



**THE IMPACTS OF COVID-19 ON TELE-ACTIVITIES, TRAVEL,  
AND PURCHASING BEHAVIORS WEBINAR SERIES**

**WEBINAR #2**  
Impacts of the COVID-19  
Pandemic on Person-Trips  
and Tele-Activities  
(Part 1)

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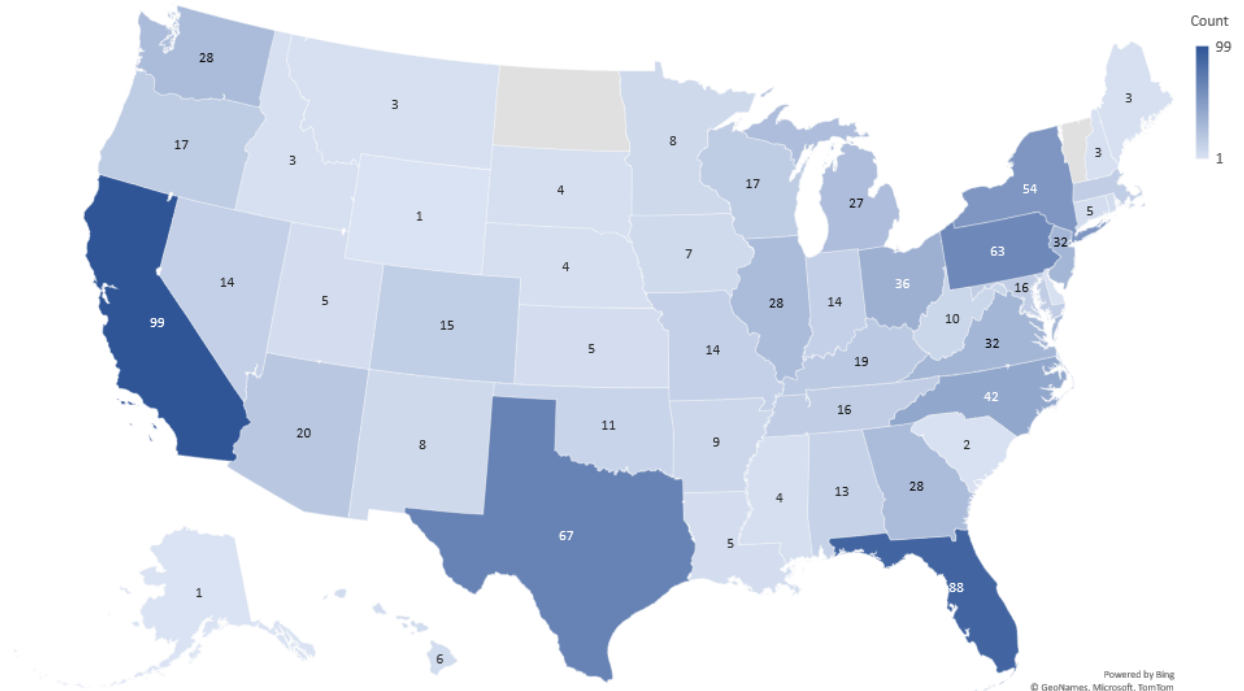
**Webinar #2: IMPACTS OF THE COVID-19 PANDEMIC ON PERSON-TRIPS AND  
TELE-ACTIVITIES (PART 1)**

**Questions and Answers**

- 1. How are you defining "before", "during", and "after" pandemic periods? Specifically, "after," as we haven't gotten over the pandemic yet?**  
R/ "Before" is the "without" the pandemic. "After" is when the pandemic does not affect transportation behaviors.
- 2. How did you define "after pandemic," as we are still in the pandemic?**  
R/ "After" is when the pandemic does not affect transportation behaviors.
- 3. For the "After Pandemic" behavior, do you think this is more desired or more expected?**  
R/ It's probably a mixture. But since we asked "how ... do you expect..." I would say it leans slightly toward expected.
- 4. How many responses did you collect so far and how many more are you thinking of collecting?**  
R/ 1163 in total and 938 after cleaning in these first two waves. We plan to do it in frequent waves of 300~500 each round. Total number of waves depends on the development of situation and resource availability.
- 5. Do you think this sample size is adequate for the prediction model development?**  
R/ In time-dependent phenomena like this one, the number of observations is only one of the factors. The other factor is the spread over time of the data collected. We plan to collect additional waves of data to gain insight into the permanence of the effects.

**6. What region(s) was this survey carried out?**

**R/** In the U.S. with the following geographic distribution.



**7. How the changes of behavior affect the research of time geography?**

**R/** The information will provide critical input about people’s scheduling and travel behavior when tele-activities are widely adopted. It will recalibrate the research of time geography. In particular, the flexibility in work scheduling and the location independence of that work will introduce new challenges in representing people’s space-time constraints and choice sets.

**8. I am curious to know if in your experience ~13 work trips per month (if there are 20 working days in a month this would imply 2 WFH days per week) is representative of travel patterns in the US?**

**R/** 13 work trips is for the entire population including students, the unemployed, and retired. For the employed subgroup, the average is slightly above 20.

**9. Trip frequency went up for some activities, e.g. entertainment. Is this increase real or within the margin of error?**

**R/** Increase of entertainment after pandemic is within the margin of error. The increase of online entertainment during pandemic and the increase of social activities are too significant to be explained by margin of error.

**10. A clarification question: are changes after pandemic compared to a pre-pandemic baseline, or to a during-pandemic baseline?**

**R/** To pre-pandemic baseline.

**11. Is there plan for more survey to bring expected behavior to actual behavior after pandemic?**

R/ Yes, we plan to continue collecting data.

**12. Is there a plan for a new survey to compare the "expected behavior" after pandemic to "actual behavior" after pandemic?**

R/ Yes, this is the plan.

**13. I find odd that retail presents a stronger physical need for travel than restaurants, considering most retail goods can be delivered. I would expect restaurants to present that behavior, instead. Is there any specific retail good that might explain this?**

R/ We will discuss more about this in the 3<sup>rd</sup> webinar. The retail does not include grocery stores and convenience stores. Our interpretation is that the retail today is not just for acquiring the goods itself, it is one type of entertainment and social activity. There are also aspects of some retail goods which present challenges for e-commerce, such as sizing, advice, or testing out. Although e-commerce attempts to make it easy to deal with these (e.g. free return shipping, reviews), individuals may still prefer to shop in-person for the convenience.

**14. Do you expect changes to the survey responses you received if you conduct a similar survey during this second wave of the pandemic? The reason I'm asking is because I'm getting signs from friends and employers that trips to visit friends or going back to work won't resume in the next 2-3 months, may take 4-5 months?**

R/ We are going to collect more data in several weeks, we should be able to answer this question at that point.

**15. Considering the second wave of the pandemic in the U.S., do you think the trips would reduce again? If not, how will the trips change? Thank you!?**

R/ My personal opinion is that the reduction may not be as significant as the first wave. We hope to better answer this question after we conduct more waves of data collection. Barring a complete return to a near-full shutdown, trip rates will likely decline again for work and discretionary trips but not as much during the 1<sup>st</sup> wave in early Spring. This could be attributed to continued unemployment, flexible telework arrangements with employers, self-selection away from discretionary out-of-home trips, and local/state government policies that reduce the activity space.

**16. I suggest to add sample size to these charts to know how strong these conclusions are.**

R/ We will discuss in the next webinar.

**17. In addition to "work" and "social/discretionary" activities, did you analyze shopping activities?**

R/ We have, see the Webinar #1: The Impacts of COVID-19 on Purchasing of Critical Supplies: Roots and Measures to Mitigate "Panic Buying." We will further discuss this in Webinar #3.

**18. Was there any idea that additional trips during work day will increase as a result of WFH activities?**

R/ This does occur often due to increased schedule flexibility, I believe most often due to shopping, service, and maintenance activities. You may want to consider this review article on the rebound effects from ICT: Gossart, Cédric. "Rebound effects and ICT: a review of the literature." *ICT innovations for sustainability*. Springer, Cham, 2015. 435-448.

**19. What is the most important discovery deriving from this void related study that we did not before?**

R/ Tele-activities is not a simple substitution of physical activities. It differs by nature of activities and many sociodemographic features. We should not assume transportation demand will be reduced because of the convenience of ICT.

**20. Did the survey take into consideration that for most of March/April/May in the US transit systems nationwide were on restricted schedules or even shut down? USDOT has the specifics of which bus and rail transit systems were reduced schedule or shut down?**

R/ We plan to use the zip code information we collected to link to COVID-19 related variables, including disruption of transit service.

**21. During the pandemic most of the results are expected, but how are these results useful to transport planners because these pandemics are rare to occur?**

R/ It helps us to better understand the nature of different types of activities, and the stated "after" numbers will help policy design and planning for long term. It also provides a type of field experiment where individuals were forced into a treatment. Here the treatment was forced telework for example, so this provides information on the causal impacts of telework which can improve forecasting the impacts of communication technology on travel demand. So there are some direct potential benefits for MPOs who must conduct long-range planning.

**22. How did you define a pandemic wave... from your definition or epidemiology definition? And if epidemiologist definition - which epidemiologist(s)?**

R/ We think this is beyond the comprehension of a regular respondent. In our survey "before" is the "without" the pandemic. "After" is when the pandemic does not affect transportation behaviors.

**23. Powerful and revealing research. Thanks for sharing. Can you please comment on possibilities and limits for modelling person-trips and tele-activities results within the context of developing countries constrained environments?**

R/ It is feasible to conduct similar research in developing countries as long as good quality data can be collected. The key challenge is the data collection with representative sample.

**24. If WFH is likely to increase post-COVID, would you expect people to be changing their home locations; greater suburbanization?**

R/ In long term, it is possible. This is difficult to assess from the current crisis since residential choice is a medium-term decision often and the crisis has only been short-term so far.

**25. Related to the previous question. Could there be two types of 'after pandemic': shortly after with a lot of pent-up demand (will miss social activities that were impossible for long) and further after with returning more to the 'before pandemic' figures?**

R/ It is possible. People's stated behavior is often for short term. We need more data and the observation of trend to have more robust prediction of long term behavior.

**26. In some cases, the decision is exogenous to the individual. For instance, whether the physical presence in the workplace (or school) is mandatory. How did you consider this constraint?**

R/ We agree. We hope by linking the geographic information, we can put this in consideration. We also asked individual's opinion on the likelihood that their employers would allow for telework after the pandemic. It is not a perfect solution but without an employer survey, it is the best we can use in the current context.