

Smartphones offer promise in better gauging rural life, researchers find

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The use of smartphones enhances self-reporting of weather incidents, school attendance, illness, and other aspects of daily life in rural areas, a team of researchers has found. Its pilot study indicates that such technologies have the potential to transform data collection in these regions, providing near-real-time windows into the development of markets, the spread of diseases, and the diffusion of ideas and innovations.

"Our research shows that we can deploy this technology to change the way we engage with rural communities, which can yield data that will improve management of government programs and enhance information available to [policy makers](#)," explains Andrew Reid Bell, an assistant professor in New York University's Department of Environmental Studies and one of the paper's co-authors.

The study examined a rural area in Bangladesh, where residents of the country's Rangpur district reported on an array of aspects of their daily lives—e.g., water and food consumption, earnings, extreme weather incidents, such as droughts or flooding, and illness.

In an effort to find methods that bolster self-reporting of these occurrences—data that are invaluable to policy makers and planners—the team equipped participants with Android smartphones.

Participants in the sample, nearly 500 residents across 40 villages, responded to short survey tasks - asking about recent income, school

absence, or spending on clothes. The experiment included different versions of each task, so that some participants received it only once per month or season, while others were asked much more regularly—not unlike the way teens text their friends. While participants all used smartphones for their responses, the "low frequency" tasks were much more similar to traditional surveys, which are often separated by long periods and task people with recalling long histories of experience.

Their results showed significant differences in the nature of the responses. Those who were "continually engaged" in a task were more likely to be inclusive in their reporting, offer more detailed accounts of intra-seasonal variability, and convey earlier signals of events, notably of illness.

"These results make clear that traditional approaches to surveying may miss patterns of variation across the year, or smaller events that lose significance to the respondent over time," observes co-author Mary Killilea, an associate clinical professor in NYU's departments of Environmental Studies and Biology.

The other authors of the study, which appears in the journal *PLOS ONE*, were Patrick Ward and Ehsanul Haque Tamal of the Food Policy Research Institute.

Provided by New York University

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