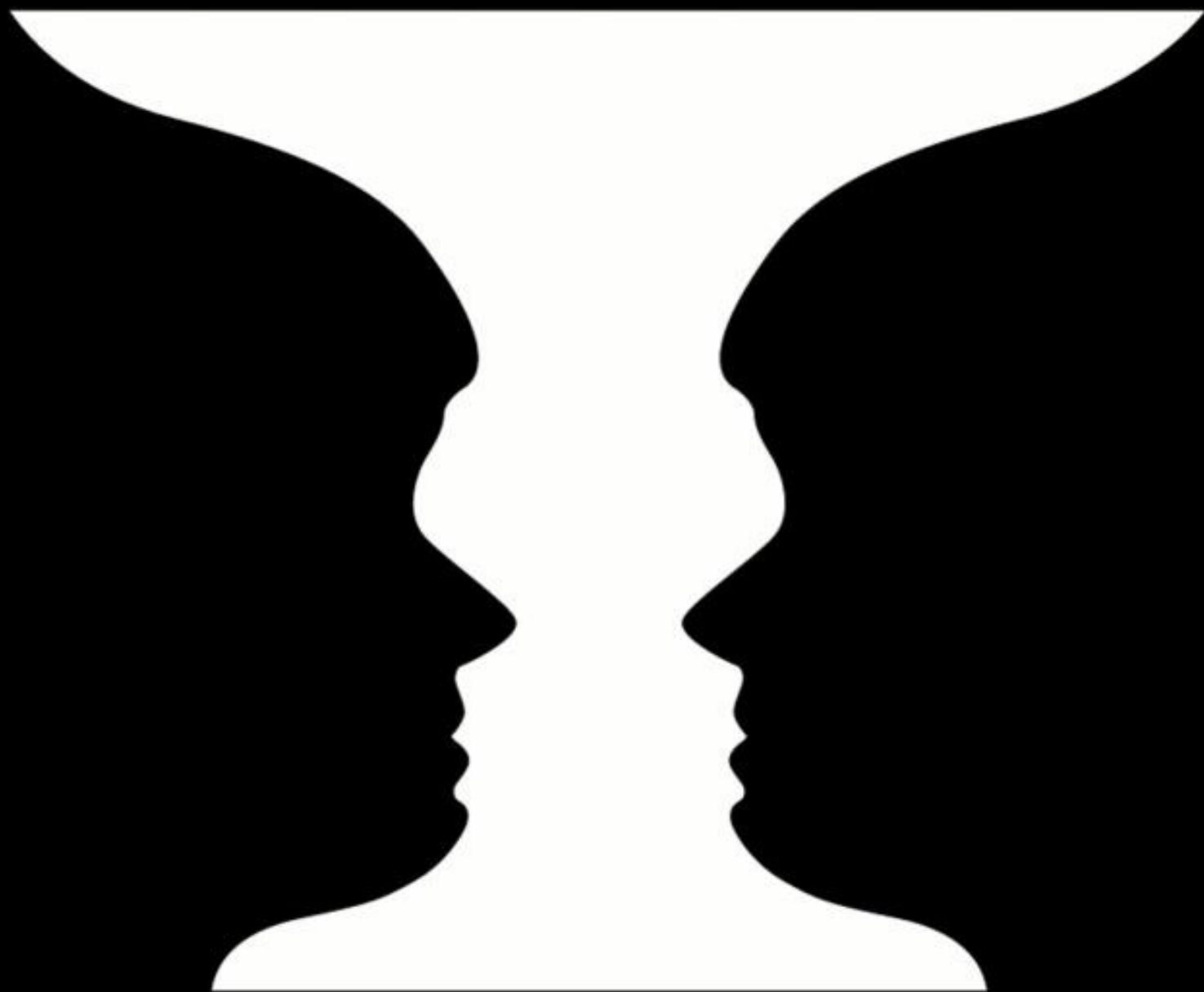


Energy System Integration

A psychological perspective

Geertje Schuitema



The role of consumers in ESI – Part 1

- Energy behaviour
 - Curtailment behaviour



The role of consumers in ESI – Part 1

- Energy behaviour
 - Curtailment behaviour
 - Efficiency behaviour

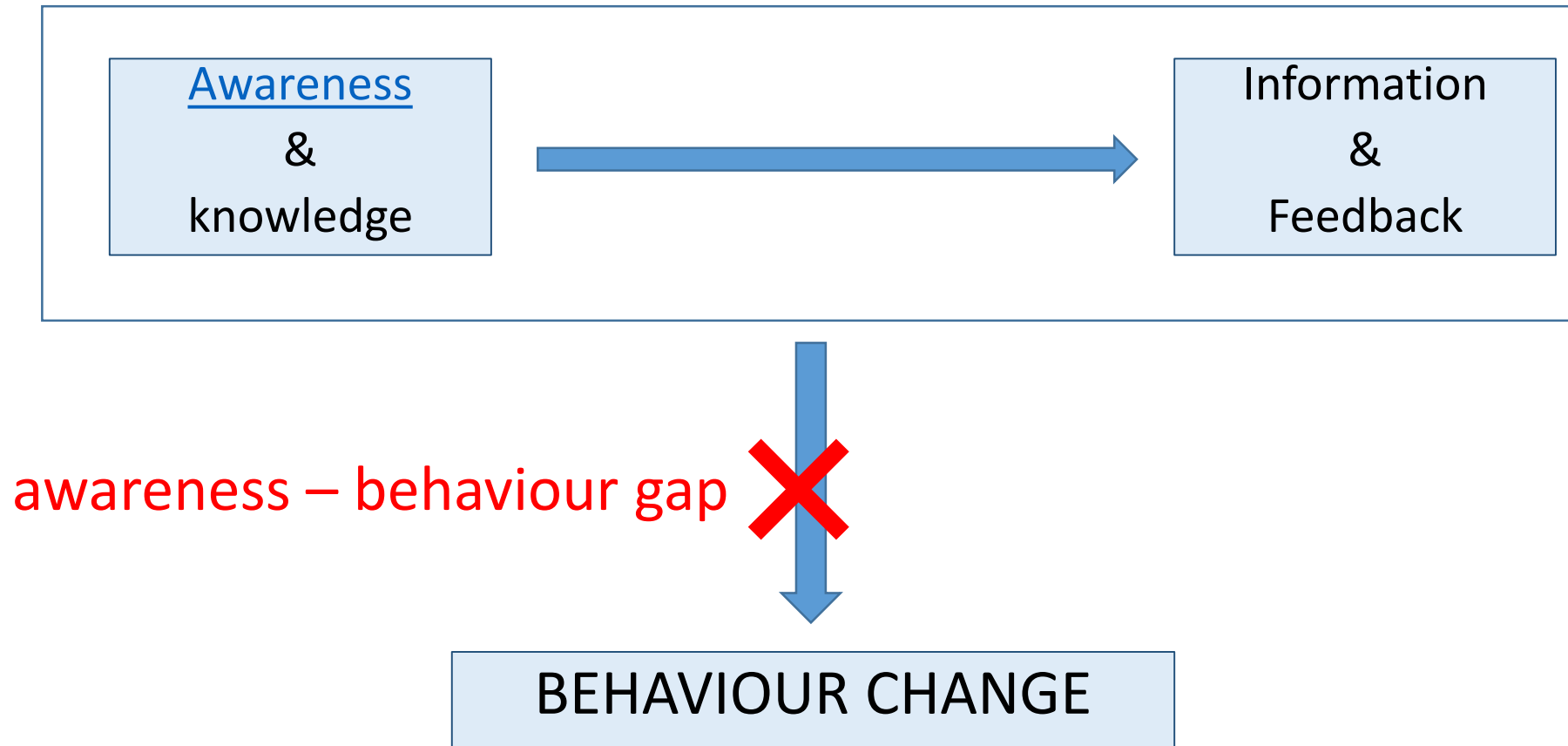


The role of consumers in ESI – Part 1

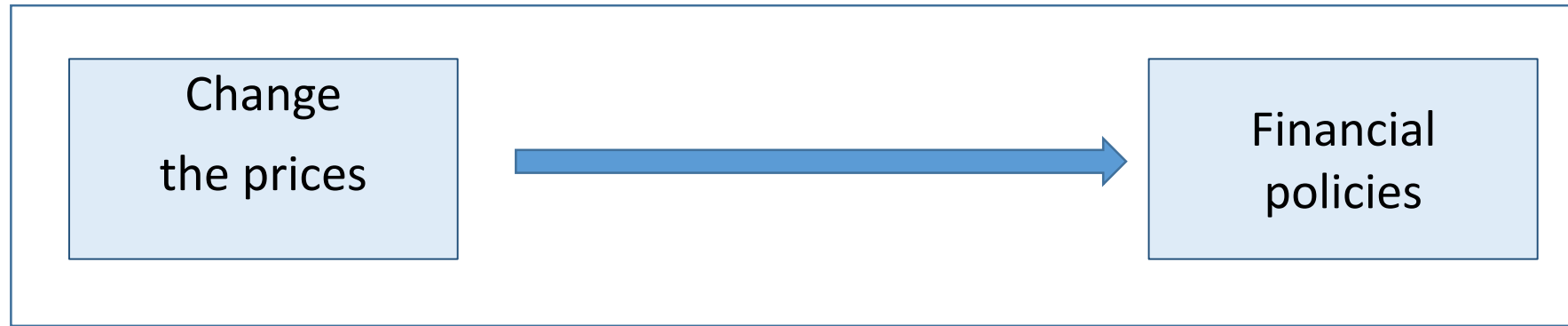
- Energy behaviour
 - Curtailment behaviour
 - Efficiency behaviour
 - Flexibility behaviour



Changing consumer's energy behaviour?



Changing consumer's energy behaviour?



can be effective... ✓ ✗ ... but often not

BEHAVIOUR CHANGE

LOWER-COST
HOURS

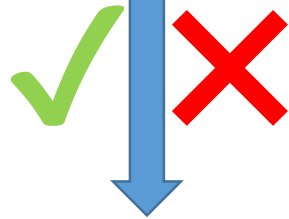


3-6 P.M.
HIGHER-COST
WEEKDAY
HOURS

Changing consumer's energy behaviour?



Effective if you give them
no choice...



.... but people are likely to resist...

BEHAVIOUR CHANGE



The role of consumers in ESI – Part 2

- Acceptance
 - In-house technologies



A different way of communicating



Online survey in Denmark (N= 1,165), Norway (N=1,020) & Switzerland (N=1,251)

opt-in

opt-out

neutral

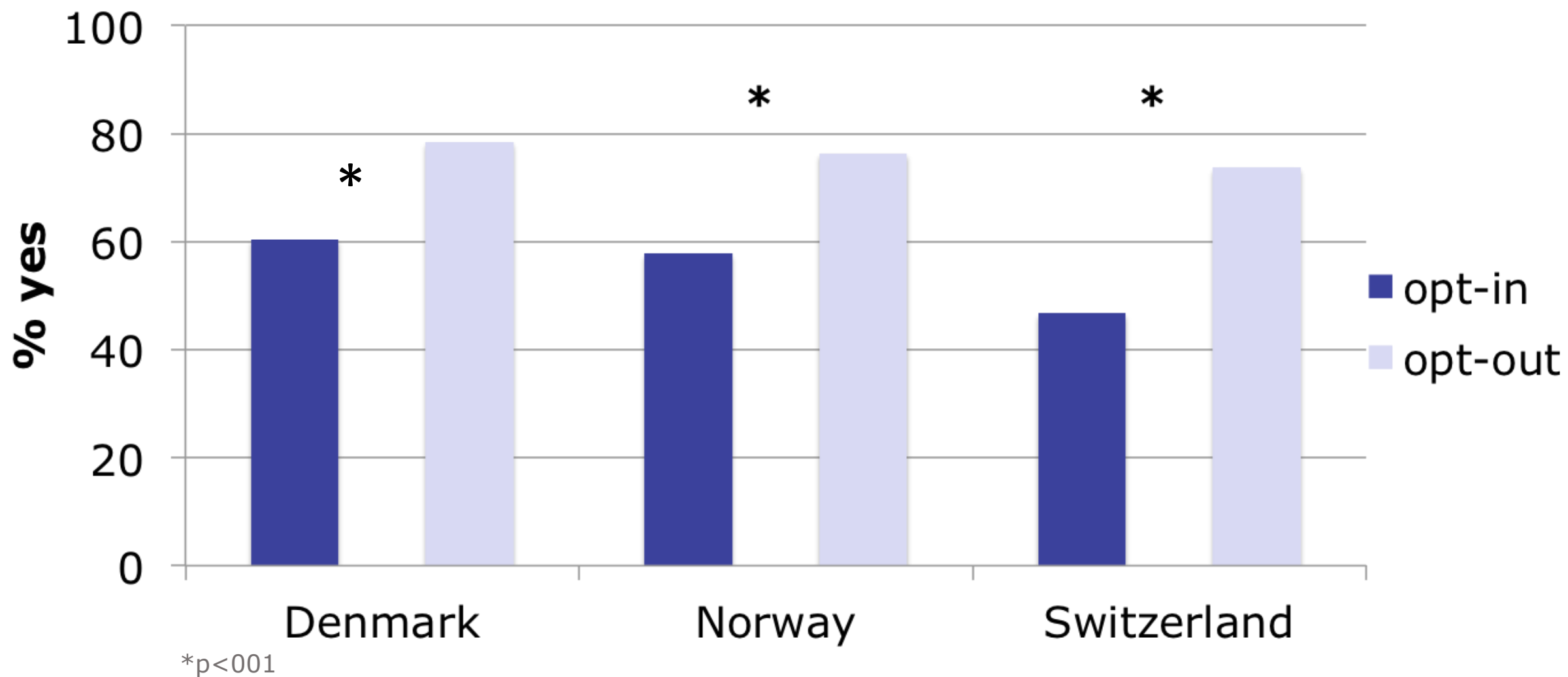
Short description smart grid + upgrade heat pump with remote control

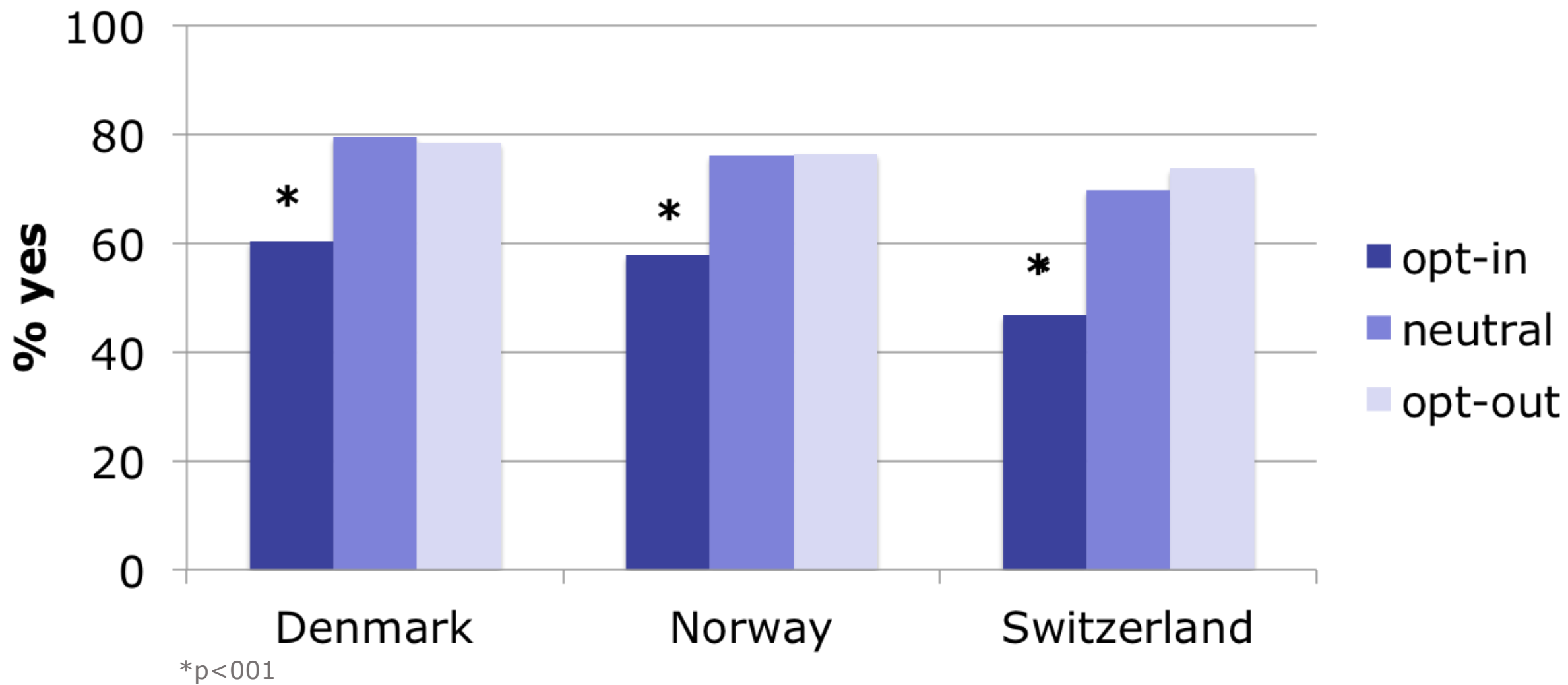
☐ yes, I want (...)

☐ no, I do not want (...)

☐ yes, I want (...)

☐ no, I do not want (...)

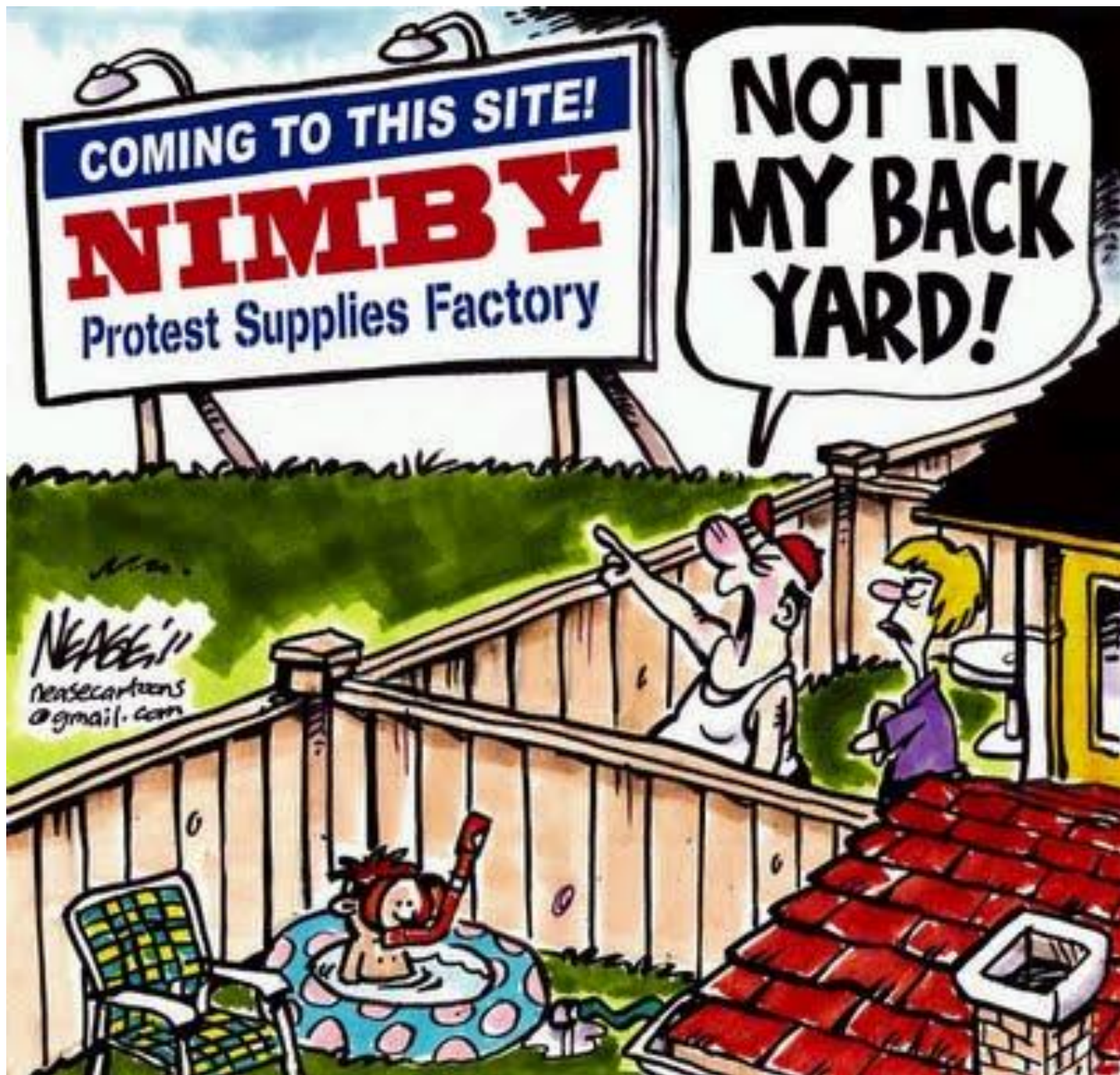




The role of consumers in ESI – Part 2

- Acceptance
 - In-house technologies
 - Energy infrastructure





Understanding public responses

No single cause of community objections

- Perceived cost and benefits:
 - Negative impacts and lack of positive benefits
 - Distributional injustice
- Lack of trust in the developer and decision-makers
- Procedural injustice
- Disruption to place attachments and place-related identities

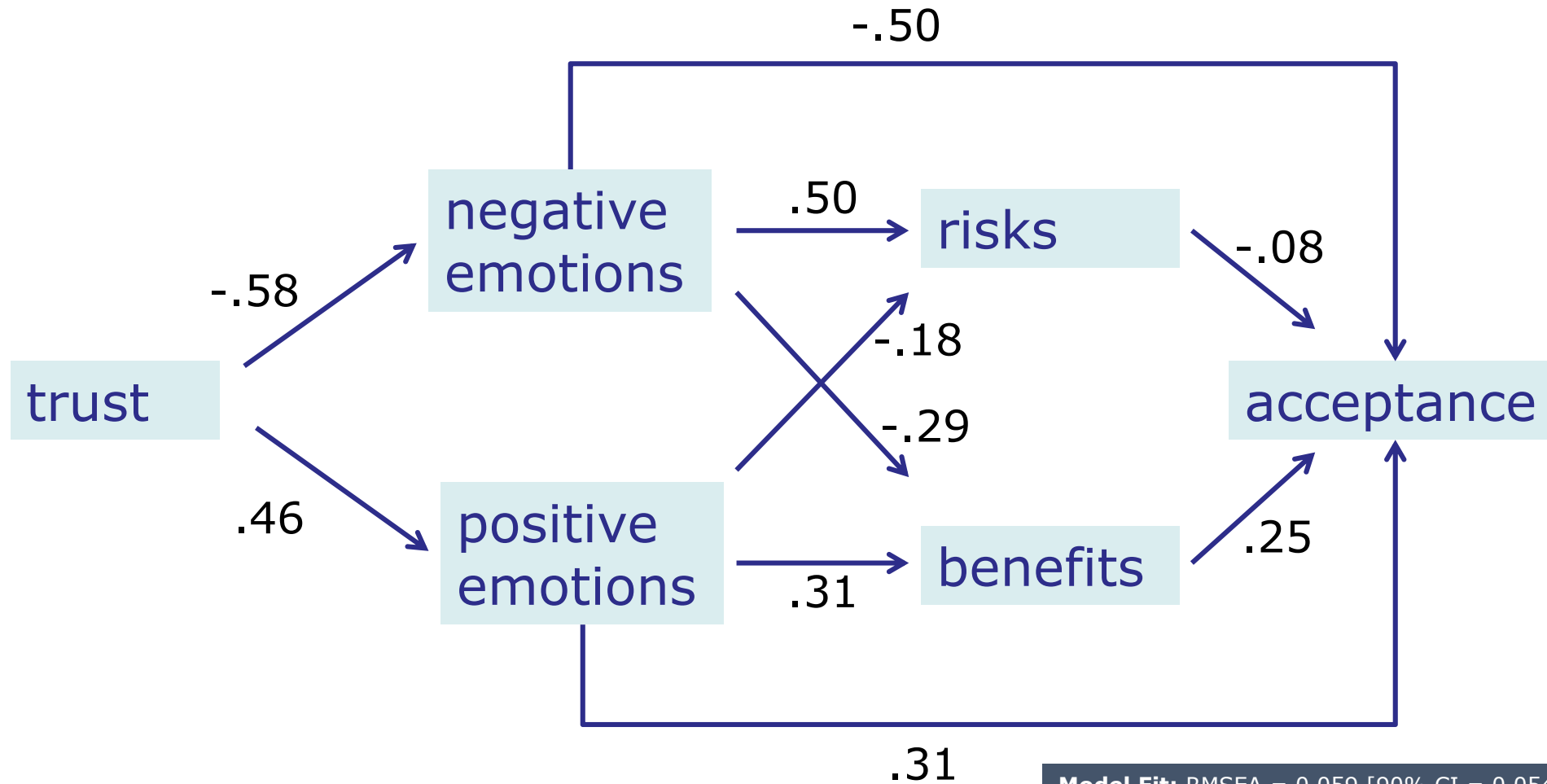
Relative importance of each varying by context

The role of consumers in ESI – Part 2

- Acceptance
 - In-house technologies
 - Energy infrastructure
 - Policies



Public acceptance of Irish water charges



Roderigues-Sanches, Schuitema & Claudy,
under review

Model Fit: RMSEA = 0.059 [90% CI = 0.054-0.064]; SB- $\chi^2 = 723.028$, df = 261; $p < .001$; Normed $\chi^2 = 2.77$; NFI = 0.935; CFI = 0.943
Variance explained: R^2 acceptance = .80
Full mediation: trust on acceptance by emotions and risk and benefit perceptions

Concluding remarks

- Consumers play an important role in Energy System Integration
 - Don't ignore them: public opinion may turn against you
- Consumer behaviour is complex
 - They often don't behave "rationally" or "straightforward"
 - "irrational factors"
- What is best from a policy/ technical/ economic point of view, is not always best from a consumer's point of view.

Questions?