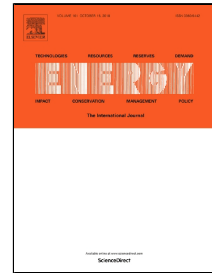


Accepted Manuscript

The determinants of residential energy expenditure in Italy

Giorgio Besagni, Marco Borgarello



PII: S0360-5442(18)31872-3
DOI: 10.1016/j.energy.2018.09.108
Reference: EGY 13802
To appear in: *Energy*
Received Date: 20 August 2018
Accepted Date: 15 September 2018

Please cite this article as: Giorgio Besagni, Marco Borgarello, The determinants of residential energy expenditure in Italy, *Energy* (2018), doi: 10.1016/j.energy.2018.09.108

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

The determinants of residential energy expenditure in Italy

Giorgio Besagni^{1*}, Marco Borgarello¹

¹Ricerca sul Sistema Energetico - RSE S.p.A., Power System Development Department, via Rubattino 54, 20134 Milano

* Corresponding author: Giorgio Besagni, giorgio.besagni@rse-web.it

Abstract

As a large part of primary energy consumption in different countries is related to the residential sector, a reduction in energy consumption at the "*household-scale*" may determine a significant reduction in the carbon emission at the "*country-scale*". Hence, the precise knowledge of the relationships between the household characteristics and the energy consumption/expenditure may serve as basis for policymakers when planning investments aiming to reduce the primary energy consumption in the residential sector. This paper contributes to the existing discussion, focusing on the Italian case study, by analyzing the relationships between the residential energy expenditure and the building factors, socio-demographic variables and appliances. In particular, the impact that the different household characteristics have on per-family energy expenditures has been examined commented and compared with the previous literature. The analysis is performed by coupling (a) the ordinary least squares method, to determine the relationship between the variables, (b) the variance inflation factor, to check for multicollinearity issues, and (c) the least absolute shrinkage and selection operator, to select suitable variables. Subsequently, a segmentation of the Italian families has been proposed, by using a segmentation-tree approach and the outcomes of the previous analysis.

Keywords. Energy expenditure; Residential sector; Socio-demographics; Lasso regression; Multicollinearity

Download English Version:

<https://daneshyari.com/en/article/10156237>

Download Persian Version:

<https://daneshyari.com/article/10156237>

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