



ELSEVIER

Contents lists available at ScienceDirect

Data in Brief

journal homepage: www.elsevier.com/locate/dib



Data Article

Dataset on information strategies for energy conservation: A field experiment in India

Victor L. Chen^a, Magali A. Delmas^{b,c,*}, Stephen L. Locke^d, Amarjeet Singh^e

^a UCLA Electrical Engineering, United States

^b UCLA Institute of the Environment and Sustainability, United States

^c UCLA Anderson School of Management, United States

^d Western Kentucky University, United States

^e Indraprastha Institute of Information Technology, India

ARTICLE INFO

Article history:

Received 30 September 2017

Received in revised form

3 November 2017

Accepted 28 November 2017

Available online 6 December 2017

ABSTRACT

The data presented in this article are related to the research article entitled: "Information strategies for energy conservation: a field experiment in India" (Chen et al., 2017) [1]. The availability of high-resolution electricity data offers benefits to both utilities and consumers to understand the dynamics of energy consumption for example, between billing periods or times of peak demand. However, few public datasets with high-temporal resolution have been available to researchers on electricity use, especially at the appliance-level. This article describes data collected in a residential field experiment for 19 apartments at an Indian faculty housing complex during the period from August 1, 2013 to May 12, 2014. The dataset includes detailed information about electricity consumption. It also includes information on apartment characteristics and hourly weather variation to enable further studies of energy performance. These data can be used by researchers as training datasets to evaluate electricity usage consumption.

© 2017 The Authors. Published by Elsevier Inc. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

DOI of original article: <https://doi.org/10.1016/j.eneco.2017.09.004>

* Corresponding author at: UCLA Institute of the Environment and Sustainability, United States.

E-mail address: delmas@ucla.edu (M.A. Delmas).

<https://doi.org/10.1016/j.dib.2017.11.084>

2352-3409/© 2017 The Authors. Published by Elsevier Inc. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

Specifications Table

Subject area	<i>Economics, Engineering, Psychology</i>
More specific subject area	<i>Energy, Consumer Behavior, Smart Grid</i>
Type of data	<i>Experimental data</i>
How data was acquired	<i>The electricity use data was collected at the field site by direct measurement during the period from August 1, 2013 to May 12, 2014. Apartment and household characteristics were collected through a survey that was completed by each participating household at the beginning of the experiment. The weather data was obtained from the weatherunderground.com from the Indira Gandhi International Airport.</i>
Data format	<i>Stata .dta files</i>
Experimental factors	<i>The dataset includes information about electricity consumption, weather, apartment, and household characteristics.</i>
Experimental features	<i>Aggregate electricity consumption was measured for each participating household. The sampling interval for the high-frequency data is every thirty seconds but has been aggregated to fifteen minute, thirty minute, hourly, and daily measurements. The weather variables update hourly from station measurements.</i>
Data source location	<i>Field Site: Indraprastha Institute of Information Technology faculty housing apartments, New Delhi, India</i>
Data accessibility	<i>Data is available at https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/7MEXN4</i>

Value of the data

- Features household high-frequency electricity data consumption at 15 min intervals for 10 months.
- Data among the highest resolution available to-date in a behavioral experiment in a developing country.
- Measures behavioral responses to information about electricity consumption.

1. Data

The data described in this article was acquired 24 h a day in a field experiment at Indraprastha Institute of Information Technology in New Delhi, India during the period from August 1, 2013 to May 12, 2014. The data are related to the research article entitled: "Information Strategies for Energy Conservation: A Field Experimentenergy conservation: a field experiment in India"(Victor L. Chen, Magali A. Delmas, Stephen L. Locke, Amarjeet Singh, 2017). [(Chen et al., 2017) [1]. The raw data includes (i) time stamp; (ii) electricity consumption in kilowatt-hour (kWh) per unit time; (iii) weather data; (iv) engagement with the treatment messages and online energy dashboard; and (v) apartment dwelling and occupancy characteristics, which do not vary with time during data collection. For convenience, the data is provided in panel format for time series analysis. For time varying variables, each successive row represents a 15 min, 30 min, hour, or daily increment.

2. Materials and methods

The baseline period for all metered apartments was approximately lasted from August 1, 2013 to February 18, 2014. During this baseline period, no behavioral interventions were performed. The treatment interventions began on February 19, 2014 and the treatment groups were sent weekly

Download English Version:

<https://daneshyari.com/en/article/6597255>

Download Persian Version:

<https://daneshyari.com/article/6597255>

[Daneshyari.com](https://daneshyari.com)