

Studying the Temporary vs. Longer-Term Impacts of the COVID-19 Pandemic on Mobility

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UC Davis COVID-19 Mobility Study

- Research on temporary vs. longer-term impacts of the pandemic
- Targeted data collections in 15 regions of the United States and two regions in Canada (+ convenience sample internationally)

Previous 2018-2019 data

Information on many topics, e.g.

- Household organization
- Telecommuting patterns
- E-shopping behaviors
- Travel patterns
- Vehicle ownership
- Emerging delivery services
- Personal attitudes and preferences
- Shared mobility adoption
- Propensity towards AVs



COVID-19 Spring 2020 data

Data collection on:

- Impacts of the COVID-19 on lifestyles
- Employment and activities
- Household organization and child care
- E-shopping behaviors
- Emerging delivery services
- Current travel patterns
- Vehicle ownership
- Shared mobility adoption
- Personal attitudes and preferences



COVID-19 Fall 2020 longitudinal data

- Sampling Method: Recall of participants from previous surveys:
- Recruitment Method: Direct e-mail
- Valid Emails for Recontact: 9980
- Response Rate: 33.5%
- Incentives: \$10 gift card from Amazon, Starbucks, Target or Walmart to each respondent
- Survey administration: Dec. 2020 – Jan. 2021

- Future waves of data collection planned for Spring 2021 and beyond
- More information at postcovid19mobility.ucdavis.edu

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COVID-19

MOBILITY STUDY

COVID-19 Survey Content

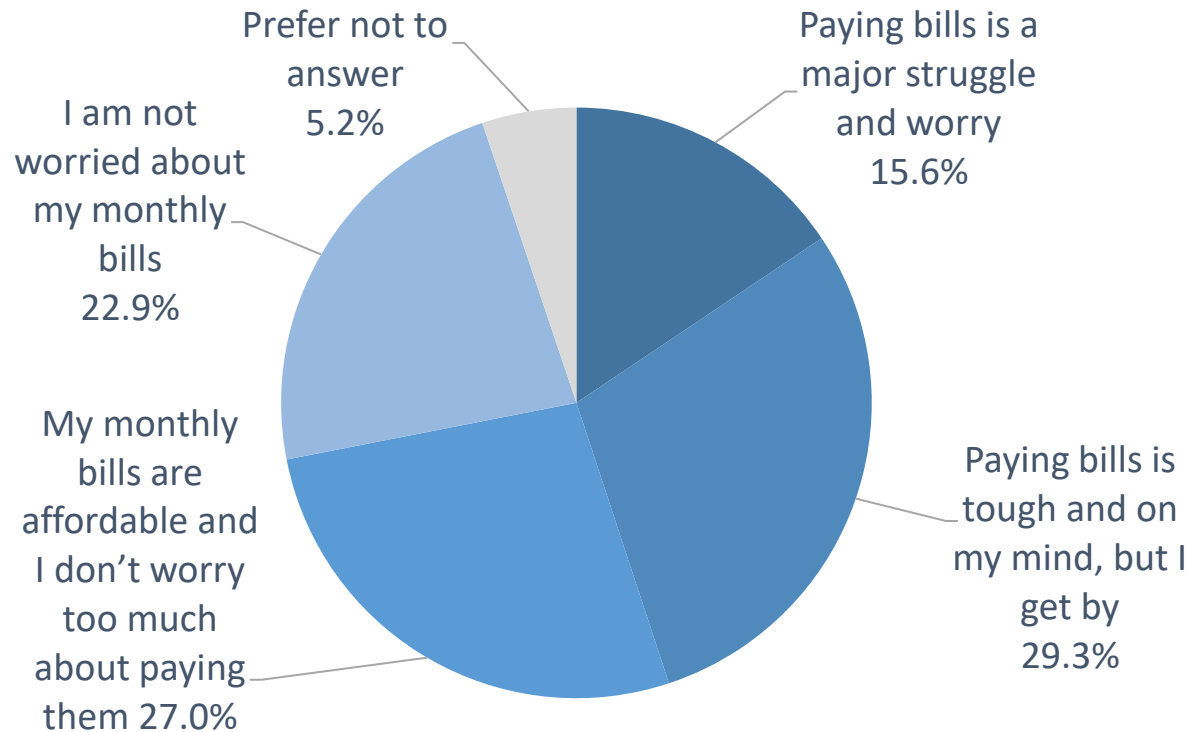
All survey versions include nine main sections:

1. Attitudes and preferences on transportation, residential location, environmental topics, etc.
2. Impacts of COVID-19 pandemic on lifestyle, including use of technology
3. Employment status, work and study activities
4. Household organization and child care
5. Online and in-person shopping patterns (for groceries, food delivery services, visits to restaurants, etc.)
6. Current travel choices (by trip purposes and modes)
7. Use of emerging transportation services
8. Household vehicle ownership and eventual plans for vehicle purchase
9. Household and individual sociodemographics



The online survey was available in both desktop and mobile version, even if the use of a computer or tablet was encouraged

Impacts of COVID-19 Pandemic on Jobs and Financial Situation



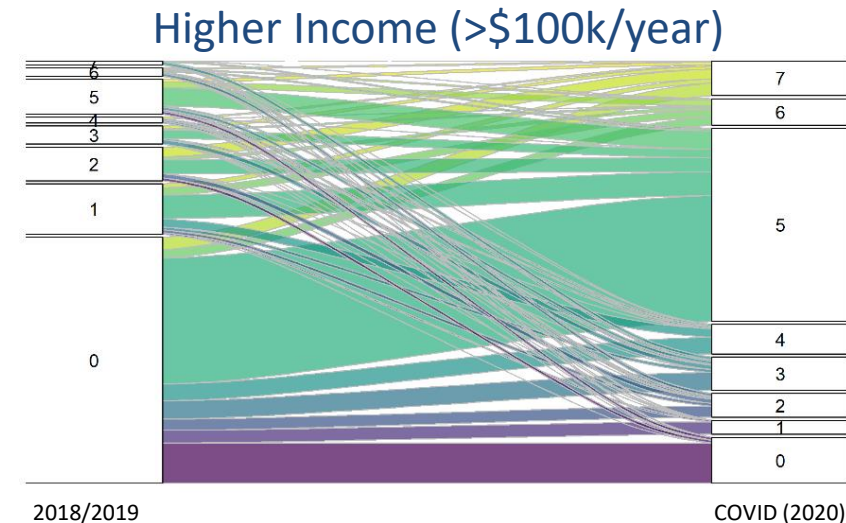
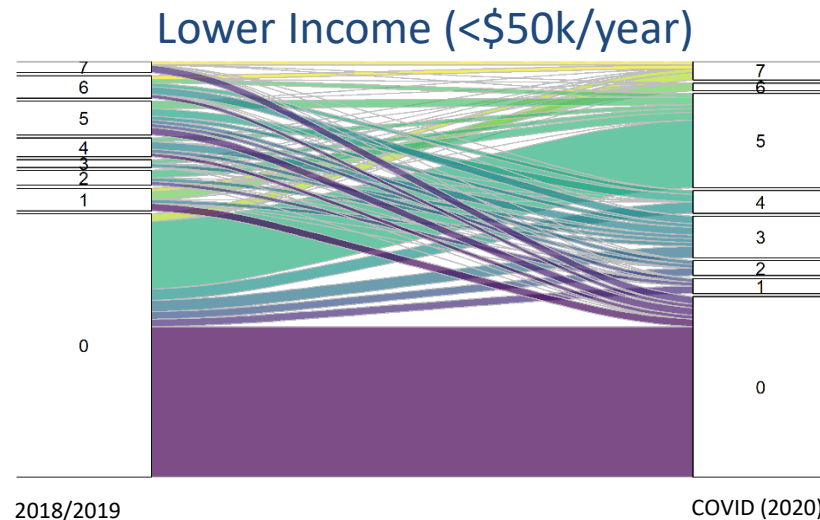
Dataset O (N = 8,834)

- Individuals in lower-income households are more likely to report they are financially struggling.
- Lower-income workers are more likely to have been furloughed without pay, to have lost their job or to have place of employment go out business.
- Lower-income workers are more likely to be considered essential workers and to have continued to physically commute during the pandemic.

	Household Income		
	Less than \$50,000	\$50,000 to \$99,999	\$100,000 or more
Total sample (n=8,834)	31.82%	31.12%	37.06%
I'm furloughed with pay from my previous job (n=136)	33.10%	41.90%	25.00%
I'm furloughed without pay from my previous job (n=425)	37.20%	30.60%	32.20%
I was let go from my job during the COVID-19 pandemic (n=340)	49.70%	28.20%	22.10%
My place of employment went out of business during the COVID-19 pandemic (n=115)	55.70%	28.70%	15.70%

Commuting and Telecommuting

- Remote work and telecommuting more broadly accepted by employers and employee during the pandemic
- Home improvements (set up of home offices, upgrade of internet connection) might encourage continuation of remote working in the future (to some extent)
- Changes in self-reported number of telecommuting days in a week:



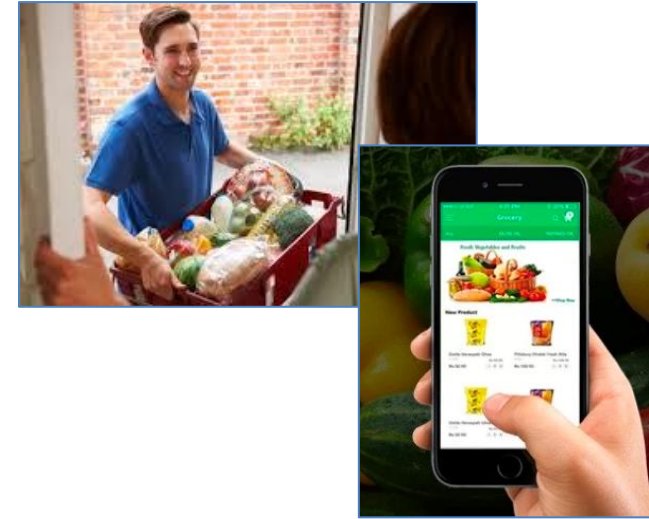
Dataset L ($N = 586$)

- Higher-income and white-collar office workers are much more likely to be able to work remotely.
- Almost 46% of low-income respondents in our sample reported they never telecommute, while only 11.5% of high-income respondents reported they never telecommute.

How did the pandemic affect shopping behaviors?

Online Shopping:

- “Democratization of e-shopping”, with increased adoption among broader population segments, including elderly and those concerned about health impacts of the pandemic, with low-income households still lagging behind
- Large impacts on goods movement for the delivery of purchased products
- The pandemic accelerated an existing trend in growth of e-shopping, with likely permanent changes on transportation



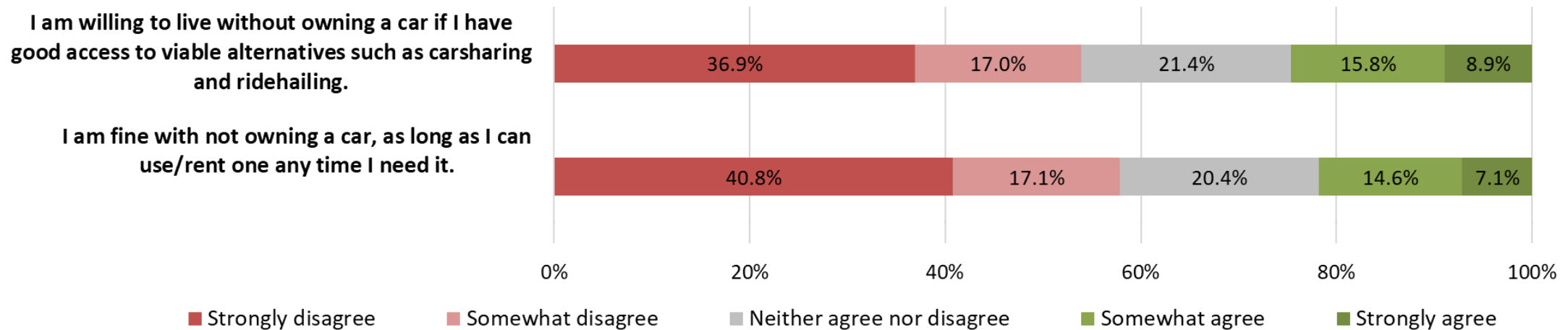
Food Delivery Apps:

- Higher adoption among younger, urban, dynamic segments of population
- Increase in food delivery highly correlated with reduction in restaurant visits
- Eventual (at least partial) reversal of this trend when patrons return to restaurants



Increase in Car-dependence of Society?

- A portion of survey respondents report an interest in increasing vehicle ownership:
 - The percentage of those planning to increase vehicle ownership is slightly higher among those living in lower-income households and in zero-vehicle households.
- The reported intentions match car sales data from dealers during 2020.



- The interest in adopting a *car-light* and multimodal lifestyle is found to be lower than in the 2018 and 2019 data collections.

The Pandemic is Increasing Equity Gaps, and Might Worsen Environmental Challenges

Equity Issues:

- Lower-income individuals are more likely to have lost their job during the pandemic and to be financially struggling.
- A larger proportion of lower-income workers are essential workers and have continued to physically commute to work.
- Technological solutions are more often adopted by younger and tech-savvy individuals with senior citizens, less-educated individuals and minorities more likely to be left behind.



Traffic Congestion and Environmental Impacts:

- Discretionary trips (often made by car) at least partially compensate for reduced volume of commuting trips.
- Our survey data show that a considerable portion (35-40%) of those that reduced use of public transit during the pandemic are now driving more.
- Increased car dependence, higher vehicle ownership and substitution of airplane trips with car travel might contribute to increasing traffic congestion.
- Trends might be exacerbated by reduced transit revenues and (eventual) reductions in service.



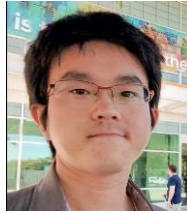
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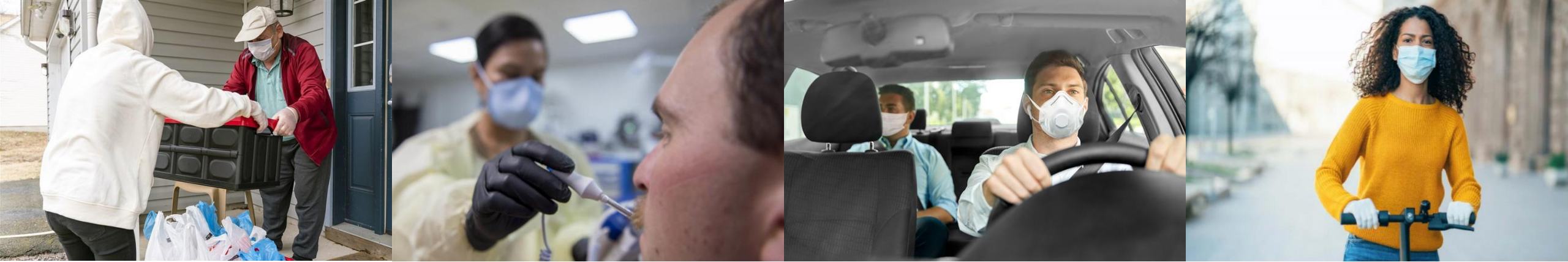


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With the contribution of many other colleagues at UC Davis and other partner institutions...



More info on the UC Davis COVID-19 Mobility Study available at:
postcovid19mobility.ucdavis.edu

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