Environmental Labeling and Motivation Crowding Out

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Preview

- Motivation
- Policy Background
- Objectives
- Prior Research
- Economic Model
- Methods & Procedures
- Policy Implications

Motivation

- Environmental Labeling in the US
  - Apparent preference for programs with both *public* and *private* benefits
  - Appeal to “narrow self-interest”
- Cracks in the economic foundation?
  - “Altruism”
  - Motivation Crowding Out (MCO)
- Might MCO affect consumer response to environmental labeling?

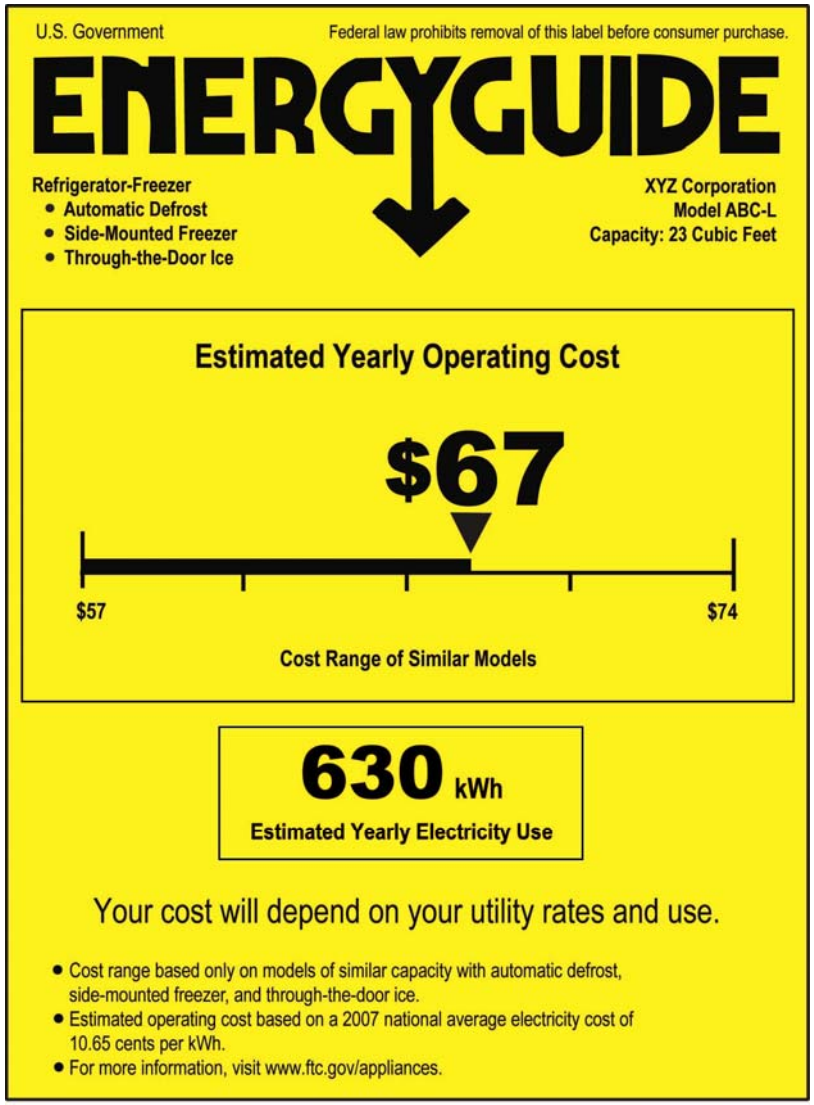
Third-Party Environmental Labeling

Program Type	Information Type	Basis for Participation
Seal-of-Approval	Positive	Voluntary
Single Attribute Certification	Positive	Voluntary
Report Card	Neutral	Voluntary
Information Disclosure	Neutral	Mandatory
Hazard of Warning Label	Negative	Mandatory

Source: USEPA (1993)

Energy Guide

- Information Disclosure
- Home appliances and energy-using equipment
- Since 1980
- FTC/DOE



ENERGY STAR®

- Seal-of-Approval or Single Attribute Certification
- Appliances, light bulbs, buildings, etc.
- Since 1992
- EPA/DOE

"Money Isn't All You're Saving"

"Save Energy, Save Money, Protect the Environment"

Green Power Partnership

- Seal or Certification
- Organizations consuming specified percentage of energy from certain renewable sources
- 2001
- EPA

Objectives

- Analyze influence of extrinsic (energy cost savings) and intrinsic (helping the environment) incentives on willingness to pay for consumer products
  - Evidence of MCO?
- Analyze influence of other factors on willingness to pay for environmentally labeled consumer products
  - Program characteristics
  - Demographics
  - Attitudes and Opinions

Prior Research

- Evidence that environmental labeling programs are influencing consumer behavior
  - Opinion/Recognition Surveys
  - Stated Preference Surveys
  - Revealed Preference Analyses
    - E.g., Bjørner, Hansen and Russell (2004)

Prior Research

- Energy Efficiency and Green Power Labeling
  - Energy crisis of the 1970's
  - Identification of the "efficiency gap"
  - ENERGY STAR
  - Green Power

Prior Research

- Prosocial Behavior and MCO
  - MCO
    - Psychological Literature
      - Deci and Ryan (1985); Deci (1971)
    - Experimental Evidence
      - Deci, Koestner, and Ryan (1999)
    - Field work
      - Frey and Jegen, 2001
  - Prosocial behavior more generally
    - Meier (2006)
    - Bénabou and Tirole (2006)

Economic Model

$$\max v_z \cdot z_i + v_Y \cdot Y_i - p_i + x\left[\gamma_z E\left(v_z \middle| z_i, Y_i\right) - \gamma_Y E\left(v_Y \middle| z_i, Y_i\right)\right]$$

- Adapted from Bénabou and Tirole (2006)
- Where:

  z = public attributes (intrinsic motivation)

  Y = private attributes (extrinsic motivation)

  v_z, V_Y represent consumer preferences

  p = product price

  x = visibility of salience of the choice

Methods & Procedures

- Conjoint Analysis
  - Hypothetical market or stated preference
  - Meant to replicate purchase decision

If you were shopping for a side-by-side refrigerator/freezer for your home and these were your only options, which would you choose?			
	❍	❍	❍
Brand	Frigidaire	GE	Amana
Size	21.7 cubic feet	25.3 cubic feet	23.9 cubic feet
Icemaker	Icemaker in freezer	Icemaker in freezer	In-door dispenser
Warranty	2 year warranty	2 year warranty	1 year warranty
Energy Usage	ENERGY STAR	Meets Federal Requirements	ENERGY STAR
Price	$1199	$1479	$1349

Methods & Procedures

- Additional Survey Questions
  - Debriefing
  - Attitudinal
  - Demographic
- Survey Implementation
  - Computerized
  - Online

Methods & Procedures

- Product Selection Criteria
  - Energy consumption
  - Familiarity, buying experience
  - Adequately described with limited number of attributes
  - Limited importance of aesthetic, visual qualities
  - Accessibility of product information

Methods & Procedures

- Refrigerator Attribute Identification and Selection
  - Price
  - Brand
  - Finish
  - Size
  - Through-the-door water/ice
  - Noise Control
  - Humidity Control
  - Drawers (number)
  - Shelving (type)
  - Water Filtration
  - Length of warranty

Methods & Procedures

- Environmental Labels (Survey Versions)
  - ENERGY STAR
    - High and low private benefit
  - Green Power Partners
  - Energy Savers

ENERGY STAR Example:
Another factor that you may consider is whether or not the refrigerator has been awarded an ENERGY STAR® label. All refrigerators sold in the US are required to meet federal guidelines limiting their energy consumption. To be awarded the ENERGY STAR label, the refrigerator must consume at least 20% less energy than the federal guidelines. As a result, an ENERGY STAR refrigerator will, on average, reduce a household's electricity bill by $14 per year and reduce the emission of carbon dioxide associated with energy production by about 195 pounds per year. Carbon dioxide is a greenhouse gas that contributes to global climate change.

Methods and Procedures

- Four different survey versions
- Test of the MCO Hypothesis
  - WTP for ENERGY STAR with high cost savings > WTP for Green Power Partners or Energy Saver > WTP for ENERGY STAR with low cost savings
- Concerns
  - Equivalence of public benefits

Methods & Procedures

- Focus Group Analysis
  - Product and non-environmental attribute selection
  - Environmental attributes
  - Survey instrument

Policy Implications

- Relevance of public and private dimensions of labeling programs
- Influence of other program characteristics on consumer response
- Influence of demographic, attitudinal and opinion factors on consumer response
- Usefulness of conjoint analysis in evaluating labeling programs/attributes
- Empirical test of the objection that market mechanisms will lead to “moral ambiguity”