What Drives your Drivers: An In-Depth Look at Lyft and Uber Drivers

Rosaria M. Berliner (aberliner@ucdavis.edu), Gil Tal (gtal@ucdavis.edu)
Institute of Transportation Studies, University of California, Davis
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Abstract

Lyft and Uber are two of the most well-known, on-demand ride-service providers in the current landscape of shared mobility. As monthly ridership for these two services grow, researchers are left wondering about the individuals giving the rides: the drivers. This paper shifts the focus from on-demand, ride-sharing passengers to the drivers – a topic to which little attention has been paid. In August 2015, Kelley Blue Book provided a dataset from its nationwide survey of U.S. residents aged 18 to 64 that collected information on shared mobility awareness and usage, personal vehicle ownership, aspirations for future vehicle ownership, and attitudes and opinions on shared mobility and personal vehicle ownership. We estimate an ordinal logit to understand the willingness to be a driver for an on-demand ride sharing service. We find that the individuals who report higher VMT and that have more children are more willing to drive for the service. Older women with higher incomes are among the least likely to desire driving for these services. We introduce attitudinal factors and find that those who believe "Ride-sharing is better than vehicle ownership" are more willing to drive for these services. Furthermore, vehicle ownership is positively correlated with the desire to drive for on-demand ride services – owning a vehicle makes it possible for an individual to drive. The next step of this research is to develop a new survey that over samples ride-sharing drivers to better understand who is driving for these services, rather than who is willing to drive for them.

Keywords: On-Demand Ride Services, Shared Mobility, Uber/Lyft drivers, Ordinal Logit

Background

With more than 40 million monthly riders, many ride service researchers have focused their research on the rider. Some research focuses on driver safety and other research on driver wages. To date, there is very little research on driver characteristics.

Overall Research Questions

What types of individuals want to drive for on-demand ride sharing companies such as Lyft or Uber?

What motivates an individual to drive for one or both of these companies?

Content of the Survey

The online survey collected information on:

1. **Socio-demographic information (introduction):** Age, gender, ethnicity, marital status, parental obligations, child information, household location, and neighborhood type.
2. **Vehicle ownership:** Vehicle ownership, including the number of vehicles in the household, general vehicle characteristics, and the respondent's future vehicle purchase timeline.
3. **Travel attitudes:** Beliefs and opinions about driving, personal transportation, and vehicle ownership.
4. **Ride sharing and vehicle sharing information:** Familiarity and usage of ride sharing and vehicle sharing services.
5. **Ride sharing attitudes:** Ride sharing attitudes and acceptance of different pricing schemes for ride sharing services,
6. **Vehicle sharing attitudes:** This section collected similar information to the previous section but within the context of vehicle sharing.
7. **Future transportation:** Future travel intentions. Specifically, the survey asked about the situations in which respondents would use a certain mode of transportation. Furthermore, for those who indicated that they had not used ride sharing or vehicle sharing, attention was paid to what would encourage them to use these services in the future.
8. **Socio-demographics (conclusions):** The final section collected information about shared economy usage (e.g., AirBnB, VRBO, Couchsurfing, etc.), in addition to employment status, daily VMT, home parking availability, number of people in the household, level of education, and annual household income.

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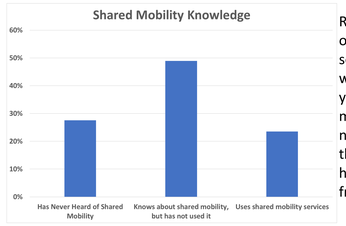
Shared Mobility Experiences

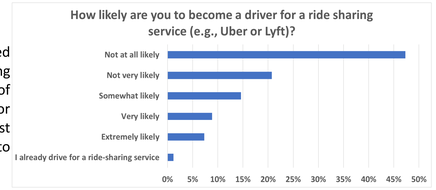
Kelley Blue Book contracted a market research company to collect respondents for their survey. The average respondent in the dataset is 37 years old, female, Caucasian, married, has no children, has a household income of approximately $62,500, and has an average of 1.18 vehicles in the household.



N= 1,916 (Sample size)

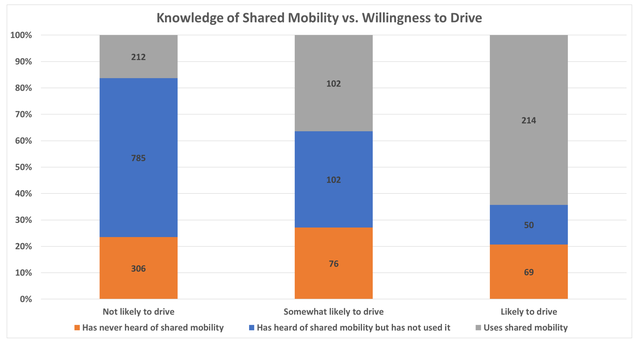
Roughly 50% of respondents indicated they had prior knowledge of these services and 28% indicated no prior knowledge of these services. Although not shown in the graph to the right, women were less likely to use shared mobility services. In general, the youngest respondents were more likely to have had used shared mobility services. Surprisingly, the average age of those who had no prior knowledge of shared mobility was 36 years old, whereas the average age of those who had heard of the services but hadn't used them was 40 years old. In terms of income, those from households with the highest average incomes were more

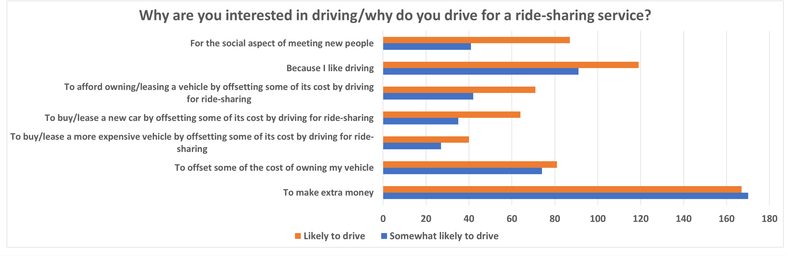
Nearly 50% of respondents (906) indicated absolutely no interest in driving for a ride-sharing service, such as Uber or Lyft. Whereas 17% of respondents indicated some interest in driving for these services. As with usage, the youngest respondents indicated the highest willingness to drive for ride-sharing services.



Shared Mobility Drivers

Those interested in driving for ride-sharing services tend to be younger, drive more, and have higher household incomes.





Model Specifications and Results

We estimated an ***Ordinal Logit Model*** on the unweighted sample. While other studies suggest that multinomial logit (MNL) models provide a deeper, more thorough understanding of the dependent variable, the authors believe that treating this variable as nominal would violate the ordinal relationship of the variable. We risked an IIA violation since MNL treats the response variable as purely nominal variables. While there are risks with an ordinal logit model, we employed a parallel lines test to check that the slope parameters stayed the same for all response outcomes and that it is only intercepts that change.

Term	Estimate	Std Error	Chi Square	Prob>ChiSq
Cut 1 [Not likely to drive]	0.524	0.177	8.73	0.0031
Cut 2 [Somewhat likely to drive]	1.674	0.183	83.68	<.0001
Age	0.029	0.005	39.32	<.0001
VMT	-0.008	0.003	8.95	0.0028
Number of Children	-0.216	0.054	16.19	<.0001
Female	0.221	0.057	15.23	<.0001
Vehicle Ownership Factor – Pro-vehicle ownership	0.194	0.090	4.66	0.0309
Vehicle Ownership Factor – Adventurer/multi-tasker	-0.699	0.104	45.07	<.0001
Doesn't own a vehicle (Indicator)	0.405	0.081	25.04	<.0001
RS Factor – Pro-ride sharing	-0.303	0.073	17.07	<.0001
RS Factor – Ride sharing is better than vehicle ownership	-1.217	0.087	195.19	<.0001
Number of observations	1916			
R-Squared	0.223			

As the age parameter increases, the willingness to drive for on-demand ride sharing services decreases. Older individuals are not as familiar with these services, perhaps because they have white collar jobs that would make driving appear less beneficial than it would to a person in his or her 20s or 30s. Women are less likely to drive for on-demand ride sharing services. Women, compared to men, may feel more uncomfortable or vulnerable driving or being alone with strangers in their vehicle. As VMT and the number of children at home increase, the willingness to drive for on-demand ride sharing increases. Having children living in your home and being a parent means finding employment that is flexible and will work with your schedule: driving for a service such as Lyft or Uber provides that flexibility needed in that environment.

Conclusions and Future Work

Socio-demographic variables:

- As shown in the model, the willingness to drive for an on-demand ride-sharing service decreases as age increases.
- Those who drive more, on average, are more willing to drive for an on-demand ride sharing service.
- Women are less willing to drive for an on-demand ride sharing service. This is consistent with literature on taxi drivers.
- Those who do not own their own vehicle are less willing to drive for an on-demand ride sharing service. It should be noted that this survey was disseminated prior to vehicle rental programs made available by Uber or Lyft. Without access to a vehicle, it was nearly impossible to drive for these services; this has changed due to the successful vehicle rental programs.

Attitudinal factors:

- The inclusion of the "adventurer/multi-tasker" factor attempts to capture the effect of variety seeking individuals. All else equal, those who score highly on this factor are more willing to drive for an on-demand ride sharing service.
- The inclusion of the "Ride sharing is better than vehicle ownership" factor attempts to capture the effect of those who favor the sharing economy. All else equal, those who score highly on this factor expressed a higher willingness to drive for on-demand ride sharing services.
- The inclusion of the "pro-vehicle ownership" factor attempts to capture the effect of those who prefer a traditional vehicle ownership system. Those who score highly on this factor expressed a lower willingness to drive for on-demand ride sharing services. This finding initially surprised the authors; however, upon further reflection it could be that individuals who prefer traditional vehicle ownership are less willing to meet new people or engage in a sharing economy.

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