



Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin



NUDGING ENERGY EFFICIENT PURCHASING DECISIONS



ENERGY EFFICIENCY LABELS - WHO CARES ?

A demographic assessment of consumer
attitudes to energy efficiency

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IRISH RESEARCH COUNCIL
An Chomhairle um Thaighde in Éirinn



#LoveIrish
Research

A national campaign of the
Irish Research Council



ELECTRICAL

Presentation Outline

- Background & Motivation
- Methodology
- Some preliminary results

Framework

- The Energy Efficiency gap
 - “seemingly low adoption of seemingly beneficial energy efficiency investments”
 - Allcott and Greenstone, 2012; Frederiks et al., 2015; Gerarden et al., 2015; Gerarden et al., 2015; Greene, 2011; Linares and Labandeira, 2010; Meyerding, 2016; Ramos et al., 2015; Reddy, 2013; Jaffe & Stavins, 1994

Energy costs not salient



Indesit Washer Dryer

IWDC6125

In Stock Online

Add to Compare

RRP: €499.99

€419.99



Nordmende 5KG 1000 Spin Washing Machine

WM1002WH

Online Exclusive

Add to Compare

RRP: €279.99

€239.99



Whirlpool 6KG 1200 Spin Washing Machine

WWDC4406

In Stock Online

Add to Compare

RRP: €349.99

€299.99



Whirlpool 9KG 1200 Spin White Washing Machine

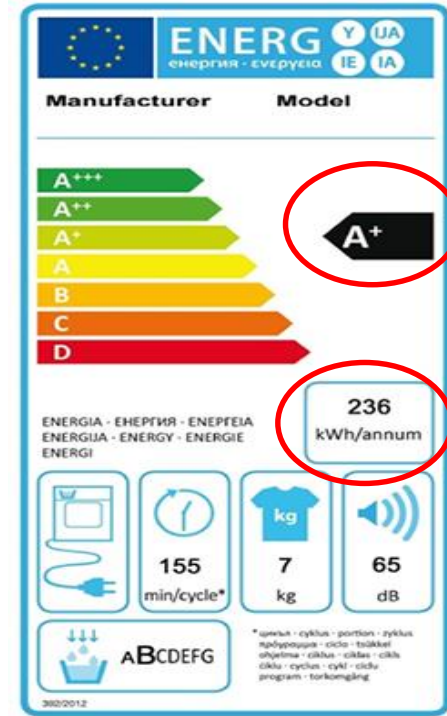
WWDC9200

In Stock Online

Add to Compare

RRP: €449.99

€369.99



Energy Costs not salient => focusing bias on purchase price

Make energy costs more salient

- What if we showed lifetime usage cost information in monetary terms as well?
 - Three experimental field trials:
 - Kallbekken et al., 2013
 - DEEC, 2014 (Behavioural Insights Team, UK)
 - Carroll, Denny, Lyons 2015
 - potentially 4% savings - mixed results

Randomised Control Trial

- Industry partner – DID Electrical
- 23 stores nationwide
- Cluster parallel randomised controlled trial (RCT)
- New labels showing lifetime costs
- Randomisation of treatment at store level
- Four appliance types
- RCT currently in the field ...



 A red piggy bank graphic with the text 'Estimated 10 Year Running Cost € 413 (234kWh p.a.)'. Below the piggy bank is a QR code and the text 'Scan here to compare models and to personalise this cost information for YOUR household:'. At the bottom, there is an energy efficiency scale from A (Most expensive to run, €532) to A+++ (Least expensive to run, €330). The current model is marked as A+++ with a green arrow pointing to it.

Estimated 10 Year Running Cost
€ 413
(234kWh p.a.)

Scan here to compare models and to personalise this cost information for YOUR household:

This model A+++

A Most expensive to run €532 Running Costs € A+++ Least expensive to run €330

This estimate is based on an EU estimate of 280 cycles per annum, energy measurements provided by the manufacturer under EU regulations and the average Irish electricity price in 2016 of 40.1763/kWh
Model: Whirlpool (Ex Display)ADP900IX 3

Consumer surveys

■ Consumer surveys in all stores

- Demographic info
- Owner/renter/landlord
- Energy/environmental awareness
- Purchasers and non-purchasers
- Risk preferences/Patience
- Treatment stores: Engagement with labels



■ 10 RAs surveying in stores at weekends

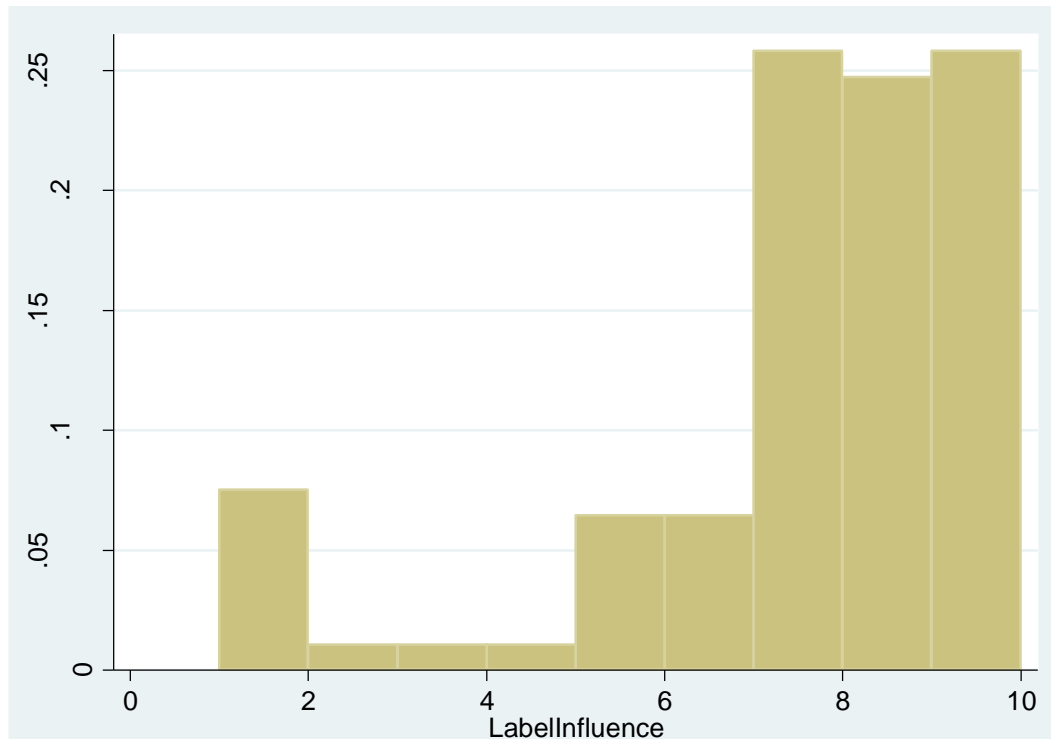
- 600 responses so far

Results

- How important is/was the energy efficiency of the appliance when making your decision? Scale of 1 to 10
- The following variables statistically significantly *** **increase** probability that someone will answer 7 – 10
 - High environmental concern
 - Age brackets (30 – 40), (40 – 50) and (50 – 60)
 - More adults in the household
- The following variables statistically significantly *** **decrease** probability that someone will answer 7 – 10
 - Landlords

What about label?

- **To what extent did seeing the running costs influence your ultimate purchasing decision? Scale of 1 to 10 with 1 being ‘not at all’ and 10 being ‘it was critical in my ultimate decision’**



Estimated 10 Year Running Cost
€ 413
 (234kWh p.a.)

Scan here to compare models and to personalise this cost information for YOUR household:

This model A+++

A Most expensive to run €532 A+++ Least expensive to run €330

Running Costs €

This estimate is based on an EU estimate of 280 cycles per annum, energy measurements provided by the manufacturer under EU regulations and the average Irish electricity price in 2010 of €0.1763/kWh
 Model: Whirlpool (Ex Display)ADP900X 3

Who was influenced by the new label?

- The following statistically significantly *** **more** likely to answer 8 – 10 (highly influenced)
 - Higher educated (masters or phd)
 - More adults in the household
 - More children in the household
- The following statistically significantly *** **less** likely to answer 8 - 10
 - Very high earners (€6k - €7k) and (€7k+) per month

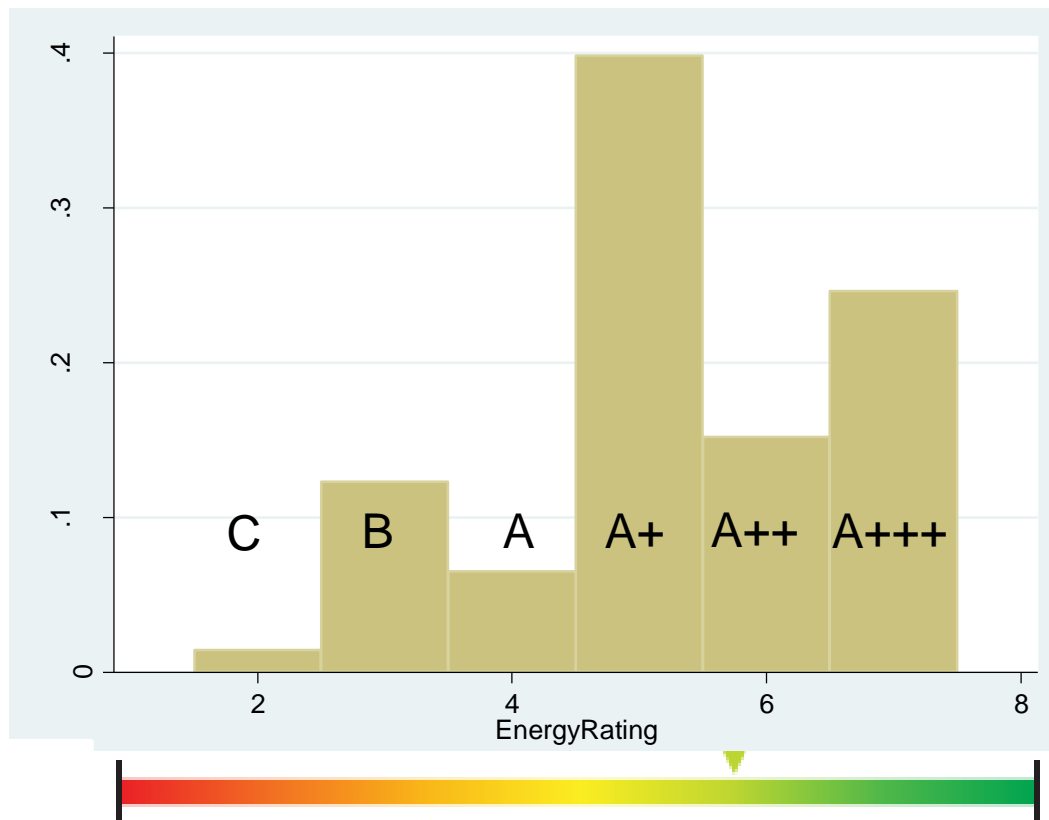
Results

- How important is/was the energy efficiency of the appliance when making your decision? Scale of 1 to 10
- T-test of difference between answers in treatment and control stores
 - Treated customers statistically significantly * more likely to answer “7 – 10” to this question
 - New label increases stated importance of energy efficiency

What about actual appliances bought?

- Does stated energy efficiency attitude influence actual purchase decision?

Efficiency of appliances purchased



$$e_{ij} = f(\text{consumerinfo}_i, \text{treatment}_{1,0})$$

(Very) preliminary results

- Probability that someone will buy A++ or above (probit)
 - Statistically significantly *** more likely if indicated high environmental concern and a higher patience level
 - Income, ownership, gender, age etc – not statistically significant
 - Stated energy efficiency concern not statistically significant
 - However, small number of observations

Conclusions

- Energy efficiency is more important for those with high environmental concern, age group 30 – 60
- Monetary info more important for highly educated, larger households
- Target group: Highly educated, middle income
- Monetary labels do increase stated importance of energy efficiency in purchasing decision but unclear how this translates to actual purchasing behaviour