



# Smart Spout



David Taylor and Natasha Wright (SmartSpout@mit.edu)

## Need to Know?

- How many times a day do clients use your filter?
- How consistently do clients use the filter?
- Do text message reminders increase product usage?
- How long do people use your filter when it is given away?
- What size does your storage container actually need to be?

## Measure Usage.

If you knew when and for how long your filter was used, each time it was used, you could answer every question above.

## Surveys Lie.

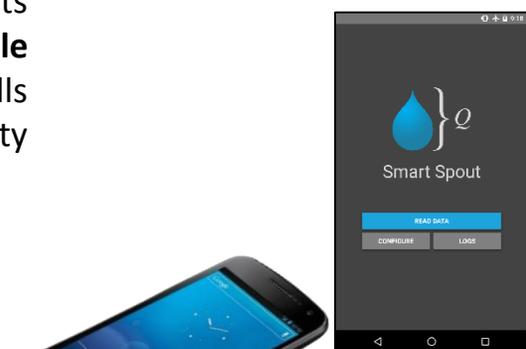
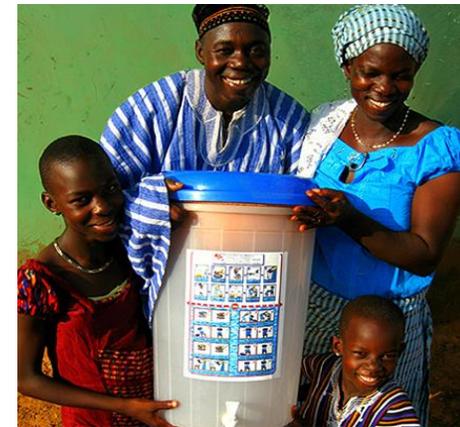
Social desirability reflects the tendency on behalf of survey subjects to **deny socially undesirable traits** and to **claim socially desirable ones**. For example, social desirability is at play when a patient tells their dentist that they floss twice a day every day, when in reality they do so once per week, or never.

Survey inflate usage by 25-300%.

## But the Smart Spout Doesn't.

The Smart Spout provides **objective** data and is **simple**, **durable**, and **affordable**.

- **Objective:** Bias-free measuring of usage.
- **Simple:** Swap our spout for yours. Read the data with an Android.
- **Durable:** 1 year life, waterproof, can't be opened.
- **Affordable:** Starting at \$25 (16x cheaper than competitors).



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## How it Works

The Smart Spout records the date, time, and duration of each household water treatment and safe storage (HWTS) use.

To read the data, place your Android phone on the spout and the data will wirelessly upload. Transfer the data to a computer and we'll help process, analyze, and interpret it.

## Case Study

A UVA study on health and HWTS installed 270 Smart Spouts in 2017 in Limpopo, South Africa.

Since project surveys suggested high-adherence (91% of households reported using HWTS 7 of 7 previous days), any absent health benefits would have suggested HWTS's inefficacy. Instead, the Smart Spout proved 7-day usage streaks were limited to 55% of households (Fig. 1).

The Smart Spout found that usage depended on HWTS type; when group B switched to A's HWTS type, daily adherence dropped (mid-Aug., Fig. 2).

The Smart Spout proved low adherence, suggested possible reasons for it, and was critical to interpreting health impact data.

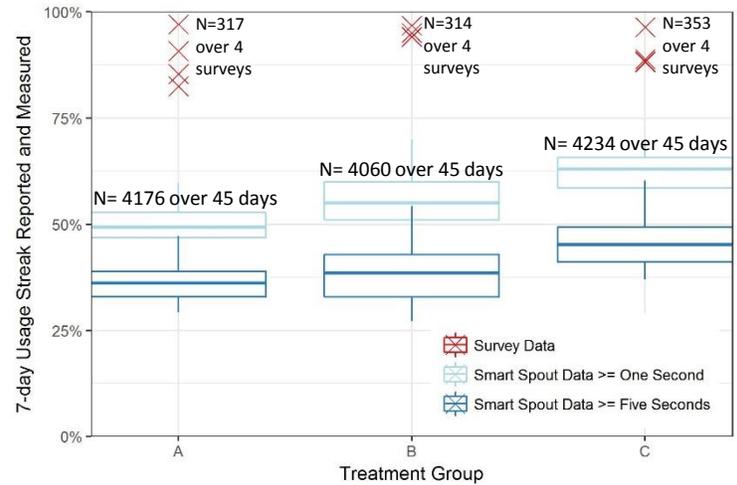


Fig. 1: Consistency of 7-day adherence by group

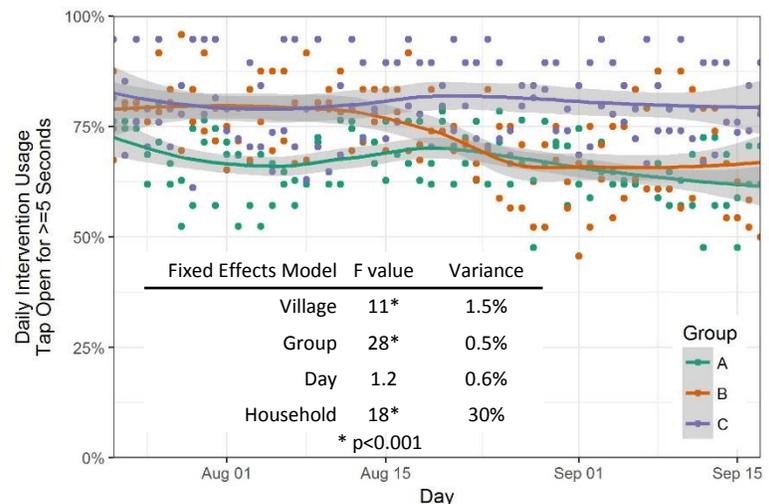


Fig. 2: Daily adherence by treatment group

Data from: Taylor D., Wright N., Hill C., McCain K., Rogawski E., Frey D. A continuous objective metric for the usage of household treatment and safe storage. Poster presented at: UNC Water and Health; 2017 Oct. 16-20; Chapel Hill, NC.

## Don't Miss Critical Trends; Partner with Us

- Interested in understanding HWTS usage? Contact us.
- We are looking for partners to run field studies with us **this year**.
- Ask us about data sharing options and flexible pricing.