What motivates retrofitting? Results of a nationally representative survey in Great Britain

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Session A: Acceptability

Monday, 24th of August, 2015

BCEP Groningen 2015

Background & Importance

- Residential buildings responsible for about a quarter of total carbon emissions (Palmer & Cooper, 2014).
- Dwellings are an important target area for emission reduction: The UK Government established the goal of reducing emissions from homes by 29% by 2020 (DECC, 2009).
- Millions of retrofits of domestic homes planned over the next decades to aid decorbanisation (UK CCC, 2010).

How can we promote uptake of retrofitting?

Barriers to energy efficiency retrofit

- Hassle & inconvenience factor (Roy et al., 2007; Skelton et al., 2009)
- Financial aspects (Emmert et al., 2007; Defra, 2009; Skelton et al., 2009)
  - Also: split incentive landlord – tenant (Philipps, 2012)
- Lack of knowledge and understanding (Emmert et al., 2010)
- Lack of information (COI, 2010)
- Invisibility of works (Emmert et al., 2010) & low (reported) social visibility (Nolan et al., 2008)

Excellent overview: Wilson et al., 2014; Table 1

Motivators and moments for retrofit

- Government grants / incentives (Skelton et al., 2009)
- Greater comfort / warmth in the home (Caird et al., 2008; Skelton et al., 2009)
- Quality assurance (Skelton et al., 2009)
- Environmental benefits (Caird et al, 2008)
  - But: sample biased towards green consumers
- Most likely to happen during periods of other renovation work (Wilson, 2008)

Can we use framing to impact on motivation for energy efficiency renovations?

- Studies on barriers to / motivations for energy efficiency renovations mainly used (non-representative) surveys, interviews, focus groups
- But no systematic study on how we can impact on decision to take up energy efficiency renovations

Is there a role for message framing?

General findings on framing

- Widely applied in health sector (e.g. Gallagher & Updegraff, 2012; Toll et al., 2007; Updegraff, Rothman, & Salovey, 2012)
- For environmental issues:
  - Gain versus loss framing (Spence & Pidgeon, 2010; Hardisty & Weber, 2009)
  - Money versus environment (Spence et al., 2014; Schultz et al., 2015; *Moira Nicolson – Tuesday; Session D, 2.30 pm*)
  - Money vs. health vs. environment (Hardisty & Weber, 2009)
  - Social norms (Nolan et al., 2009)
  - And many more!

Our study

- Nationally representative sample in Great Britain
- Data collection August 2014
- Main aim: understand potential uptake of demand side response *(Mike Fell; Wednesday; Session G; 2.30 pm)*
- N = 2002 participants in online survey
  - Fully / jointly responsible for paying energy bill
  - Corrected for those who had not varied in response at all (N = 176)

Survey experiment on uptake of energy efficiency renovations

- Participants randomly assigned to one of 5 conditions with differently framed information on the benefits of increasing home insulation
  - *Your Energy Supplier has launched a scheme that offers loans for wall and roof insulation with an interest rate that is 1 % lower than usual bank rates and a flexible pay-back period of up to 10 years. Your home has been assessed and found suitable for this intervention as the amount of insulation could be improved. Improving the insulation of your home would help to keep the heat in much better. [FRAME].*

This can reduce your energy consumption for heating significantly, making your energy bills substantially lower. (financial)

This can reduce your energy consumption for heating significantly, which benefits the environment. (environmental)

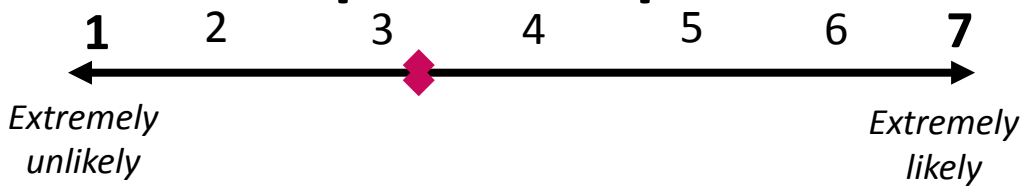
This can make your home feel significantly warmer and more comfortable. (comfort)

This can have significant health benefits for occupants. (health)

A recent survey showed that the majority of people would take up the scheme. (social norms)

1. Overall likelihood to participate

Mean likelihood to participate:



Significant predictors:

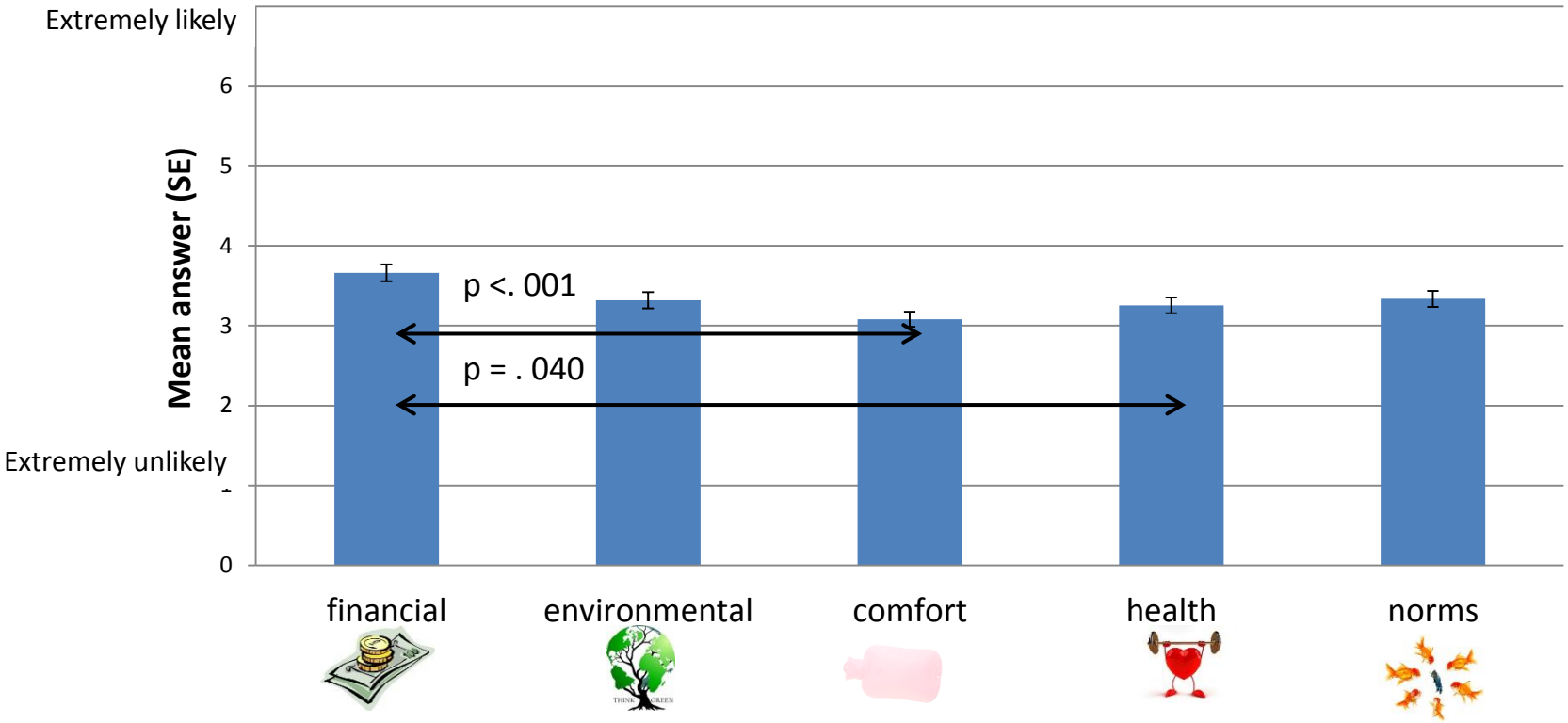
- Factors:
  - Higher likelihood if existing wall insulation
  - Higher likelihood if owner-occupied
  - Likelihood higher with younger age
  - Higher likelihood amongst males
  - Higher likelihood amongst those with University degree
- Covariates (5-point Likert)
  - Higher likelihood amongst those with greater trust in energy supplier
  - Higher likelihood amongst those with greater climate change concern

Non-significant predictors:

- Factors: Income (7 cat.), having switched energy supplier yes-no, having a disability yes-no, urban yes-no, gas central heating yes-no,
- Covariates): locus of control, home expensive to heat, home hard to heat / maintain warm (p = .093)

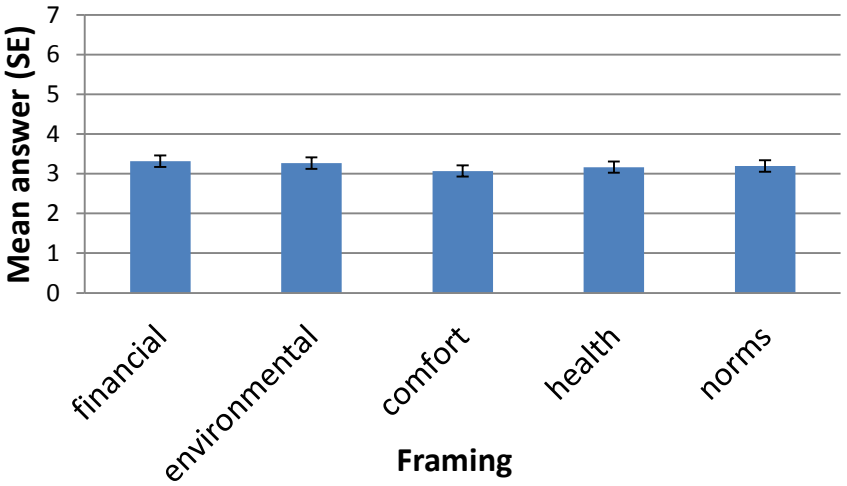
GLM: Adjusted R^2 = 9.7%

2. Framing effect

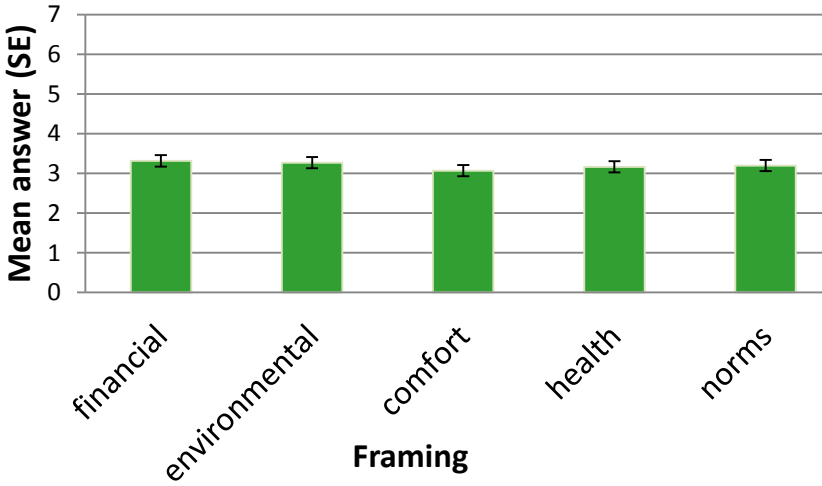


Univariate ANOVA: $F(4, 1997) = 4.43$, $p = .001$, partial Eta2 = .009
Posthoc tests with Bonferroni correction

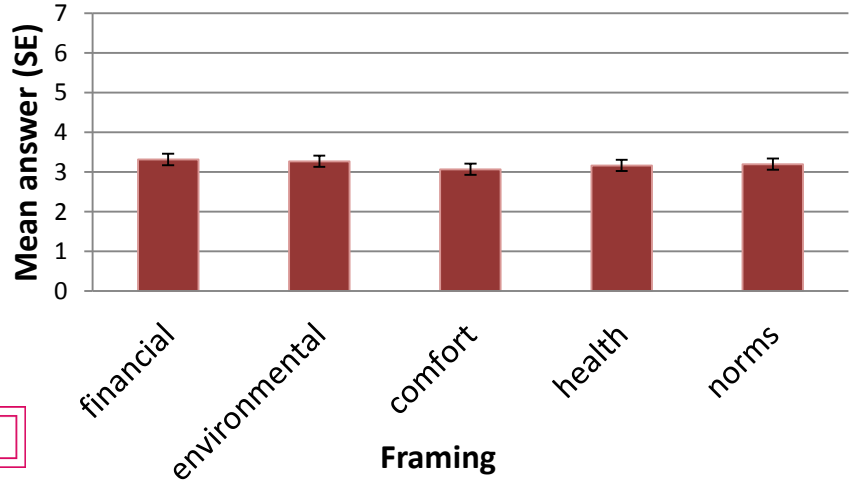
3. Framing effect in subgroups



Subgroup Age over 55: no framing effect



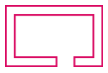
Subgroup concerned about climate change: *comfort lower than financial benefits*



Subgroup home hard to heat / maintain heat: no effect of framing

Discussion

- Overall interest not high
  - Wilson (2008): Retrofit occurs when other renovations are necessary
- Financial frame associated with higher uptake than health or comfort framing
  - Mirrors findings from focus groups and surveys
  - But: often, financial savings very small and payback periods long
    - Financial schemes can go wrong - Green Deal UK
- Trust in energy supplier positively associated with uptake
- Effect of combined frames?



Thank you!

Questions?

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