

Project: [Impact of COVID-19 on Travel Behavior and Shared Mobility Systems](#)

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Summary

The COVID-19 pandemic has caused unprecedented disruption to businesses and daily lives. Various aspects of travel, transportation, and mobility were impacted since the outbreak of the virus. Despite the challenges associated with infection spread, transportation remains a crucial component for moving people during and after the pandemic. Critical also is the movement of essential workers and service providers who need to travel to serve their communities. As was the case with other sectors, transportation providers have struggled to keep services running in response to the massive drop in ridership levels. As a result, several providers adjusted their business models, and added new dimensions to their suite of offerings. For example, many shared mobility providers added food delivery services to compensate for the loss in ridership. At the individual level, to respect social distancing and protect themselves and families, most people have preferred using private vehicles rather than shared mobility systems, like public transportation and ride-sharing services.

The objective of this research study was to provide an enhanced understanding of the impacts of COVID-19 crisis on travel behavior, and shared mobility systems. A comprehensive web-based review was conducted to scope out all publicly available strategies that have been adopted by shared mobility providers/entities to combat the COVID-19 pandemic. The key findings from this exercise include the following:

- Public transit and ride-hailing ridership have greatly decreased during the lockdowns.
- Bike sharing operations have increased manifold and pose as a transportation mode with immense potential post-COVID-19.
- Robot taxis are identified as being critical to deal with future pandemics in order to facilitate social distancing and help with testing, deliveries, and other day-to-day operations.

Based on the web-review conducted, the research team believes that some changes that heralded as a consequence of the pandemic in the shared mobility space may remain long after the pandemic no longer remains a threat. They include:

- Stricter hygiene and cleaning standards for drivers and users of shared mobility systems
- Additional open space on the road for micromobility services
- Change in location decisions (residential and employment), vehicle occupancies, and vehicle miles traveled as a consequence of travel behavioral changes induced due to the pandemic

- Change in the future of shared mobility services with newer business models and dimensions to supplement pre-COVID business models
- Renewed preference for ICT-enabled strategies, tele-activities, on-demand deliveries, and telecommuting

In addition to the extensive web-based review, a comprehensive nationwide stated preference survey was conducted as part of this study. Some key findings are as follows:

- As people moved away from shared mobility systems, there was a greater tendency to purchase vehicles since the onset of the COVID-19 pandemic. This may lead to additional VMT if activity engagement, and trip-making characteristics go back to pre-COVID levels.
- The return of telecommuting is here – while organizations may not always allow for work-from-home on all work days a week, U.S. adults feel that there is a greater likelihood for increased flexibility in working arrangements (in the case of those who can afford to work from home). Flexible work schedules may also have strategic advantages down the line for organizations.
- Trip making has changed significantly since the onset of the pandemic with public preferences against the use of shared transportation modes for the fear of infection spread. While this is the case right now, there is grounds to believe that some of the lost patronage on the part of shared transportation modes will be recovered once the COVID-19 pandemic is no longer a threat. Results also show an increasing public preference for open transportation modes such as biking and walking.
- Shared mobility systems have been significantly impacted by the pandemic. Results from this study show that there is heightened concern or skepticism regarding the use of shared mobility modes that involve coming in close contact with other people (such as pooled ridehailing, and transit). Shared mobility providers may need to significantly invest in resources and add new dimensions to their operations in order to recover the lost patronage.
- Finally, there seems to be a growing understanding that some of the current constraints in terms of mobility, and activity engagement are likely to continue until at least the next six months to a year. While people may not involve themselves in all kinds of activities, comparable to pre-COVID levels, results from the stated preference survey show that some of the old habits/preferences may resume once the COVID-19 pandemic is no longer a threat.

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