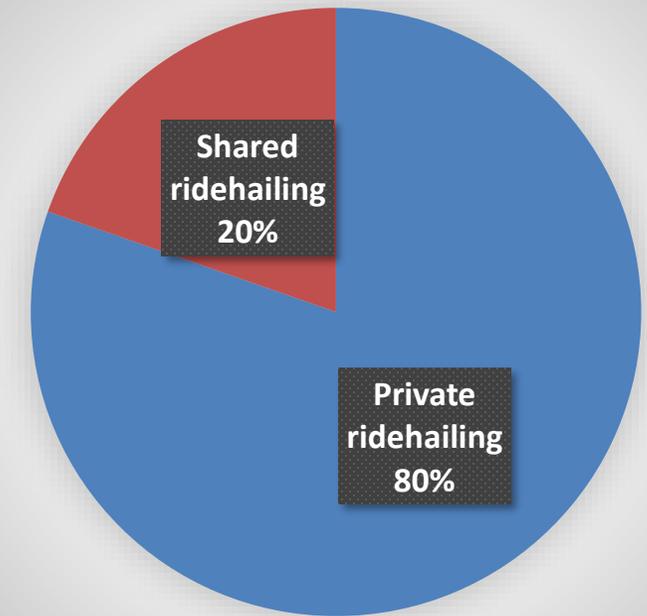
Last RH Trip Mode: Income Effect



Low income
(below \$50,000)

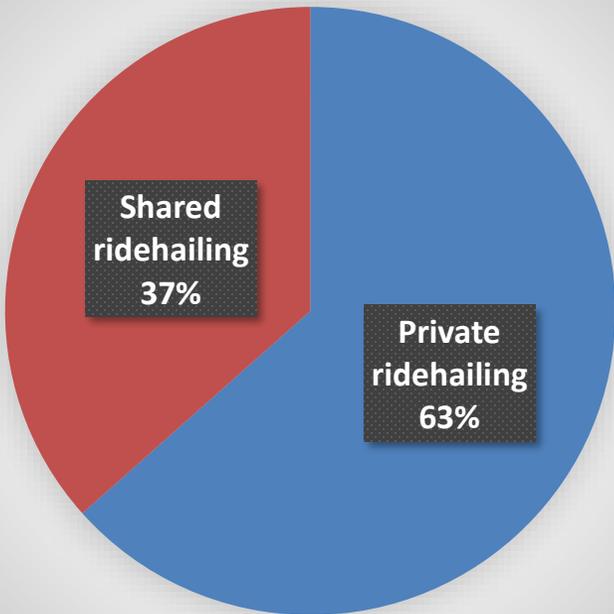


Medium Income
(\$50,000-\$150,000)

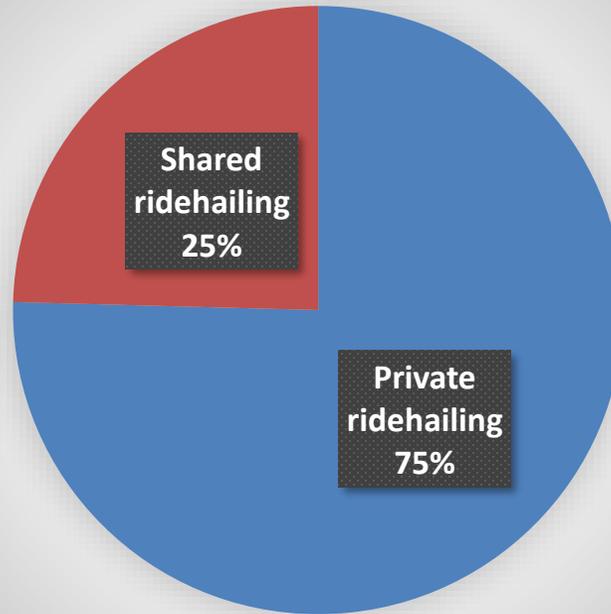


High Income
(above \$150,000)

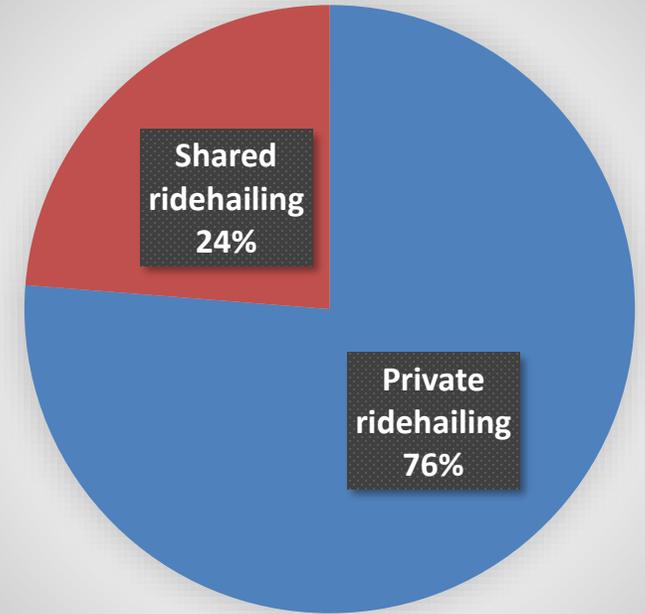
Last RH Trip Mode: Age Effect



Young Adults
(18-30)

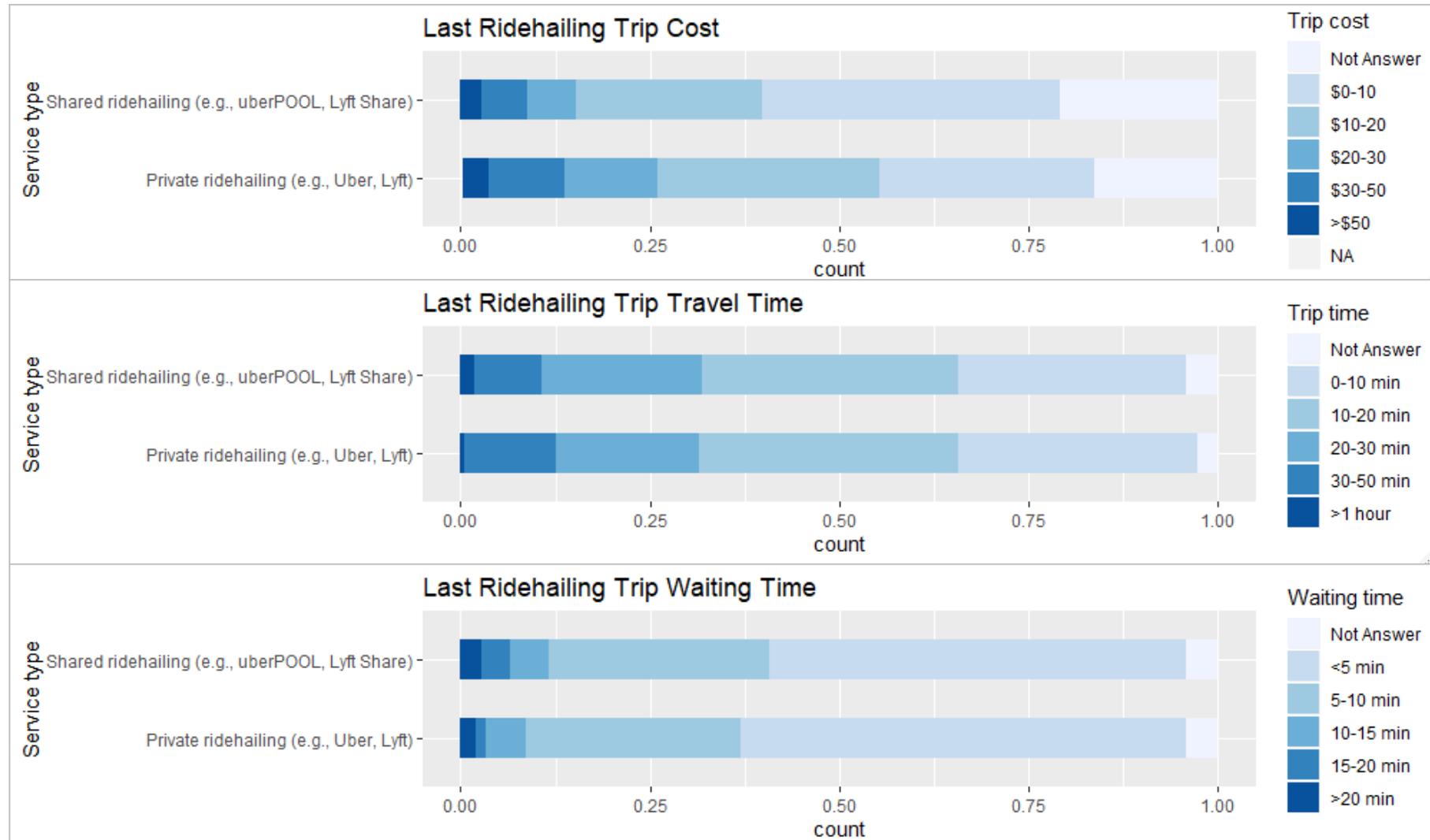


Middle-Aged
(31-50)

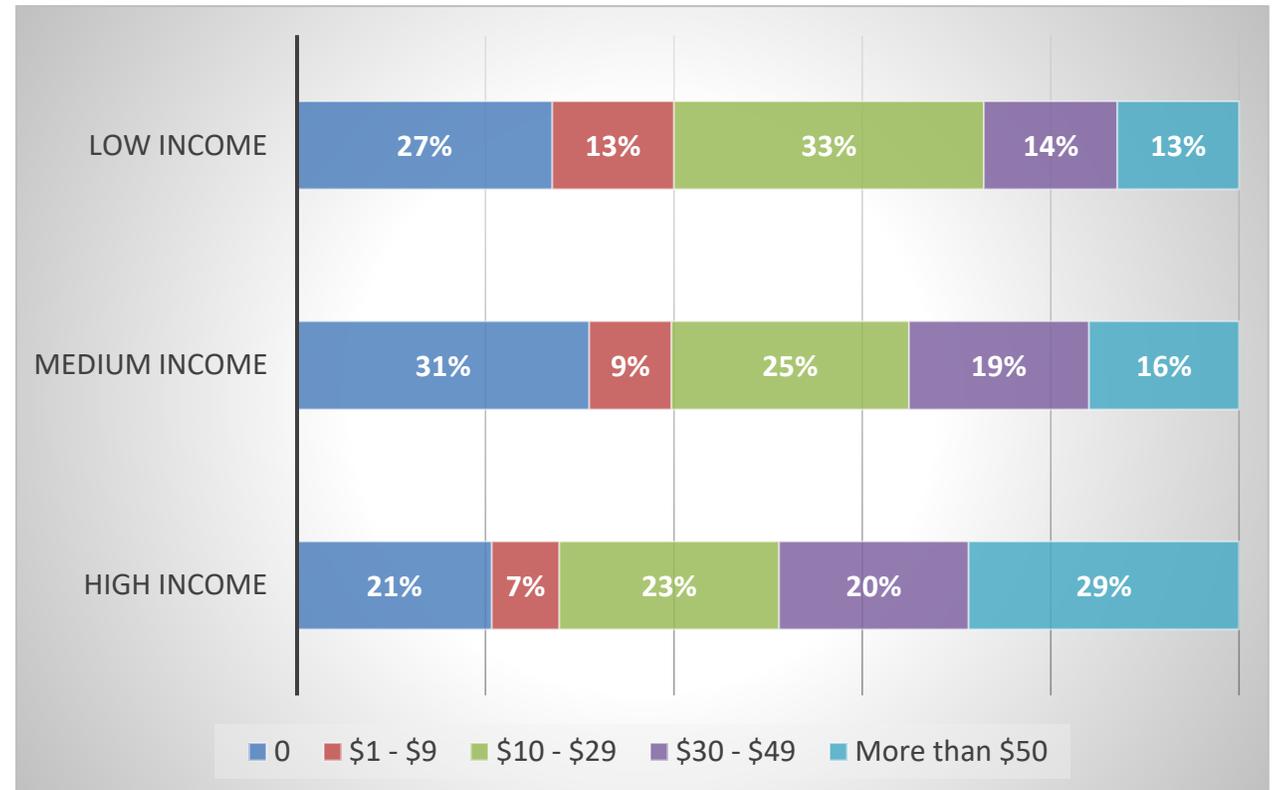
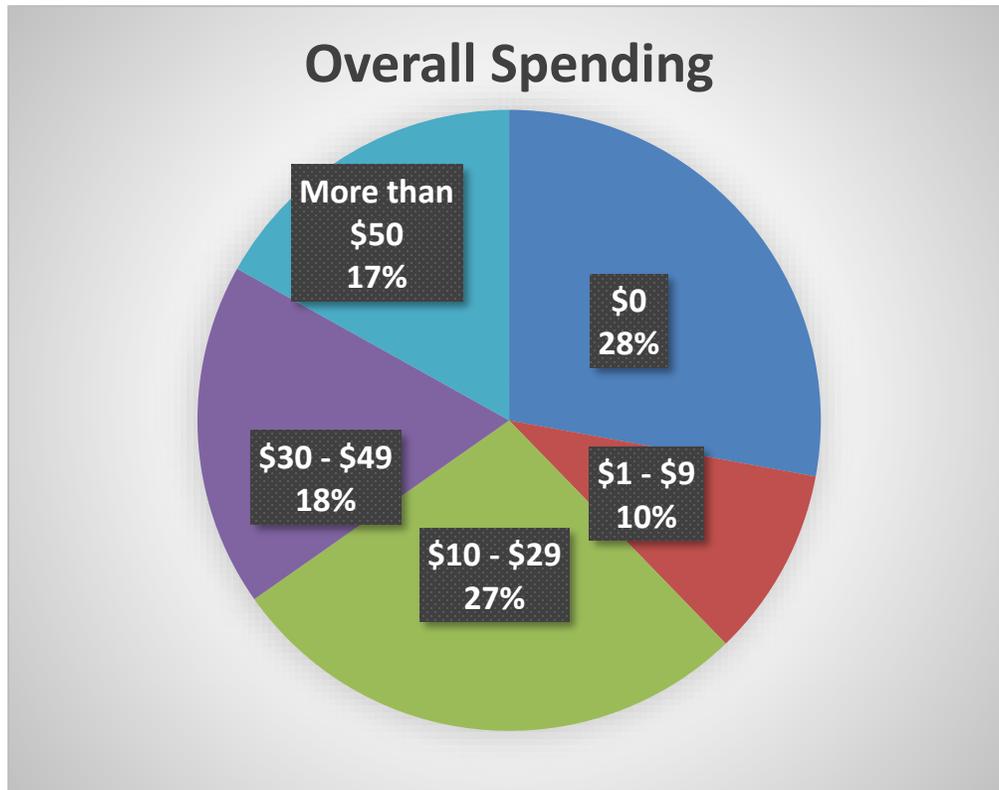


"Old" Adults
(above 50)

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



How much did you spend on RH last month?



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.*

Option 1:

Private ridehailing

(e.g., Uber and Lyft)

Option 2:

Shared ridehailing

(e.g., uberPOOL and Lyft Share)

Social/Leisure \$ 18.00/ 20 minutes

\$ 12.00/ 35 minutes/ three additional passengers

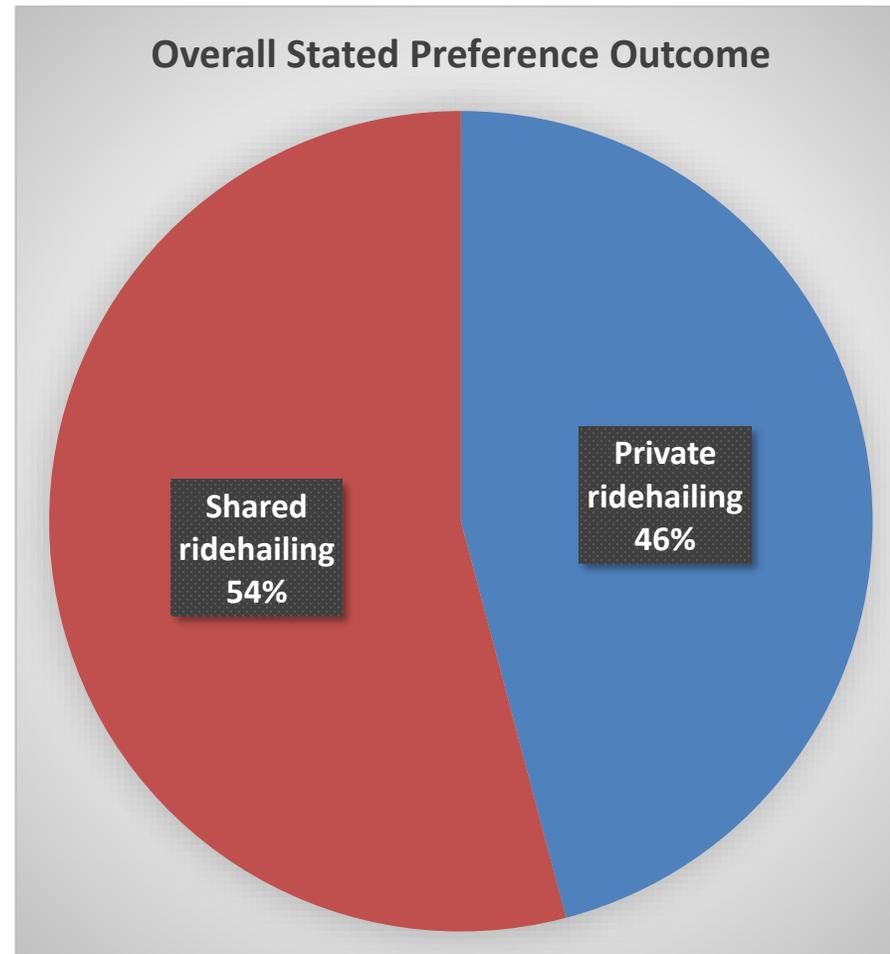
Shopping \$ 13.00/ 15 minutes

\$ 10.00/ 25 minutes/ two additional passengers

Work/School \$ 8.00/ 10 minutes

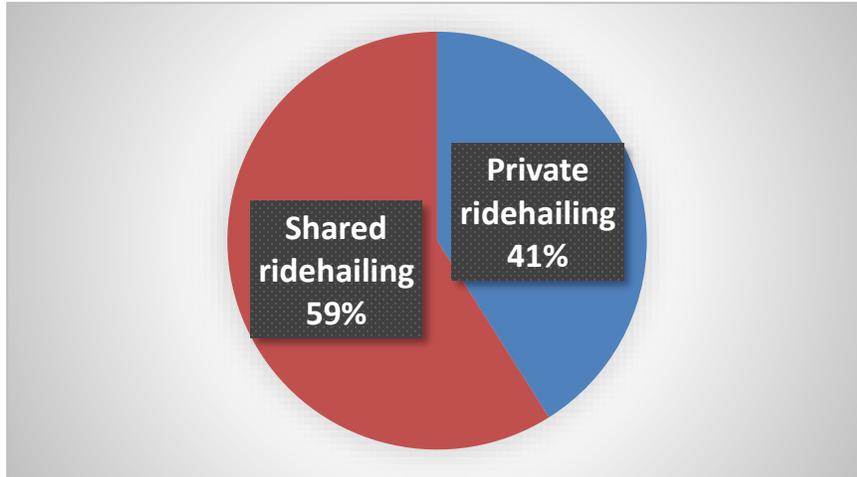
\$ 6.00/ 15 minutes/ one additional passenger

Stated Preference

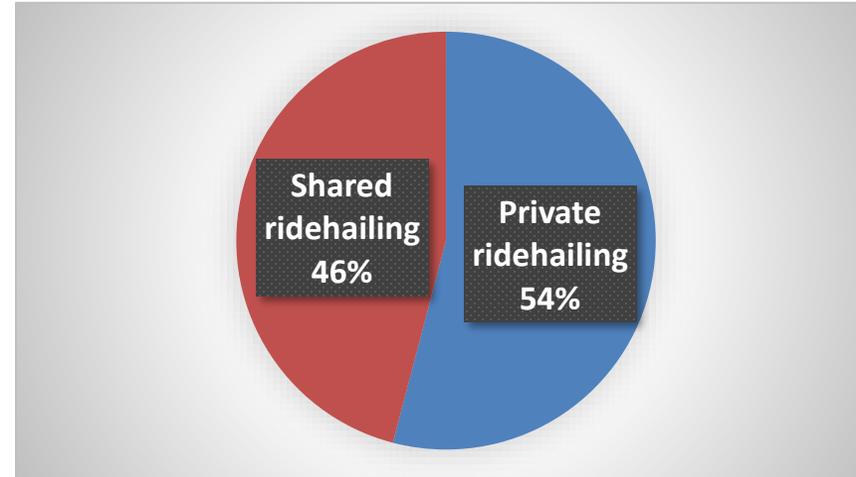


Stated Preference: Geographic Variation

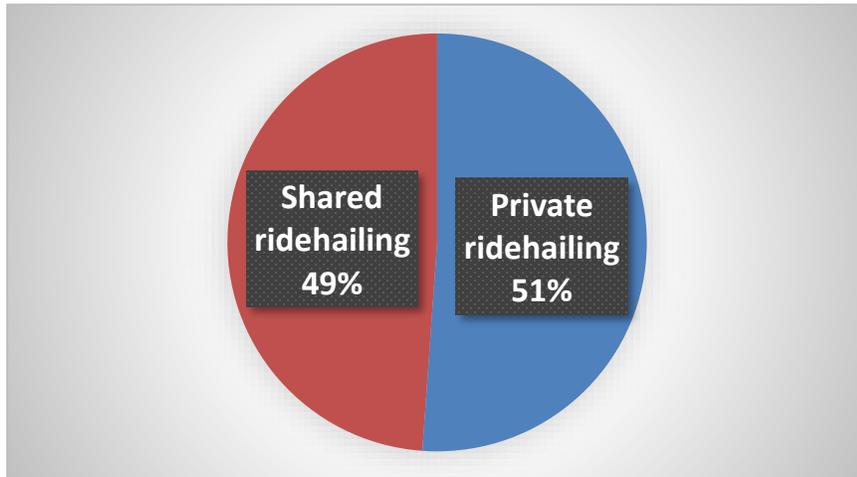
Austin



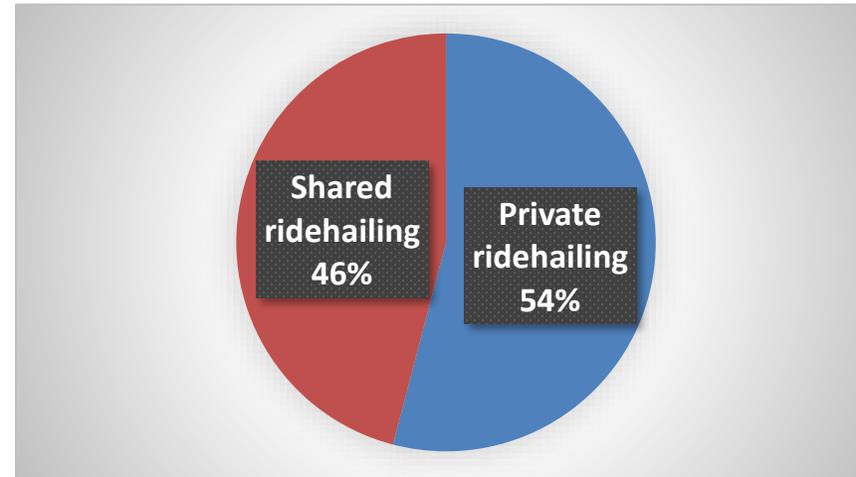
Phoenix



Atlanta

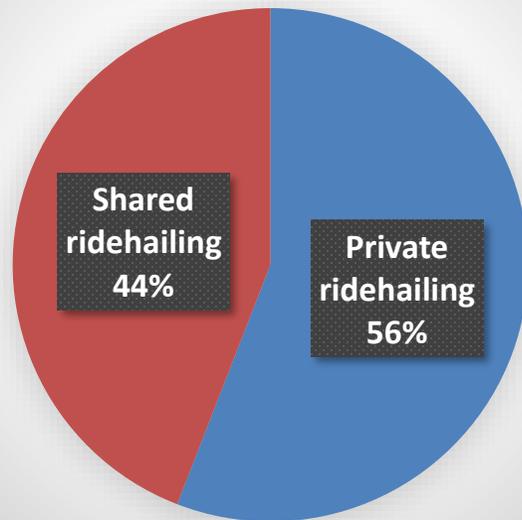


Tampa

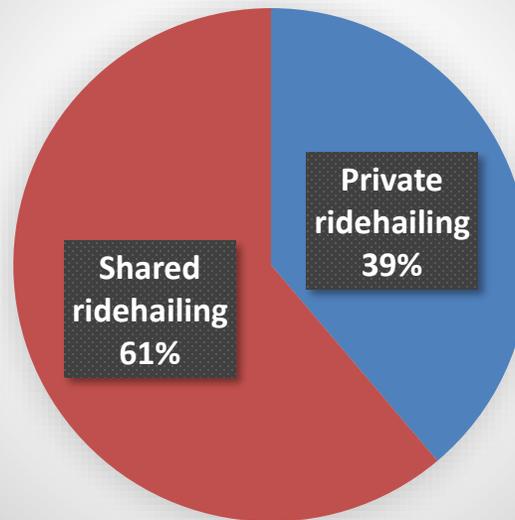


Stated Preference: Trip Purpose Variation

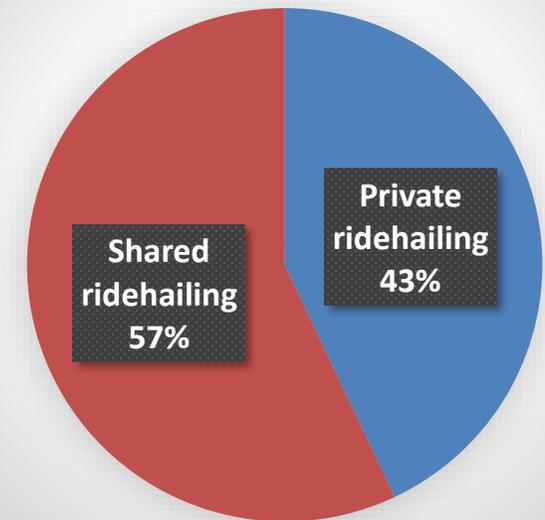
Commute



Shopping

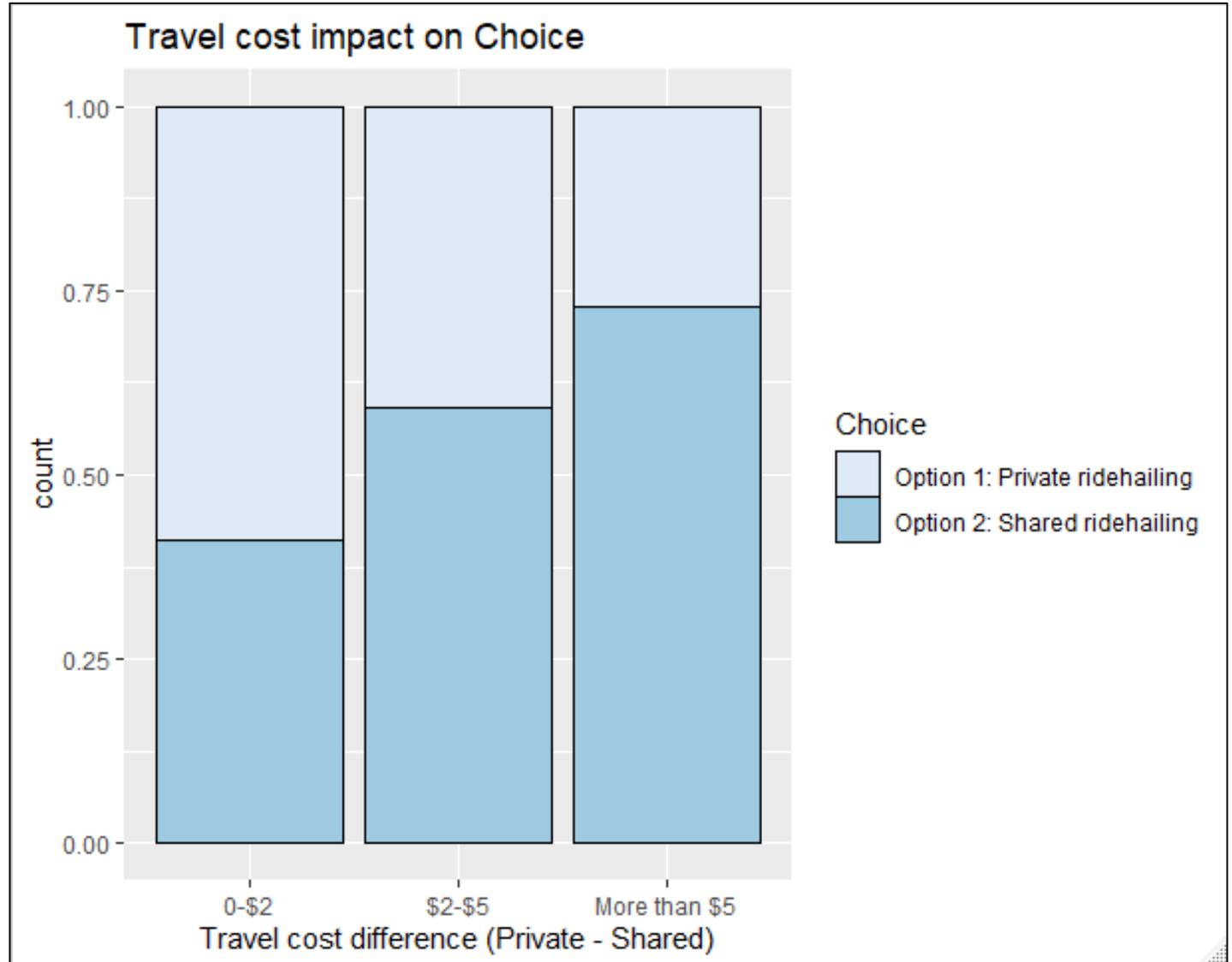


Social/Leisure



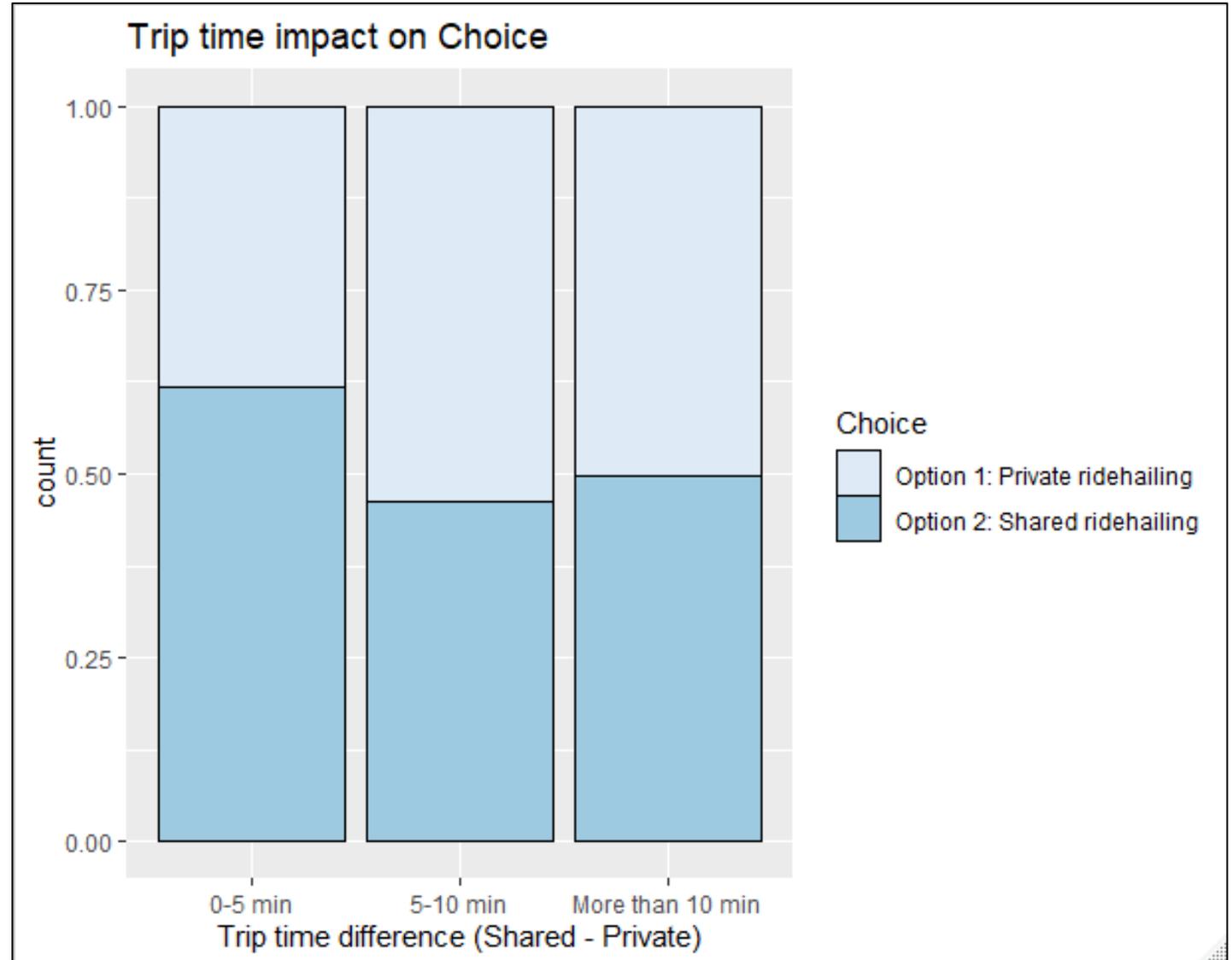
Stated Preference

Higher travel cost discourages people from choosing private RH



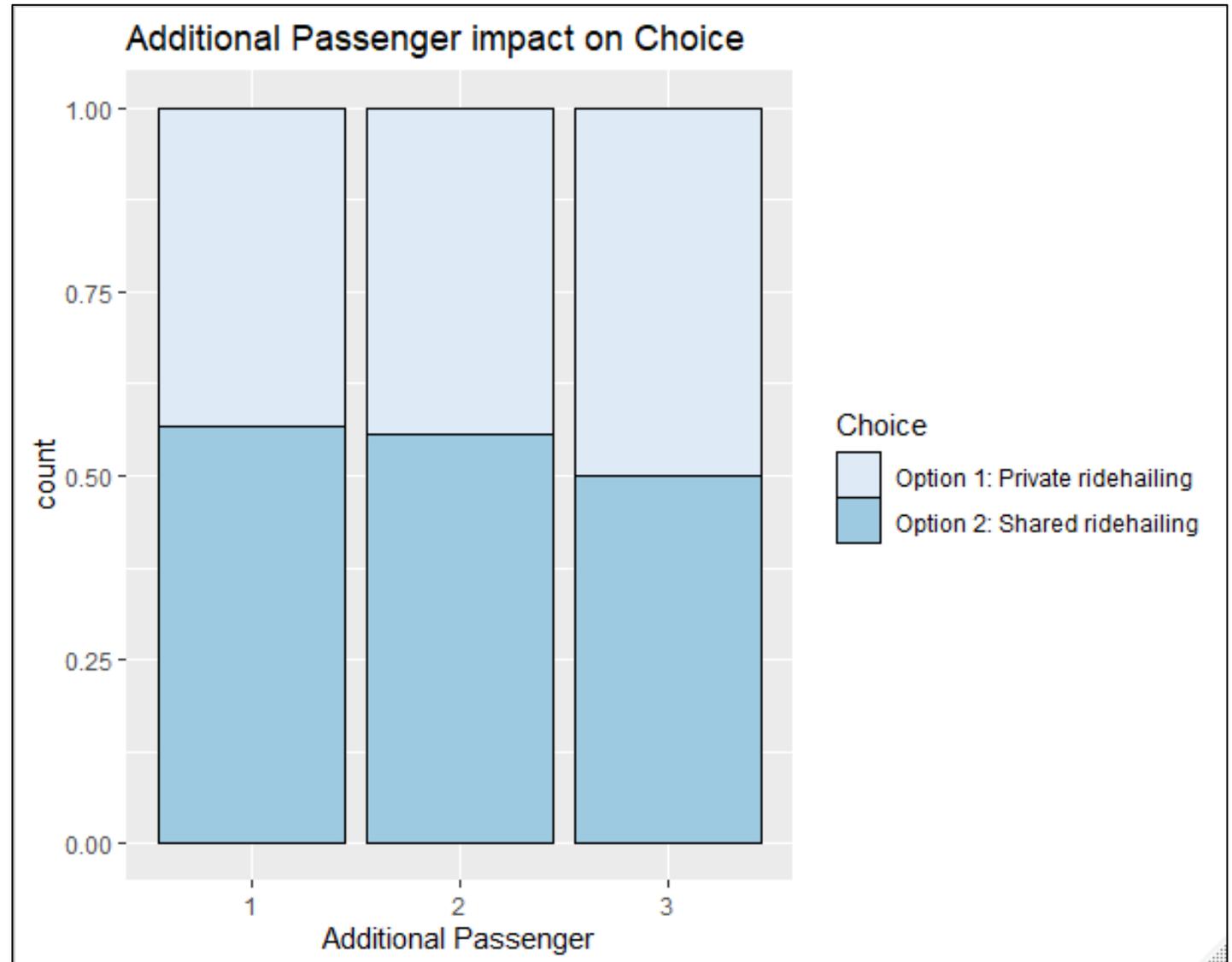
Stated Preference

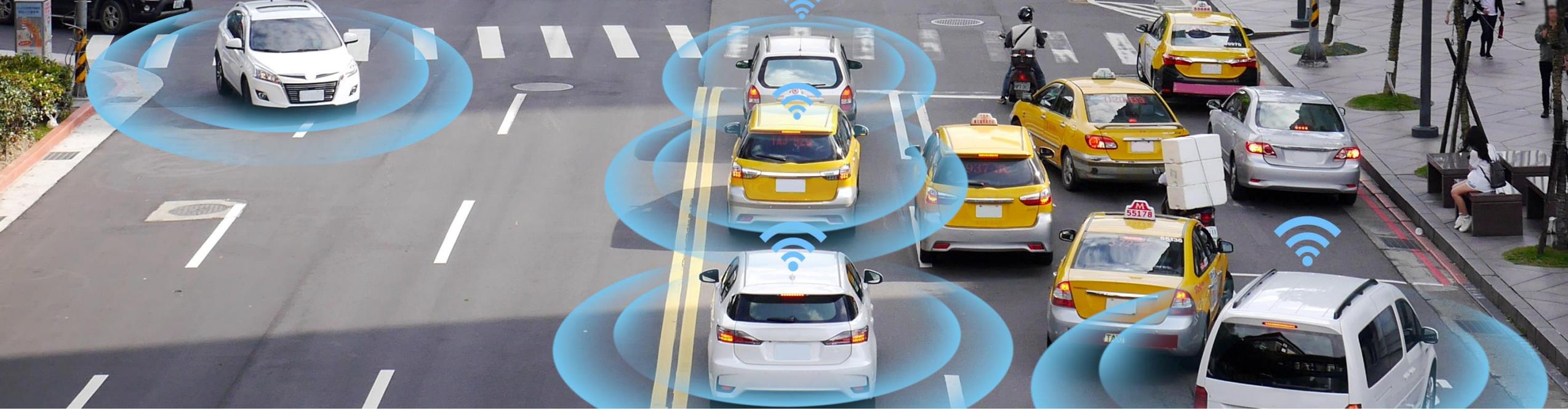
Higher trip time discourages people from choosing shared RH



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!

Shuqing Kang, kangshuqing@utexas.edu

Aupal Mondal, aupal.mondal@utexas.edu

Chandra Bhat, bhat@utexas.edu

Special thanks to Felipe Dias.