

THE ROLE OF LABEL INFORMATION ON CONSUMER PREFERENCES FOR ENERGY EFFICIENT APPLIANCES IN SPAIN

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Overview

The goal of the EU energy efficiency policy is to encourage consumers to consider energy consumption in their purchasing and usage decisions and as a result make more energy efficient decisions (EC, 2008). It has been shown (for example, in Greene et al, 2005) that policies aimed at influencing behaviour at the point of sale are likely to lead to greater efficiency benefits than policies aimed at altering behaviour post-investment due to the sustained need for consumer engagement in the latter. For this reason, in the project CONSEED (CONSUMER Energy Efficiency Decision Making) we focus on consumer decision making at the point of investment.

With regard to investment decisions, due to the pace of technical change and the lifetime of investments in appliances, there will always be a difference between the efficiency of a consumer's investment and what is potentially achievable. Notwithstanding this, it has been observed that when making energy related purchases, consumers do not necessarily choose the product which will minimise the net present value of their total costs (purchase cost and future energy consumption) at the point of sale. Consumers tend to not fully take into account future operating costs. These deviations from cost-minimisation, on aggregate, have resulted in the so-called "Energy Efficiency Gap".

In order to reduce this gap and influence and motivate consumers to invest in greater energy efficiency, it is necessary to understand the wide range of factors which potentially influence their decision. In the present study we examine the full suite of factors influencing households' purchasing decision making of appliances, and investigate the role of energy efficiency and in particular of energy labels as it has been shown that people do not understand well the information of the labels (Davis and Metcalf, 2016).

Method

A focus group was conducted in May 31, 2017 in the city of Bilbao with a total of 8 home owners in order to understand consumer decision making and preferences regarding appliances and energy efficiency. Focus groups are group discussions designed to learn about subjects' perceptions on a defined area of interest (Stewart et al, 2007). Participants were recruited in the Autonomous region of the Basque Country (Spain) strategically in order to ensure heterogeneity in the group regarding: gender, education level (low, medium, high), age, number of dwellings (1 or 2), household composition (number of members) and socio-economic status (low, medium, high).

The appliances under study are the refrigerator and the washing-machine. The discussion was conducted following an interview guide. The guide was designed in a way to lead the discussion to specific topics without infusing it with any of our beliefs and expectations. The discussion started with some warm-up questions (which appliances participants have brought recently, which are the ones they use most at home and why, and how their purchasing process is).

The session of the focus group had three main pillars. The first pillar was devoted to identify the key attributes that influence the purchasing decision of these appliances (e.g. price, aesthetic, energy efficiency, performance or brand). The second pillar was focused on the understanding and perception of energy efficiency, whereas the third pillar analysed the energy label information and participants' preferences for including monetary information on energy costs. The focus group discussion was recorded on video and audio supports and transposed to a text format for the analysis.

Results

All participants have bought recently an appliance (less than one year) for their main dwelling and/or their second house. Participants agree that the reason for buying a new appliance is the breaking down of the ones they had previously. The purchasing decision is usually made by the main members of the household although women seem to

play a major role in some cases (particularly, when buying a washing-machine). Internet, shop-assistant's opinion, and friends and relatives' experiences play also an important role in the decision.

It seems that there are two key factors when buying a refrigerator and a washing-machine: the dimension and capacity, and the price. In fact, dimension (height, width, depth) is considered more as a constraint since the new appliance has to fit in a given space. Then, there are other characteristics such as the performance (programs and functions, temperatures, interior design and organisation, control panel, etc.), the brand, the energy and water consumption and the aesthetic (colour, material, design) that on equal terms with the key ones could lead the consumer to buy an appliance or the other.

For the participants, energy efficiency is a concept difficult to define properly. They relate it to the production of energy, the reduction of energy consumption, labelling and to the environment. Participants were asked about their understanding of energy labels. Most of the participants are aware of the existence of the energy efficiency labels. However, they, as well as their relatives or peers neither fully understand its language nor they fully rely on it. Participants react positively to the colour and letter stimuli but the energy consumption data in KWh/year is unclear to all of them because the unit of measure is difficult to apprehend for non-experts. The same lack of relative measurement was made with regards to the noise level information, expressed in decibels. They highlighted that a scale is missing to value the units of noise and energy consumption.

Participants were then proposed to improve the design of the label. They proposed several changes and retain some positive points. The colour/letter graduation system is good stimuli as they are "popular" reference easy to apprehend. However, they would complement it with a simple text to explain the meaning of the grades. The energy consumption data could be provided in monetary units (either to complement or replace the physical unit of KWh/year). Knowing the operational cost would help them to decide on their willingness to pay for a more energy efficient appliances. However, they outlined several challenges in providing an economic value to the label because of both the uncertainty of the annual consumption and of the electricity cost: the cost depends on the frequency of uses which fluctuates with households' characteristics and the price of energy. They suggested that a possible information could be presented either for an average of uses and electricity price or per use of the appliance (in the case of washing-machine). For the noise information, they propose to complement this information with a relative gradient of noise level from low to high based on tolerable or recommended levels of noise

Conclusions

There are two key attributes when buying a refrigerator and a washing-machine: the dimension and capacity, and the price. Information on energy consumption (and water for the case of the washing-machine) is not decisive in the purchasing decision, but together with the performance (involving programs and functions, security) can lead the consumer to buy a more energy efficient appliance on equal price, dimension and capacity.

The group think that current labels are not a self-contained, they miss clarity and valuable information. Moreover, they identified that the *language of the label* is based on *intuitive popular signals* analogous to traffic laws and *scholar evaluations* (male, 49). This fact makes trust the main subjective element that guides the decision, instead of rationality. However, the group clearly expressed its lack of confidence with regard to institutions, manufacturers and labels and equity concerns. To restore confidence, they suggest a more transparent and self-contained label coupled with trained sales staff, and educational and informational campaigns to better apprehend the *language* of the labels.

Transparency and financial supports would also help restoring the equity issue raised in the discussion between their individual effort and the effort of manufacturers regarding the contribution of environmental and climatic impacts mitigation. All in all, the main barrier to buying energy efficient appliances is then for the group the language of the label; they would value more transparency and additional economic information on the operational costs in the label.

References

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