

## Project Title: Investigating Public Opinions towards Emerging Transportation Technologies and Service Forms

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In recent years, there has been a significant shift in how people use the transportation system. New technologies have resulted in new trends surrounding transportation. In this study, three emerging trends were considered: delivery lockers, crowd delivery, and autonomous vehicles.

In April 2017, a survey was sent via email to 62,000 New York residents. The first portion of the survey collected general demographics and online shopping patterns. The second portion of the survey contained questions about each of the three emerging trends, designed to obtain opinions and usage patterns. Unfortunately, a large percentage of the sent emails did not reach many respondents and only 59 completed surveys were received.

Survey respondents were generally older than the general statewide population, with a median age lying between 45 and 54. The median income lied within the \$90,000-\$109,999 bracket and slightly over 42% of respondents had a graduate degree. Roughly half of respondents were located in the New York City metropolitan area. All but one respondent shopped online within the month before the survey, with clothing being the most common purchase.

Slightly over 10% of respondents recalled seeing a delivery locker, with roughly 6% having used one because they were unavailable for delivery at home. Respondents were neutral with regards to whether or not they would use a locker and few would detour more than 5 miles to visit a locker. Using the survey to generate an ordered probit model, it is predicted that frequent online shoppers, men, and the 55-64 age group are most likely to use lockers.

Approximately 90% of survey respondents understood the concept of crowd delivery (using a pool of independent individuals to deliver products). Respondents were generally either neutral to the idea of or unwilling to accept a delivery from a crowd delivery service. If considering specific product types, respondents were least likely to accept crowd deliveries for expensive items. Using an ordered logit model, it was predicted that low- and medium-income individuals are most likely to utilize crowd delivery, as are younger people. In general, the model predicts that crowd delivery will be accepted in approximately 20% of cases and rejected in nearly half of cases.

Opinions of autonomous vehicles tended to be neutral, with a slight lean toward positive opinions. All but 3 respondents had heard of autonomous vehicles prior to the survey. Approximately 40% of respondents indicated that they would never ride in an autonomous vehicle and, even among those that would ride in an autonomous vehicle, most indicated that they would watch the road while riding in one. Generally, younger respondents had a more positive opinion of autonomous vehicles, as did wealthier respondents. A multivariate probit model was used to predict the activities people would perform in transit. Younger and higher-income individuals were both more likely to work and more likely to do non-productive activities while riding in an autonomous vehicle, while older respondents and women were more likely to watch the road.

Since the survey has taken place, autonomous vehicles have been legalized in New York and crowd delivery has become widespread with Instacart. Due to these reasons and the lack of responses, more studies are necessary to determine where public opinion currently stands.

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