HomeSense: introduction to safeguarded data

This dataset is generated 06/2017 – 04/2018 from 20 volunteer households in south east England, as part of a (methodological/technical) trial of using digital sensors for observational purposes in social research.

Focused on methodological, technical and ethical issues, the recruitment criteria was to sample intimate personal environments (households) of three types, divided approximately according to ONS statistics (*~30% single occupancy*; *~30% with dependent(s) 0-18yrs*; *~40% with 2 or more adults*), and located in relative proximity to Guildford (Chertsey to Portsmouth). We hoped that interested parties would accept the intrusion in support of developments in social research in good faith that such research is valuable to society in the long run. Using flyers, online forums and a public demonstration of the technology (science festival), we attracted the interest of around 60 households, of which only a third decided to go ahead. In short, the recruitment was steep with a full year passing from our first outreach until the last household trial was completed. As the **Q-2** questionnaire in the dataset shows, the inhabitants' stated reasons for participating were primarily wanting to be of assistance (to researchers) and curiosity, while other reasons had less currency, e.g., had use for the money/activity sensor, interested in the technology and a fun thing to do.

While the sensor-generated data are omitted from this dataset, the trial produced interviews, questionnaires, time-use diaries and ethnographic notes, covering various aspects of the trial, including household configurations and practices, study participation (intrusion, burden, meaningfulness) and records of living with sensors.

What is included in the HomeSense data archive?

The Participant Information Sheet (PIS) which was handed out at the recruitment stage – on which *consent to participation* is based – is included in the dataset along with the consent/assent forms (*0.0-HomeSense_Consent-Assent.pdf* and *0.0-HomeSense_Participation-Information-Sheet.pdf*).

The PIS document details the project (aims and purpose) and what it means to take part (p.1-5); illustrates the sensor equipment, explaining why the data are not shared with participants (p.6); and, contains a sample page of a log sheet for keeping a diary of time-use (p.7), adapting the *Harmonized European Time Use Survey* format.

Table 1 (below) is an overview of the available **data per household, ordered by 'household type'** (columns 1-2).

The household IDs (column 3) are consistently used in the dataset so that individual **data files concerning a single household are easily combined** (relationally).

Columns 4, 5 & 6 indicate **data collected at the start of the trial**: walking interviews with participants in their households, supplemented with,

1. short questionnaire (**Q-1**) to capture 'formal' information about household configuration/utilization.

2. ethnographic notes that draw on the interviews, questionnaire data and observations on site to enrich the picture of household arrangements and practices.

Household type		Household ID	Ethnographic notes on household arrangements	Walking interviews	Q-1 data	Floor plans	Time-Use diaries data		Final interviews	Q-2 data	Notes	Sensor-generated data
2+ adults		101	X	X	X	X	X		X	X		X
2+ adults		102	X	X	X	X	X		X	X		X
2+ adults		103	X	X	X	X	X		X	X		X
2+ adults		104	X	X	X	X	X	x2	X	X		X
2+ adults		105	X	X	X	X	X	x2	X	X		X
2+ adults		106	X	X	X	X	X		X	X		X
2+ adults		107	X	X	X	X	-		-	-	Withdrew	-
single		108	X	X	X	X	X		X	X		X
single		109	X	X	X	X	X		-	X	F.i. void	X
single		110	X	X	X	X	X		X	X		X
single		111	X	X	X	X	X		X	X		X
single		112	X	X	X	X	X		X	X		X
single		113	X	X	X	X	X		X	X		X
w/child(ren)	1 teen	114	X	X	X	X	X		X	X		X
w/child(ren)	10 & 13 yrs	115	X	X	X	X	X		X	X		X
w/child(ren)	4 & 5 yrs	116	X	X	X	X	X		X	X		X
w/child(ren)	2 teens	117	X	X	X	X	X		X	X		X
w/child(ren)	3 yrs	118	X	X	X	X	X		X	X		X
w/child(ren)	1 teen	119	X	X	X	X	X	x2	-	/	Language	X
w/child(ren)	baby	120	X	X	X	X	X	x2	-	X	F.i. void	X

Table 1: Overview of available data

Column 7 indicates floor plans for each household. They are omitted for confidentiality, however, available upon request. They are observational sketches of full property layout, fixtures and furniture, indicating thoroughfares, main sites of various activities and locations of the sensors that were eventually installed.

The time-use diaries (column 8-9) are mostly 1 per household (key respondents), however, four households provided 2 diaries (differentiated by different occupant IDs under the same household ID), done by couples in three households and by a parent and teenage offspring in one.

Columns 10 & 11 indicate **data collected at the end of the trial**, i.e., final interviews with participants in their households 10-13 weeks after sensors were installed, supplemented with a questionnaire (**Q-2**) to capture 'formally' some of the information on living with sensors, privacy, burden of taking part and issues with the equipment. The recorder was left running in most cases while the questionnaire was being administered (latter part of the interviews).

Column 12 holds notes to show that,
1. household 107 withdrew their participation.
2. recording of final interview with 109 is void (technical failure).
3. final interview and questionnaire administration for 119 was cancelled due to absence of translator and unsuccessful attempts at rescheduling.
4. recording of final interview with 120 is void (technical failure).

Column 13 indicates sensor-generated data, omitted from this dataset, however, could be made available to researchers wishing to collaborate with CRESS (contact Prof. Nigel Gilbert).

See also figure 3: *Structure of the HomeSense data archive*, containing PDF, RTF and XLS (2003) file formats, each type respectively deemed most suitable for sharing.

Ethnographic notes

These notes are compiled into a single PDF file (*1.0-HomeSense_ethnographic.notes_household-arrangements.pdf*) with a contents table on the front page, listing the households by ID and type. The document is internally interlinked to optimize navigation, linking household IDs to the relevant sections with backtracking links '*Table of Contents*' at the bottom of each page. The original version of this document holds the floor plans that were removed for the shared version.

Walking interviews

These interviews are best described as 'unstructured', however, they are (semi-)structured based on participants' preferences of how to give a tour of their household and the types of questions prepared by the interviewer. Each interview is filed separately in RTF format (filenames include household IDs) and the project team produced an interview guide for this task (*1.1.1-Walking-interviews_Interview-guide.pdf*) which is also included in the dataset (see figure 3: *Structure of the HomeSense data archive*).

Questionnaire 1 (Q-1)

The questionnaire data is presented in tabular format in a single file (*1.1.3-Q-1_walking-interview-supplement_questionnaire-data.xls*), divided into 6 sheets, two of which contain **key data**, '*household*' & '*occupant*', and four of which are relational, i.e., *categories for numbers*.

1. 'house_type' & 'occupancy_type' for '*household*'
2. 'age_group' & 'sleep_wake_ranges' for '*occupant*'

The labels on those sheets refer to actual (alphanumeric) questions in an embedded questionnaire document (*1.1.4-Q-1_questionnaire-for reference.pdf*) which also is commented in red for clarifications. The grey columns indicate that the numbers logged in them are categorised in subsequent sheets. Zeros are omitted in boolean columns (1|0) as well as in rough % of a total ('occupant').

Figure 1: **Q-1** data sheet, 'household', the grey columns linking to categories in subsequent two sheets

The **Q-1** questionnaire allowed for **free expression/commenting on a number of issues logged in the 'occupant' sheet** which, along with basic demographic/household information, further supports the walking

interviews and notes in painting a richer picture of household arrangements and practices. The 'occupant' sheet lists each household member by occupant ID.

Time-Use diaries

The diaries are presented in tabular format in one file on three sheets: **'time_use_diaries' holds the bulk of the information**, adapting the HETUS format, and two supplementing sheets categorise numbers for 'location_on_site' and 'appliance_in_use', both of which can be multiple within the 10-minute time slots. Zeros are omitted in boolean columns (1|0) and occupant IDs match with the **Q-1** data sheet, 'occupant'.

Figure 2: Fragment of the 'time_use_diaries' sheet

Final interviews

These interviews are semi-structured in the sense that they open typically with a general discussion about taking part and understanding what the trial was all about, then shift toward the questions in the questionnaire (**Q-2**) to capture more formally attitudes concerning the participation, its meaningfulness, the burden, privacy and related issues. It should be noted that the conversation is open-ended so the location of certain topics within the interviews is not entirely uniform. Each interview is filed separately (same as the walking interviews) and an interview guide is included in the dataset (see figure 3: *Structure of the HomeSense data archive*).

Questionnaire 2 (Q-2)

The Q-2 data is presented in tabular format in a single file on three sheets (*1.2.3-Q-2_final-interview-supplement_questionnaire-data.xls*), with labels that ought to be entirely self-explanatory:

1. An '**overview**' sheet of findings per topic category and questions thereunder.
2. A '**full data view**' sheet for the same topic categories and questions thereunder.
3. A sheet detailing information about the sensors on site coming off-line intentionally and accidentally.

Conditions for sharing and use of the data (participants' consent)

HomeSense participants consented to sharing and use of interviews, time-use diaries and household data (excluding sensor-generated data), captured in the consent forms they signed (see *HomeSense_Consent-Assent.pdf*). See also the relevant section of the Participant Information Sheet for reference here is, '***Will my taking part in the study be kept confidential?***' (p.4-5).

Name	Type	Size
0.0-HomeSense_Consent-Assent.pdf	FoxitReader Document	113.2 kB
0.0-HomeSense_Participation-Information-Sheet.pdf	FoxitReader Document	1.2 MB
1.0-HomeSense_ethnographic.notes_household-arrangements.pdf	FoxitReader Document	146.3 kB
▼ 1.1-Walking-interviews-and-questionnaire-data	folder	3 items
1.1.1-Walking-interviews_Interview-guide.pdf	FoxitReader Document	26.6 kB
▼ 1.1.2-Walking-interviews_household-utilisation	folder	20 items
HomeSense-101-13-walking-interview.rtf	RTF document	172.6 kB
HomeSense-102-63-walking-interview.rtf	RTF document	107.7 kB
HomeSense-103-43-walking-interview.rtf	RTF document	265.0 kB
HomeSense-104-33-walking-interview.rtf	RTF document	131.4 kB
HomeSense-105-53-walking-interview.rtf	RTF document	115.8 kB
HomeSense-106-13-walking-interview.rtf	RTF document	194.6 kB
HomeSense-107-23-walking-interview-NO-final.rtf	RTF document	95.9 kB
HomeSense-108-21-walking-interview.rtf	RTF document	102.5 kB
HomeSense-109-11-walking-interview-NO-final.rtf	RTF document	120.4 kB
HomeSense-110-21-walking-interview.rtf	RTF document	60.3 kB
HomeSense-111-41-walking-interview.rtf	RTF document	80.9 kB
HomeSense-112-31-walking-interview.rtf	RTF document	98.4 kB
HomeSense-113-21-walking-interview.rtf	RTF document	91.9 kB
HomeSense-114-12-walking-interview.rtf	RTF document	203.9 kB
HomeSense-115-22-walking-interview.rtf	RTF document	79.1 kB
HomeSense-116-22-walking-interview.rtf	RTF document	95.2 kB
HomeSense-117-32-walking-interview.rtf	RTF document	49.2 kB
HomeSense-118-22-walking-interview.rtf	RTF document	93.5 kB
HomeSense-119-62-walking-interview-NO-final.rtf	RTF document	133.5 kB
HomeSense-120-32-walking-interview-NO-final.rtf	RTF document	116.5 kB
1.1.3-Q-1_walking-interview-supplement_questionnaire-data.xls	Excel spreadsheet	38.9 kB
1.1.4-Q-1__questionnaire-for-reference.pdf	FoxitReader Document	53.7 kB
▼ 1.2-Final-interviews-and-questionnaire-data	folder	3 items
1.2.1-Final-interviews_Interview-guide.pdf	FoxitReader Document	36.6 kB
▼ 1.2.2-Final-interviews_study-participation	folder	16 items
HomeSense-101-13-final-interview.rtf	RTF document	326.8 kB
HomeSense-102-63-final-interview.rtf	RTF document	110.2 kB
HomeSense-103-43-final-interview.rtf	RTF document	312.6 kB
HomeSense-104-33-final-interview.rtf	RTF document	700.7 kB
HomeSense-105-53-final-interview.rtf	RTF document	376.7 kB
HomeSense-106-13-final-interview.rtf	RTF document	698.7 kB
HomeSense-108-21-final-interview.rtf	RTF document	132.1 kB
HomeSense-110-21-final-interview.rtf	RTF document	218.7 kB
HomeSense-111-41-final-interview.rtf	RTF document	152.1 kB
HomeSense-112-31-final-interview.rtf	RTF document	418.3 kB
HomeSense-113-21-final-interview.rtf	RTF document	510.1 kB
HomeSense-114-12-final-interview.rtf	RTF document	269.2 kB
HomeSense-115-22-final-interview.rtf	RTF document	228.7 kB
HomeSense-116-22-final-interview.rtf	RTF document	363.6 kB
HomeSense-117-32-final-interview.rtf	RTF document	177.8 kB
HomeSense-118-22-final-interview.rtf	RTF document	224.4 kB
1.2.3-Q-2_final-interview-supplement_questionnaire-data.xls	Excel spreadsheet	90.1 kB
2-HomeSense_time-use-diaries.xls	Excel spreadsheet	2.5 MB

Figure 3: Structure of the *HomeSense data* archive