

Switching to latrines in rural South Asia: Study description

Diane Coffey, r.i.c.e.

August 8, 2016

The data described here were collected by Diane Coffey, Aashish Gupta, Payal Hathi, Nikhil Srivastav, and Sangita Vyas, with the help of translators Ganpat Gohil and Piyush Tank in Gujarat. Between November, 2013 and May, 2014, we conducted 65 semi-structured interviews with households in which at least one member adopted latrine use in the past 10 years, and 35 interviews with households in which every member defecates in the open. The interviews covered a variety of topics, including respondents' views on latrine ownership and use; open defecation; who in the household uses the latrine and why; the decision to make a latrine; the design of the latrine and the cost; and whether government or other organizations played a role in motivating the household or in constructing the latrine. The sampling strategy used to select households involved choosing regions, districts, villages, and households. Within households we interviewed adults who reported having decision-making authority about large household purchases. Other family members were encouraged to join the conversation and often did so. Table 1 presents region-specific information about the interviews and the respondents.

Purposive sampling. Interviews were conducted in four regions in northern India and southern Nepal; three regions are Indian states, the fourth is the terai region of Nepal. (The largest administrative division of Nepal breaks the country into “mountains,” “hills,” and “terai.”) Although there are important differences in household latrine ownership in these regions – in Haryana and the Nepali terai, 56% and 55% of rural households owned toilets respectively, compared to 22% in Uttar Pradesh and 33% of households in Gujarat (Census, 2011 & DHS, 2011) – we nevertheless found many common attitudes, beliefs, norms and practices around latrines and latrine use in these regions. We decided to visit the terai region of southern Nepal because it is, on average, economically poorer than many parts of north India, but Demographic and Health Survey data suggest that it has made better progress building latrines. During the course of the project, we observed that this improvement is driven mainly by investment in latrines with septic tanks rather than affordable latrines; this observation is supported by DHS data. According to the 2011 DHS, only about 7% of households in the Nepali terai use inexpensive latrines. A question for further research, which our paper does not answer, is why households in the Nepali terai have invested in

septic tanks at a similar rate as households in Haryana, even though they are significantly poorer.

In each region or state, we visited the district in which the rate of improvement in latrine coverage between 2001 and 2011 most closely matched the improvement in latrine coverage in the region or state as a whole during this period. In Indian districts, we selected *gram panchayats* (GPs) from a list of GP names that was used as the sampling frame for the District Level Household Survey, 2004 (DLHS-2). The GP is the lowest level of rural government administration in India. We visited those GPs in which the estimated village level 2004 latrine coverage most closely matched the 2004 district level latrine coverage from the DLHS-2. Where a selected GP contained more than one village, or hamlet, we selected households from the village whose name matched the name of the village of the DLHS-2 sampling list; this was often the largest village. In Nepal, where no district level sample survey is available, we selected villages randomly from a list of census villages.

In each village, we completed between 4 and 6 household interviews. We selected households using an in-field randomization procedure. We began by walking around the village and drawing a map that divided the village into between four and six sections. We then randomly selected which section to visit first. After each interview, we randomly selected a new section to visit, subject to the constraint that we did not visit a section twice until we had done at least one interview in each section. In the approximate center of each section, we spun a spinner which indicated the direction we would proceed. We then consulted a random number sheet that indicated whether we should start from the center of the section or the edge, and how many households to pass before stopping at a household and requesting an interview. If no one was home in the selected household, if household members refused to participate, or if we had already interviewed enough households of that household's type (open defecators vs. households in which at least one member switched to latrine use in the past 10 years) in that village, we knocked on each door to the selected household's right until we found an appropriate household to interview. Table 2 presents summary statistics about the number of households approached as we followed this sampling strategy.

Semi-structured interviewing. Within households, we interviewed adult decision makers. In joint households, this was often an older man, but we also interviewed women and younger men if they reported being involved in either deciding to invest in a latrine, or, if they did not own a latrine, in other large purchases. We conducted an interview only if such a person were at home and available. Table 2 also presents information on the number of households for which a decision maker was not available, as well as the number of households which we screened but did not interview because they had been using a latrine for more than 10 years, or were locked, abandoned, or occupied by renters. (We encountered renters only in only one village in Gujarat. In this villages, people from poorer parts of India rented small rooms and worked in nearby factories. Landlords had built blocks of latrines for people living in these rooms. We did not complete interviews among these renters because we were interested in people who had made active decisions to use latrines.)

Interviews were conducted by in teams of two or three interviewers; at least one of the authors led each interview. To facilitate semi-structured interviewing, we used an interview

guide that listed the themes to be discussed. Interviewer teams almost always included at least one male and one female interviewer, and sometimes included a research assistant who was more familiar with the relevant regional language (Gujarati, Haryanvi, Bhojपुरi). The interview guide was piloted in Sitapur district of Uttar Pradesh and is available online at www.riceinstitute.org. The interview had qualitative and quantitative components; the quantitative components included a household roster which asked about age, sex, education, occupation and latrine use for each person individually, a two page questionnaire based on an observation of the latrine, and an asset list. We asked mainly open-ended questions and encouraged respondents to give in-depth responses. We placed special emphasis on developing a rapport with respondents; for each interview we had an initial conversation about the construction of the respondent's house which allowed us to gain his or her trust and clarify our purpose in conducting the interview before talking about defecation behavior. 87 out of 100 interviews were audio recorded to facilitate data analysis. When a respondent declined to have the interview recorded, we conducted the interview nevertheless, taking more detailed written notes. All 100 interviews were included in the analysis. Interviews lasted between one and two hours. Ethical approval for the study was obtained from Princeton University's Institutional Review Board (IRB).

Data analysis. Piloting, interviewing, primary data analysis, and follow up interviews were done over a period of thirteen months. After each day of interviewing, authors met to discuss the day's interviews. We tried to reach consensus about why the households that had built latrines did so. Based on the recording and notes taken on the discussion guides, one of the authors completed a detailed summary for each interview. These were then read and reviewed by the other authors, and in many cases, the authors listened to one another's recorded interviews as well. Meeting about, writing, and reviewing summaries from early interviews allowed us to identify themes, develop hypotheses, and test those hypotheses in future interviews. We changed the interview guide in small ways over time to accommodate new questions and ideas. Software was not used in data analysis; instead, we used memos and notes to keep track of patterns in the data, and kept tabulations related to the themes that arose during the interviews. For example, some of the tabulations related to primary reasons for building latrines, for using them, views of the health benefits of open defecation, and whether anyone in the household objected to owning a latrine. Before writing, the authors met to outline the paper, and identify open questions. We did several follow-up interviews in Uttar Pradesh, Rajasthan, Bihar and Tamil Nadu to follow up on key areas of interest, especially the caste dimensions of pit emptying.



Figure 1: Map of main districts visited for qualitative interviews

Table 1: Households and respondents in the qualitative study

	no. of villages visited	total no. of households interviewed	households in which all members defecate in open	households in which at least one person uses a latrine	no. of households with multiple respondents
Rewari, Haryana	4	24	10	14	14
Fatepur, Uttar Pradesh	5	25	8	17	15
Valsad, Gujarat	5	29	9	20	17
Parsa, Nepal	4	22	7	15	14

	no. of households in which primary respondent is male (18-40)	no. of households in which primary respondent is male (40+)	no. of households in which primary respondent is female (18-40)	no. of households in which primary respondent is female (40+)
Rewari, Haryana	4	9	4	7
Fatepur, Uttar Pradesh	9	7	5	4
Valsad, Gujarat	8	5	3	13
Parsa, Nepal	6	11	2	5

Table 2: Households and respondents in the qualitative study

	all defecate in open	at least one latrine user
households approached	348	111
completed interviews	35	65
partial interviews	2	2
refusal	6	24
decision maker not available	11	18
no longer needed that type of interview in village	294	2
using a latrine for more than 10 years	107	
locked/renting	82	