The effect of energy labelling on consumers’ purchasing decision: a field experiment in Spanish appliances’ retailers

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1. INTRODUCTION

• Energy efficiency gap: households and businesses invest less in energy efficiency (EE) than what may appear economically rational
• Possible explanations: market failures, behavioural failures and informational failures: Energy Labelling System
• EE policies to cope with informational failures: Energy Labelling Directive (2010/30/EU)

2. MOTIVATION AND OBJECTIVE

• Motivation: Promote the purchase of energy efficient appliances
• Objective: Test the effectiveness of presenting a monetary lifetime oriented label with energy savings information.
• How?
  • Field experiment
  • Why a field experiment?
  • A real situation is needed to test the effectiveness of the monetary label, based on actual purchases
• Field experiment video: https://vimeo.com/24586754

3. FIELD EXPERIMENT DESIGN IN 9 STEPS

1. WHAT APPLIANCES? Washing machines, Fridges, Dishwashers
2. WHEN? 6 month experiment (Start: February 2018, End: July 2018)
3. WHERE? Small stores in the Basque Country, Cantabria, Comunidad Foral de Navarra and Aragón
4. WHAT INFORMATION? Savings information of the energy consumption during the lifetime of the products (Lifetime: 10 years; Electricity Price (\(P_{\text{elec}}\)): 0,182 €/KWh)

5. HOW ARE ENERGY SAVINGS CALCULATED?

\[ \text{Energy savings} = (\text{MEC} - \text{EC}) \times P_{\text{elec}} \times L \]

\text{MEC} = \text{Maximum energy consumption of similar products}

6. HOW IS IMPLEMENTED THE EXPERIMENT?

<table>
<thead>
<tr>
<th>Treatment group (N=14)</th>
<th>Treatment description</th>
<th>Treatment Period</th>
<th>Control group (N=12)</th>
<th>Control description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment 1</td>
<td>Energy savings label</td>
<td>5th February – 4th April of 2018</td>
<td>Control</td>
<td></td>
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<tr>
<td>Treatment 2</td>
<td>Training of the sales staff</td>
<td>5th April – 30th June of 2018</td>
<td></td>
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<tr>
<td>Treatment 3</td>
<td>Energy savings label + Training of the sales staff</td>
<td>4th June – 31th July of 2018</td>
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7. IMPROVEMENTS REGARDING THE LITERATURE:

8. COLLECTED DATA: Sales data (Type of appliance, Brand, Date of the sale, Price of the appliance, Discount in force) and Customer’s questionnaire (Age range, Gender, Postal code).

9. ESTIMATION OF THE MODEL: Probit model \( P(Y = 1 | X) = \beta_0 + \beta_1 \text{Treatment1} + \beta_2 \text{Treatment2} + \beta_3 \text{Treatment3} + \beta_4 \text{Price} + \beta_5 \text{Attributes} + \varepsilon \)

5. MAIN CONCLUSIONS

• Washing machines and dishwashers: No effects were found
  • A tentative explanation: usage of washing machines very much determines the actual consumption of the appliance, consumers give little importance to energy savings when purchasing the dishwasher.
  • Fridges: The three treatments increase the probability of buying an energy efficient appliance (\(A_{++}+\))
  • A tentative explanation: fridges are usually connected 24 hours and every day, and it is unlikely that the degree of cold is often changed.
• ONGOING WORK: Further researcher will be needed to provide evidence on why monetary information on savings may seem to work in the case of fridges but not in the case of dishwashers and washing machines.

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