

What Will People Pay for SMS Air Quality Alerts and Will They Avoid Air Pollution in Response?



Male, younger, and higher-income respondents as well as those who perceived high pollution in recent days showed greater willingness to pay for SMS air quality alerts. Willingness to pay was uncorrelated with actual recent high pollution.



Recipients of SMS alerts indicated having received air pollution information via SMS, along with reporting a high-pollution day in the past week and having stayed indoors on the most recent day they perceived pollution to be high. However, alert recipients were not more accurate in identifying which specific days had high pollution than other respondents.



Households that received a free N95 mask were more likely to report utilizing a mask with a filter during the past two weeks—but not more likely to report using a mask with a filter on the specific days with high particulate matter.

CONTEXT

Air pollution levels in Mexico City often exceed WHO guidelines and impact citizens' daily lives through negative impacts on health, education, labor supply, and productivity. Although the government can implement policies and programs to mitigate air pollution in the long term, in the short term the most effective method of reducing citizens' exposure to air pollution may be to provide air quality alerts that allow citizens to engage in avoidance behavior on high-pollution days.

PROJECT

We conducted a randomized controlled trial with 1,869 households in Mexico City. Households were randomly assigned to four cross-cutting treatment groups and their respective control groups: i) a one-year subscription to pollutant-specific SMS air quality alerts, ii) a free N95 mask, iii) a one-year subscription to monthly pollution trend and avoidance behavior SMS reminders, and iv) 50 percent higher compensation for baseline survey participation. We conducted the baseline survey in June-August 2019 and conducted two rounds of follow-up surveys in November and December 2019.

Key Concept



WILLINGNESS TO PAY

The maximum amount that an individual would be willing to pay for a good or service.

RESULTS

Male, younger, and higher-income respondents have greater willingness to pay. This implies that willingness to pay for air quality alerts may increase over time with economic growth and as younger generations comprise a larger share of the population of Mexico City. Also, reporting that there was high pollution in recent days is positively correlated with willingness to pay for air pollution alerts. Actually experiencing a high pollution (ozone) day in the days prior to the survey, however, is not correlated with willingness to pay.

We observe a large, significant effect of the alerts treatment on reporting having learned about high pollution from SMS alerts and a substitution away from receiving pollution information from television. Further, we find a 10-percentage point increase in reporting that there was a high pollution day in the past week, but the alerts treatment does not increase respondents' ability to correctly identify high pollution days.

The alerts service has a significant impact on reporting a change in behavior, particularly staying indoors with the windows closed. Similarly, the mask treatment has a positive effect on reporting use of a mask with a filter in the prior two weeks. Nonetheless, the mask treatment has no effect on the percentage of days with high ambient particulate matter on which respondents used a filter mask.

Although the SMS alerts increased avoidance behavior, they do not appear to have substantially lowered exposure to ambient air pollution.

POLICY IMPLICATIONS

Together the results illustrate the strength of perceptions about air quality and the limitations of information in targeting avoidance behaviors to high pollution days. While individuals may change their behavior, they do so largely on the basis of perceptions rather than objective information. In cities with a long history of high air pollution, policies that rely primarily on delivering air quality information may not be effective. While information can be provided at low cost, policies involving more active intervention may be necessary.

Key Concept



RANDOMIZED CONTROLLED TRIAL

Evaluating interventions by randomly assigning participants to receive the intervention (treatment group) or not (control group). Differences in outcomes between groups can be attributed to the intervention.

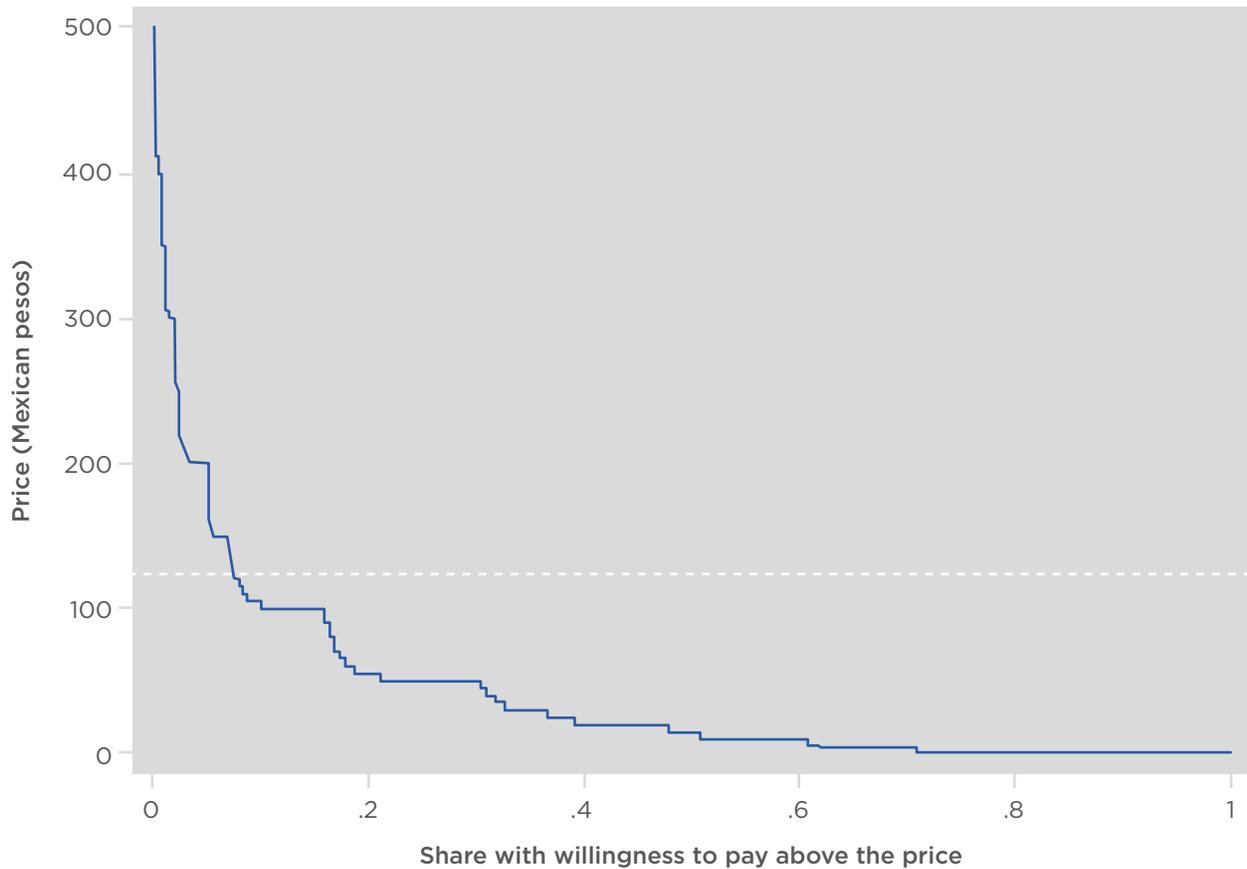
Key Concept



MARGINAL COST PER USER

The additional cost incurred to provide the service to an additional user.

Figure 1. Inverse Demand for SMS Air Quality Alerts Service



Note: For each price on the vertical axis, the figure shows the share of respondents with willingness to pay for the alerts service above that price. The horizontal dashed line represents the marginal cost for the median user of the service in our experiment.



FULL STUDY

[Hanna, Rema, Bridget Hoffmann, Paulina Oliva, and Jake Schneider. 2021. "The Power of Perception: Limitations of Information in Reducing Air Pollution Exposure."](#)

DEPARTMENT OF RESEARCH AND CHIEF ECONOMIST

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