Data Article

Survey of socio-economic and contextual factors of households' energy consumption

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A R T I C L E   I N F O

A B S T R A C T

We present a set of data relating to the investigation of the Tunisian Company of Electricity and Gas (STEG). The census is done on a sample of 3000 electrified households. The questionnaire is divided into three main sections: household socioeconomic status, contextual characteristics related to their housing and technical characteristics of equipments used. The objective of this survey is to achieve a reliable and detailed knowledge on the behavior of household energy consumption, particularly for energy saving behavior. This objective has recently been the subject of a research article Jridi et al. (2015) [2].

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1. Specifications Table

Subject area	Economics
More specific subject area	Buildings, households, energy saving equipments
Type of data	Table, figure

How data was acquired	Survey
Data format	Raw, analyzed
Experimental factors	Geographical and socio-economic stratification
Experimental features	Equipments are classified according to their energy efficiencies. The adoption of energy saving equipment is essentially explained by the characteristics of households, Buildings and equipments.
Data source location	All governorates of Tunisia
Data accessibility	Descriptive analysis of data is provided in this article and raw data of the Tunisian Company of Electricity and Gas (STEG) is presented in supporting information.

2. Value of the data

- Bring a deep knowledge of the end-use of residential energy.
- Knowing the behavior, opinions and projects household on energy choices and corresponding equipments.
- Identify the impact of certain socio-economic and geographic variables on the nature of the equipment and on residential energy consumption.
- Future research on the behavior of energy use will be facilitated by the data included here.

3. Data, experimental design, materials and methods

3.1. Data

Since 1984, the Tunisian Company of Electricity and Gas is committed to making quinquennial census surveys about the energy use of its residential customers [1]. In this article, we present the latest survey data received from 3000 households. Sampling methodology is based on the principles of socio-economic and geographical stratification and random selection. The response rate is 96%, of which 92.9% are deemed correct answers. The questionnaire is divided into three sections: (i) the socioeconomic status of the household (age, activity, income, educational level, etc.). (ii) Housing (dwelling type, tenure status, date of construction, number of parts, etc.). (iii) The residential energy equipments, of which STEG gives attention to the energy saving equipments, namely energy saving lamps, the solar water heaters, labeling of refrigerators [2].

The objective of this survey is to identify the determinants of the adoption of the energy saving equipments. We consider three electrical purposes: water heaters solar, efficient refrigerators and energy saving lamps. The determining factors are classified in three categories: socio-economic characteristics of households, buildings characteristics and the technical and economic characteristics of equipments (see Fig. 1).

3.2. Materials and methods for the case of water heater

The first energy saving measure promotes the purchase of solar water heaters as an alternative to other types of water heaters that exist on the market (electric, natural gas and LPG) [4]. In addition to explanatory factors identified above, we include a dummy variable "Dummy for connection to the natural gas network." This variable takes into account the effect of the strategy adopted by Tunisia concerning the natural gas connection on the adoption of solar water heaters. Table 1 shows these descriptive statistics of each type water heaters. With h_1 explanatory variables, identifying the weight