

# Subsidies key in improving sanitation, new study finds

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Participants in a community lottery in Bangladesh find out who has been randomly selected to be eligible for a latrine cost subsidy. Credit: Photo by Ishita Ahmed

With poor sanitation estimated to cause 280,000 deaths per year

worldwide, improving sanitation is a key policy goal in many developing countries. Yet governments and major development institutions disagree over how to address the problem. A new study released in *Science* today found that in Bangladesh, a community-motivation model that has been used in over 60 countries to increase use of hygienic latrines had no effect, yet latrine coverage expands substantially when that model is combined with subsidies for hygienic latrines targeted to the poor.

The study, led by Raymond Guiteras of University of Maryland and James Levinsohn and Mushfiq Mobarak of Yale University, and implemented by Innovations for Poverty Action, tested three different approaches that are commonly used in the development sector for increasing the use of hygienic latrines. Reducing open defecation, which is still practiced by 15 percent of the world's population, is a key policy goal for this sector. The study took place in northwest Bangladesh, in an area where 50 percent of the population had access to a hygienic latrine before the study began.

"While there is general agreement among development professionals and institutions about the importance of improving access to hygienic latrines, there is still vigorous debate about the most cost-effective ways to achieve this," said Mobarak. "Is the problem a lack of cash, or is the problem an absence of strong community norms against open defecation? Even when households are willing to pay for hygienic latrines, does lack of access to toilet components or lack of information about quality or installation methods impede adoption?"

Researchers randomly assigned 380 neighborhood communities, or 18,254 households total, to one of four groups. Villages either received a community motivation program, subsidy vouchers with the community motivation program, information and technical support, or none of the above. By comparing outcomes in latrine coverage, investment in hygienic latrines, and open defecation between the groups over time,

researchers were able to compare the effect of the different approaches.

The subsidy vouchers, which were only provided to a random subset of households in the second group through a public lottery, could be redeemed for a 75 percent discount on available models of latrines, priced (after subsidy) from \$5 to \$12. The households were responsible for their own transportation and installation costs, and the richest 25 percent of households were not eligible for vouchers.

The community motivation program, called the Latrine Promotion Program (LPP), was modeled after "Community-Led Total Sanitation", which focuses on behavioral change and community mobilization in eliminating open defecation. Such programs have been implemented in over 60 countries worldwide.

Researchers found that the community motivation model alone did not significantly increase adoption of hygienic latrines or reduce open defecation relative to the comparison group, nor did providing information and technical support to community members.

However, the subsidy had substantial effects when coupled with the community motivation program, increasing hygienic latrine coverage by 22 percentage points among subsidized households and 8.5 percentage points among their unsubsidized neighbors.

This suggests that latrine investment decisions are inter-linked across neighbors, and that there are positive effects on others of subsidizing even a few households. People were more likely to invest if more of their neighbors received vouchers, pointing to a virtuous cycle where adoption of improved latrines spurs further adoption.

Adding subsidies to the community motivation model also reduced open defecation rates by 22 percent among adults in villages that received

subsidies (including [households](#) that did not receive subsidies), relative to the comparison group.

These results counter the concern among many development practitioners that subsidies undermine intrinsic motivation. Rather, this research shows price is a primary barrier, which is consistent with a growing body of research on adoption of health products.

"These results have particularly important implications in densely populated [developing countries](#), such as India and Bangladesh, where sanitation coverage is low and the public health consequences are high," said Annie Duflo, Executive Director of Innovations for Poverty Action. "The study also teaches us about how to conduct 'smart subsidy' policy, allocating subsidies in a way that maximizes the chances of behavioral changes among neighbors. Given how widespread the community motivation model is, the results of this study can help the sector allocate funds more efficiently," Duflo said.

**More information:** "Encouraging sanitation investment in the developing world: A cluster-randomized trial," by R. Guiteras at University of Maryland in College Park, MD; J. Levinsohn; M. Mobarak at Yale University in New Haven, CT. [www.sciencemag.org/lookup/doi/10.1126/science.aaa0491](http://www.sciencemag.org/lookup/doi/10.1126/science.aaa0491)

Provided by Innovations for Poverty Action

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