Contents

- Why bother?
- Meet the data
- Distributions
- Factors predicting adoption
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Why bother?

- **Equity:**
  - Uneven distribution of benefits

- **Regressive:**
  - Benefits may accrue to the well off

- **Uptake may asymptote**
  - To something...
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Meet the Data

- British Household Panel Survey
  - Wave 18 (2008-9)
  - N households = 6,500

- Understanding Society
  - Waves 1-4 (2009-2013)
    - Data for waves 1-3 available now
  - N households = 30,000

Eco-Tech & Behaviours/Attitudes
Meet the Data

BHPS W18
USOC W1
USOC W2
USOC W3
USOC W4

N households

BHPS Wave 18  USOC Wave 1

We are here!
What Energy-Tech?

- Energy ‘production’
  - Solar PV (electricity)
  - Wind Turbines (electricity)
  - Solar Thermal (hot water)

Key questions:
- Who is adopting?
- What factors predict this?
- What difference does it make?
Key variables:

- Energy Tech uptake

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<th>Solar PV</th>
<th>Solar Thermal</th>
<th>Wind Turbine</th>
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- Solar PV only: 35%
- Solar Thermal only: 35%
- Both: 30%
Key variables

- Energy Tech uptake

- ‘Environmentally friendly’
  - Mean individual level actions + household level behaviours

- Socio-economic
  - Tenure, Occupancy, Income, education levels, energy consumption

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@dataknut: The Distribution of Domestic Energy-Tech in Great Britain: 2008 - 2011

Distributions

**Over time…**

Source: Own calculations of pooled BHPS (W18) & USOC (W1) GB sub-sample
Weighted for non response and correcting for survey design
Error bars = 95% Confidence intervals
Distributions

- Over equivalised income quartiles

**Has energy tech**

**Considering energy tech**

Equivalised income: controls for household size (persons, OECD approach)

Source: Own calculations of pooled BHPS (W18) & USOC (W1) GB sub-sample weighted for non response and correcting for survey design

Error bars = 95% Confidence intervals
@dataknut: The Distribution of Domestic Energy-Tech in Great Britain: 2008 - 2011

Distributions

- Over accommodation type

Has energy tech

Considering energy tech

Equivalised income: controls for household size (persons, OECD approach)

Source: Own calculations of pooled BHPS (W18) & USOC (W1) GB sub-sample weighted for non response and correcting for survey design
Error bars = 95% Confidence intervals
Distributions

Over tenure

Has energy tech

Considering energy tech

Source: Own calculations of pooled BHPS (W18) & USOC (W1) GB sub-sample weighted for non response and correcting for survey design

Error bars = 95% Confidence intervals

Confirms: DECC (2012) Identifying trends in the deployment of domestic solar PV under the Feed-in Tariff scheme
Distributions

Over energy consumption quartiles

Has energy tech

Considering energy tech

Confirms: DECC (2012) Identifying trends in the deployment of domestic solar PV under the Feed-in Tariff scheme

Source: Own calculations of pooled BHPS (W18) & USOC (W1) GB sub-sample weighted for non response and correcting for survey design

Error bars = 95% Confidence intervals
Distributions

- Over ‘Environmentally friendly’ quartiles

**Has energy tech**

- Enviro Friendly HH Q4 (highest)
- Q3
- Q2
- Enviro Friendly HH Q1 (lowest)

**Considering energy tech**

- Enviro Friendly HH Q4 (highest)
- Q3
- Q2
- Enviro Friendly HH Q1 (lowest)

Index: Mean of individual level scores + recycling + green electricity tariff
Source: Own calculations of pooled BHPS (W18) & USOC (W1) GB sub-sample weighted for non-response and correcting for survey design
Error bars = 95% Confidence intervals
@dataknut: The Distribution of Domestic Energy-Tech in Great Britain: 2008 - 2011

Distributions

- Urban vs rural

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- Urban vs rural

- Has energy tech
- Considering energy tech

Source: Own calculations of USOC (W1) GB sub-sample weighted for non response and correcting for survey design
Error bars = 95% Confidence intervals

Confirms: DECC (2012) Identifying trends in the deployment of domestic solar PV under the Feed-in Tariff scheme
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Adopted Energy Tech

Other effects: rural (positive)

But: low explanatory power => Lots of unexplained variance

Source: Logistic regression of BHPS (W18), USOC (W1) GB sub-sample. Error bars = 95% Confidence Intervals for coefficients
‘Seriously Considering’ Energy Tech

Other effects: rural (positive)

But: low explanatory power => Lots of unexplained variance

Source: Logistic regression of BHPS (W18), USOC (W1) GB sub-sample. Error bars = 95% Confidence Intervals for coefficients
‘Rejected’ all Energy Tech

Other effects: rural (negative)

But: low explanatory power => Lots of unexplained variance

Source: Logistic regression of BHPS (W18), USOC (W1) GB sub-sample. Error bars = 95% Confidence Intervals for coefficients
Adopted Solar PV/Solar Thermal

Other effects: rural (positive) for Solar Thermal but not Solar PV

High explanatory power => but much captured by intercept (not shown)
And small n for adoption groups

Source: Logistic regression of BHPS (W18), USOC (W1) GB sub-sample. Error bars = 95% Confidence Intervals for coefficients
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Summary

- **Adopters generally:**
  - home-owning, (large) detached & rural
  - higher reported ‘enviro friendly’ views/actions

- **Those seriously considering generally:**
  - As above
  - Already have some form of energy tech
  - Highest energy spenders

- **Rejecters generally:**
  - Urban renters, not detached
  - Lower reported ‘enviro friendly’ views/actions
  - Lower energy spend
Contrasts:

- **Solar PV & Solar Thermal Adopters:**
  - Different housing type ‘effects’?
  - Different income ‘effects’?
  - Different ‘attitudinal’ effects

- Overall:
  - Emphasis on constraints over choice
  - Equity issues are clear…

Causality?
Thank you

- **Questions?**
  - b.anderson@soton.ac.uk
  - @dataknut

- [http://www.energy.soton.ac.uk/esrc-sdai-attitudes](http://www.energy.soton.ac.uk/esrc-sdai-attitudes)