The Impact of Incentives and Marketing on Commercial Toilet Use in Nairobi, Kenya

Researchers:

Johann Caro Burnett

Judy Chevalier

Mushfiq Mobarak

Sector(s): Health

Fieldwork: IPA Kenya

Location: Nairobi, Kenya

Sample: 3,572 individuals

Initiative(s): Urban Services Initiative (USI)

Target group: Urban population

Outcome of interest: Health outcomes Take-up of program/social service/healthy behavior

Intervention type: Nudges and reminders Preventive health Water, sanitation, and hygiene Monetary incentives

AEA RCT registration number: AEARCTR-0000736

Partner organization(s): Sanergy

Despite expanding access to sanitary options such as community toilets, many individuals, especially in urban informal settlements, continue to practice open defecation, potentially spreading illnesses such as diarrhea, polio, cholera, and hookworm. Applying lessons from psychology and neuroscience, researchers evaluated whether a combination of economic incentives, repetition-inducing constraints, and a marketing campaign could increase the usage of hygienic, commercial latrines among residents of an informal settlement in Nairobi. Participants used Fresh Life Toilets (FLT) more often during the discount period relative to the comparison group. There was no long-term impact on FLT usage, except among individuals who previously always used a different commercial toilet.

Policy issue

Sanitation coverage for urban dwellers in low-income countries remains low. In Sub-Saharan Africa, for example, only 42 percent of the urban population has access to sanitation. When individuals do have access to sanitation options, such as community toilets, usage of these facilities remains low, and many households continue to practice open defecation. Particularly in densely populated urban areas, open defecation has consequences for public health, spreading illnesses such as diarrhea, polio, cholera, and hookworm. Open defecation may persist either because it is habitual or the benefits of changing one's habits accrue primarily to society, such as disease prevention.

Private sector firms have often used psychology and neuroscience to foster new individual habits. For example, dental advertising campaigns that associated triggers (a feeling of uncleanness when people feel bacteria plaque on their teeth) and rewards (a tingling sensation after brushing) with brushing regularly using mint-scented toothpaste encouraged millions to adopt it as a daily

routine. To date, however, there is little evidence on whether similar interventions would work when it comes to hygiene choices related to social, rather than private, benefits.

Context of the evaluation

The study takes place in Mukuru, an informal settlement in Nairobi, Kenya. In 2015, about 80 percent of the 500,000 people living in Mukuru did not have adequate access to sanitation.

Sanergy, a social enterprise working to address this unmet sanitation need, builds and franchises community toilets (called Fresh Life Toilets, or FLTs) to local entrepreneurs. These entrepreneurs charge a 5 KES (US$0.05) pay-per-use fee for the toilets they operate and generate additional income by converting human waste to fertilizer at a central processing facility. Each FLT serves up to 100 users per day and provides personal hygiene products such as soap and water. While Sanergy has grown its network of toilets since its launch in 2010, low demand continues to be a challenge.

Among individuals in the study, 71 percent were women and the median age was 27. The average straight-line distance from individuals' houses to the nearest FLT was 31 meters, and all participants lived within a two-minute walk from an FLT.

Alley in Mukuru slum in Kenya

Loic Watine

Details of the intervention

Applying lessons from psychology and neuroscience, researchers partnered with Sanergy to conduct an evaluation to test whether a combination of economic incentives, repetition-inducing constraints, and a marketing campaign increased the usage of

hygienic latrines among Mukuru residents. While all 3,572 individuals participating in the evaluation received vouchers, the specific features of the vouchers varied across recipients. The researchers randomly assigned individuals to one of four groups:

1. *High discount and flexible* (714 participants): Individuals received vouchers entitling the holder to one free usage per day of any nearby FLT, at any time. For one-third of participants, vouchers lasted one month, and for two-thirds of participants vouchers lasted two months. Half of the participants received the marketing campaign.
2. *High discount and constrained* (1,085 participants): Individuals received vouchers entitling the holder to one free usage per day of any nearby FLT, within an individually pre-selected two-hour window. For one-third of participants, vouchers lasted one month, and for two-thirds of participants vouchers lasted two months. Half of the participants received the marketing campaign.
3. *Low discount and flexible* (1,077 participants): Individuals received vouchers entitling the holder to a 2 KES (US$0.02) discount on one usage per day, at any time. For one-third of participants, vouchers lasted one month, and for two-thirds of participants vouchers lasted two months. Half of the participants received the marketing campaign.
4. *Low discount and constrained* (comparison group, 696 participants): Individuals received vouchers entitling the holder to a 2 KES (US$0.02) discount on one usage per day within an individually pre-selected two-hour window. For one-third of participants, vouchers lasted one month, and for two-thirds of participants vouchers lasted two months. Half of the participants received the marketing campaign.

The marketing campaign aimed to associate the FLT usage with a feeling of cleanliness by emphasizing certain characteristics of the FLTs, such as the provision of soap and water, a fresh smell, and clean floors.

The marketing information was conveyed via a professionally designed card, a water bottle gift upon using an FLT within the first week of the intervention, and SMS reminders to use an FLT. All participants received a 1 KES (US$0.01) discount for any FLT usages after the first use, outside the pre-selected time window, or after the discount period ended.

From April 2015 to August 2016, researchers collected data on how often participants used an FLT both during the subsidy period and seven months after the subsidies started.

Results and policy lessons

Participants used FLTs more often during the discount period relative to the comparison group. There was no long-term impact on FLT usage, except among individuals who previously always used a different commercial toilet.

During the discount period, participants in the high discount and flexible, high discount and constrained, and low discount and flexible groups were 7.5, 4.3, and 4 percentage points more likely to use an FLT at least once per day, relative to a baseline of 12.3 percentage points, corresponding to 61, 35, and 33 percent increases, respectively.

In the first month after the discounts ended, participants in the high discount and flexible, high discount and constrained, and low discount and flexible groups were 2.8, 1.9, and 2.4 percentage points more likely to use an FLT at least once per day, relative to a baseline of 4 percentage points, corresponding to 70, 48, and 60 percent increases, respectively.

The marketing campaign increased FLT usage during the discount period by 1.7 percentage points, a 14 percent increase relative to the comparison group, but had no impact on usage after the discounts ended. The marketing campaign encouraged individuals to try the FLTs, but did not impact sustained use; individuals exposed to the campaign were more likely to ever use an FLT and used FLTs sooner, but were also more likely to only use an FLT once.

Among individuals who self-reported as always using a commercial toilet that is not FLT, participants in the high discount and flexible and high discount and constrained groups were 6.8 and 4.3 percentage points more likely to use an FLT at least once per day during the discount period, relative to a baseline of 6.1 percentage points, corresponding to 111 and 70 percent increases,

respectively. Three months after the discounts ended, participants in the high discount and flexible, high discount and constrained, and low discount and flexible groups were 16.2, 15.3, and 15.2 percentage points, respectively, more likely to use an FLT relative to a baseline of 0 percentage points.

No interventions changed individuals' toileting habits except for those who switched to FLTs from a different commercial toilet brand. Researchers suggest this may be due to barriers to FLT usage and the absence of private benefits to behavior change. Users must travel from their homes and pay a fee to use an FLT and may face long lines during busy hours. Benefits of using an FLT are felt by other individuals, for whom improved sanitation eventually averts illness, but are not immediately felt by the individual FLT user.

Caro-Burnett, Johann, Chevalier, Judith A., and Mobarak, Ahmed Mushfiq, "Is Habit a Powerful Policy Instrument to Induce Prosocial Behavioral Change?" (2021). Cowles Foundation Discussion Papers. 2600.