

IV Sustainable Energy Supply and Consumption

Extended Presentation Abstract

**Life-Cycle Cost Disclosure for Household Appliances in the Age of E-Commerce:  
Experimental Evidence regarding Consumer Behavior**

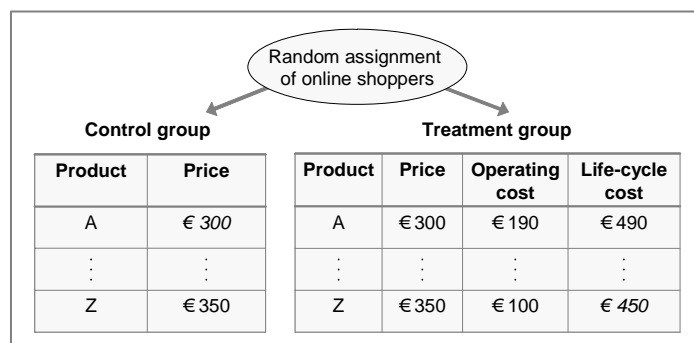
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Despite considerable efficiency improvements over the past decades, large electric appliances still contribute substantially to residential energy consumption. To address this problem, mandatory energy efficiency labels have been introduced in the European Union. Given that an increasing number of appliances are being sold on the internet, energy efficiency information should be critically reassessed with respect to its effectiveness and future prospects in an e-commerce setting.

In particular, it is still an open question in what format energy information is more effective: Should operating cost be presented in *physical units* (i.e. „kilowatt-hours“), as done on the European energy efficiency label? Or should the *monetary value* of operating cost be stressed more strongly to facilitate long-term thinking about energy use and induce behavioral change on the part of consumers? [1]

This presentation reports the findings from two recent field experiments that were conducted in a commercially operating online shop for washing machines [2] and in a price comparison engine for cooling appliances [3]. Without being informed about the experiment, online shoppers were randomly assigned to two distinct experimental conditions.



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While the control group received regular product information, the treatment group saw additional life-cycle cost estimates – that is, the sum of purchase price and operating cost estimated over the life span of the appliance (see figure). Shoppers in the treatment group could see more easily that, in the long run, product Z would be less costly than product A.

The experimental results suggest that consumers may opt for more energy-efficient appliances if they are provided with monetary life-cycle cost. On the other hand, life-cycle cost provision appears not to lead to higher revenue for the website that supplies the information. This apparent conflict between public good, i.e. potential energy savings, and private profitability represents a challenge from a sustainability perspective. The presentation concludes with a discussion of options for incorporating life-cycle cost disclosure into commercial websites to speed up the market transformation towards less energy-consuming appliances.

**Keywords:** ENERGY EFFICIENCY, ENERGY INFORMATION, MARKET TRANSFORMATION

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**References:**

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- [2] Deutsch, M. (2008). *Life-cycle cost disclosure, consumer behavior, and business implications. Evidence from an online field experiment*. In T. Geerken, A. Tukker, C. Vezzoli & F. Ceschin (Eds.), *Sustainable Consumption and Production: Framework for action*. Conference of the Sustainable Consumption Research Exchange (SCORE!) Network (Vol. Refereed Sessions III-IV, pp. 391-412). Brussels. <http://www.lifecyclocosting.eu>
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