



Travel Behavior Trends During the COVID-19 Pandemic

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The proliferation of digital devices and online services over the past decades has changed how people travel, enabling new mobility options and offering greater opportunities for e-commerce and telework. Researchers are still trying to understand how these new technologies and emerging transportation services are being adopted by different socio-demographic groups, and what the current trends might mean for transportation sustainability.

In 2019, researchers at UC Davis launched a national survey to gain insights on general travel behaviors and the adoption of various emerging technologies. The researchers looked at behaviors such as the adoption of smartphones and information and communication technology, telecommuting, new mobility options, electric vehicles, and other alternative-fuel vehicles. The survey design built on previous survey efforts, and the team planned to administer a similar survey every year.

With the onset of the COVID-19 pandemic in early 2020, the researchers modified their plan to understand new trends, such as increased remote work, online/virtual meetings, and e-shopping, as well as changes in travel. The team launched additional rounds of surveys to collect information on several additional topics in spring 2020, fall 2020, and summer 2021 (with a new round of data collection planned for fall 2022). The longitudinal dataset provides insights into emerging changes in transportation patterns, including the generational or sociodemographic differences in those changes, before and during the COVID-19 pandemic.

Key Research Findings

Remote work became popular at the beginning of the pandemic, but a hybrid workstyle became more common later on. More than 75% of employed survey respondents reported that they were engaged in remote work at least one day per week in the first phase of the pandemic. Remote work remained a common practice in fall 2020. By summer 2021, a large proportion of workers reported they balanced their personal life, on-site work, and flexible work by adopting some form of hybrid work, combining remote work with some days physically commuting.

Use of private vehicles, public transit, and ridehailing plummeted in spring 2020, but the pace of recovery has been much faster for car travel than other modes. The usage of most transportation modes for work and leisure dropped in spring 2020 because of the stay-at-home orders, work from home arrangements, and social distancing to avoid COVID-19. Private cars had seen the highest degree of recovery by fall 2020, likely because people considered private vehicle travel to be the safest option. Demand for public transit remained low in fall 2020, except among blue-collar workers and individuals with low incomes, who often kept commuting by public transit.

Walking and bicycling were recognized as safer means of travel and good sources for recreation and exercise during the pandemic. Active travel modes did not see a major decline in usage in 2020, apart from a reduction in total commuting trips due to remote work arrangements. There was a large increase in walking and bicycling for non-work travel among non-commuters in spring 2020, which implies that active modes were used for some recreational and/or physical-activity.

E-shopping increased for grocery and non-grocery items when the pandemic started, accelerating the global trend from the pre-pandemic period (Figure 1). While the rate of e-shopping leveled off to some extent by fall 2020, it remained considerably higher than before the pandemic.

The pandemic impacted people’s attitudes related to transportation to a limited degree. Survey results showed a marked increase in the desire to own a car during the pandemic. This could lead to further reliance on private vehicles in the future. Despite the decrease in public transit use for both work and leisure purposes, most individuals did not significantly change their attitudes toward protecting the environment or the adoption of eco-friendly transportation modes.

More Information

This policy brief is largely drawn from “The Pulse of the Nation on 3 Revolutions: Annual Investigation of Nationwide Mobility Trends,” a report from the National Center for Sustainable Transportation, authored by Giovanni Circella, Keita Makino, Grant Matson, and Jai Malik with the 3 Revolutions Future Mobility Program at the University of California, Davis. The full report can be found on the NCST website at <https://ncst.ucdavis.edu/project/annual-investigation-nationwide-mobility-trends-pulse-nation-3-revolutions>.

For more information about the findings presented in this brief, please contact Giovanni Circella at gcircella@ucdavis.edu.

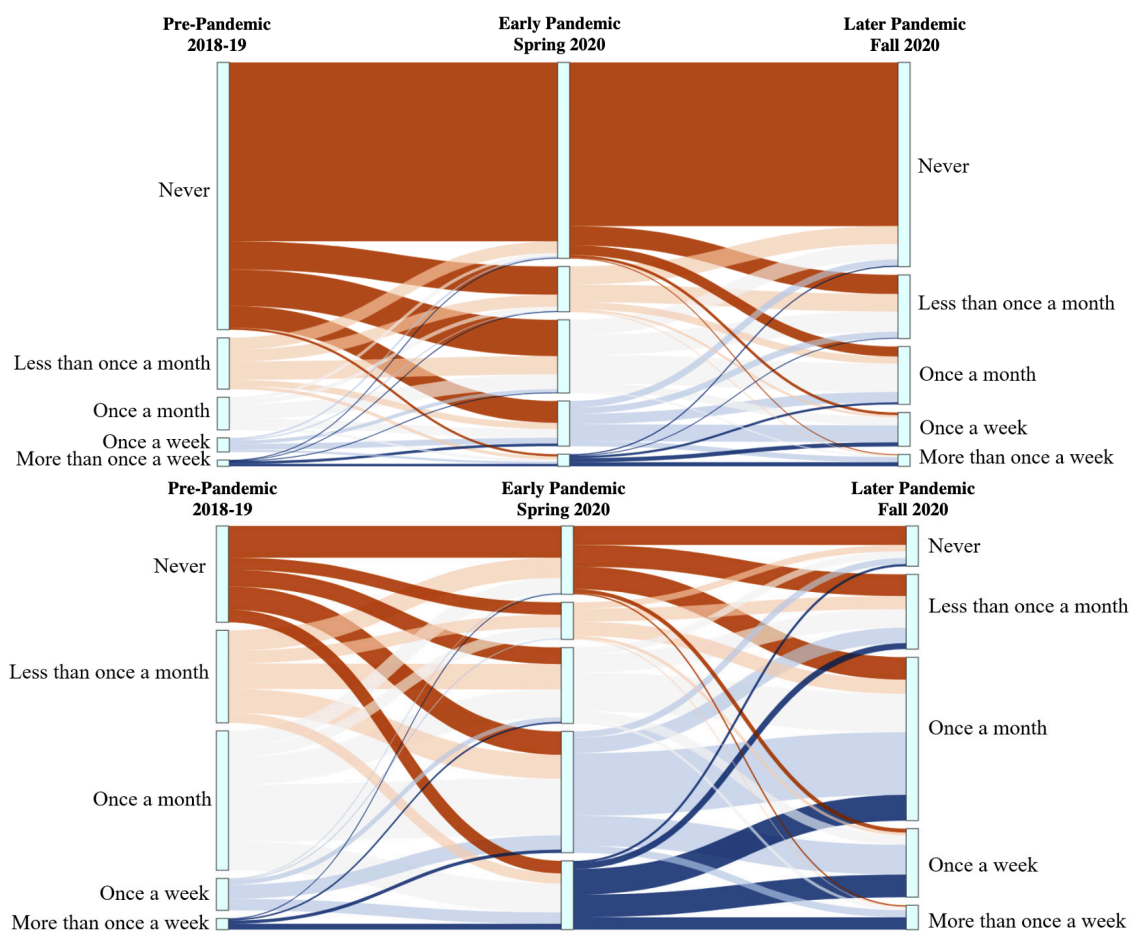


Figure 1. Frequency of shopping online before and during the early stage of the pandemic in spring 2020 and a later stage in fall 2020 for grocery items (top) and non-grocery items (bottom). The sample size includes 1,723 respondents that participated in both 2020 survey waves.

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