

Study finds shoppers' masking compliance influenced their in-store behaviors

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As the coronavirus began to spread globally, face masks were recommended in public settings to protect against transmission, and compliance varied significantly. In a new study of people shopping in a

large Chinese store in early 2020, researchers examined the motives behind customers' compliance with mask recommendations and how their shopping behaviors changed with the onset of the pandemic. The study found that customers changed their in-store behaviors significantly based on their compliance with masking recommendations.

The study, by researchers at Carnegie Mellon University (CMU), Harvard University, and Renmin University, is published in *Marketing Science*.

"At the start of the COVID-19 [pandemic](#), a variety of psychological factors drove individuals' reactions to masking recommendations, making the pandemic a large-scale [social experiment](#)," says Kannan Srinivasan, Professor of Management, Marketing, and Information Systems at Carnegie Mellon University's Tepper School of Business, who led the study.

Srinivasan and colleagues examined customers at a large store of a retail chain in China, using recordings from high-resolution cameras at entries, checkout counters, and other locations inside the store. Researchers collected videos from January 1-23, 2020 (which they classified as the pre-pandemic period) and from February 1 to May 31, 2020. The World Health Organization issued a statement about the outbreak of the novel coronavirus, and China presented evidence of human-to-human transmission on January 23. The store was closed from January 24-31, 2020.

Based on studies on [social influence](#) and mask wearing, researchers identified three types of customers: Fully compliant customers (54%) wore masks and seemed motivated primarily by concerns about their own health risk. Partially compliant customers (29%) also wore masks, but wore them improperly, and were motivated by the desire to comply with [social norms](#). Non-compliant customers (17%) did not wear masks

and were unmotivated by health concerns or social norms.

To infer motives behind wearing masks, the researchers used advanced facial recognition mechanisms to detect whether a [customer](#) wore a mask and measured the mask fit (operationalized as the extent of mask coverage) for those who did. Fully compliant customers wore their masks over a larger area above the nose than partially compliant customers.

The researchers used the store videos to examine changes in individuals' [shopping](#) behaviors at the onset of the pandemic, contrasting them with the individuals' shopping behaviors before the pandemic. In particular, they looked at customers' attempts to practice social distancing and the amount of time spent in the store, as well as at what kinds of masks customers wore.

Fully compliant mask wearers remained at a greater distance from cashiers when shopping during the pandemic than they did before the pandemic. They were five times more likely than other mask wearers to wear highly protective N95 masks while shopping and spent 25% less time shopping than they did before the pandemic.

In contrast, partially compliant mask wearers did not distance themselves from cashiers, were less likely to wear high-quality masks, and shopped for the same duration of time as they did before the pandemic. Similarly, non-mask wearers did not distance themselves from cashiers and did not change the duration of their shopping time.

"Our findings have implications for businesses, health practitioners, and policymakers," suggests Shunyuan Zhang, Assistant Professor of Marketing at Harvard Business School, who coauthored the study.

In particular:

- Retailers can target different customers in different ways: For example, for fully compliant customers, they can explain their efforts to reduce shopping time and mitigate store congestion, and for the partially compliant, they can emphasize the importance of social responsibility.
- Public-health practitioners can message more effectively when their efforts are customized to appeal to individual motives. For example, practitioners may benefit from applying the same principles to efforts involving vaccine compliance.
- In regions with large numbers of partially compliant or non-compliant individuals, policymakers can redouble educational efforts to encourage more masking.

More information: Shunyuan Zhang et al, *Frontiers: Unmasking Social Compliance Behavior During the Pandemic*, *Marketing Science* (2023). [DOI: 10.1287/mksc.2022.1419](https://doi.org/10.1287/mksc.2022.1419)

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