



Horizon 2020 project

Understanding Acceptance of Heat Demand Response

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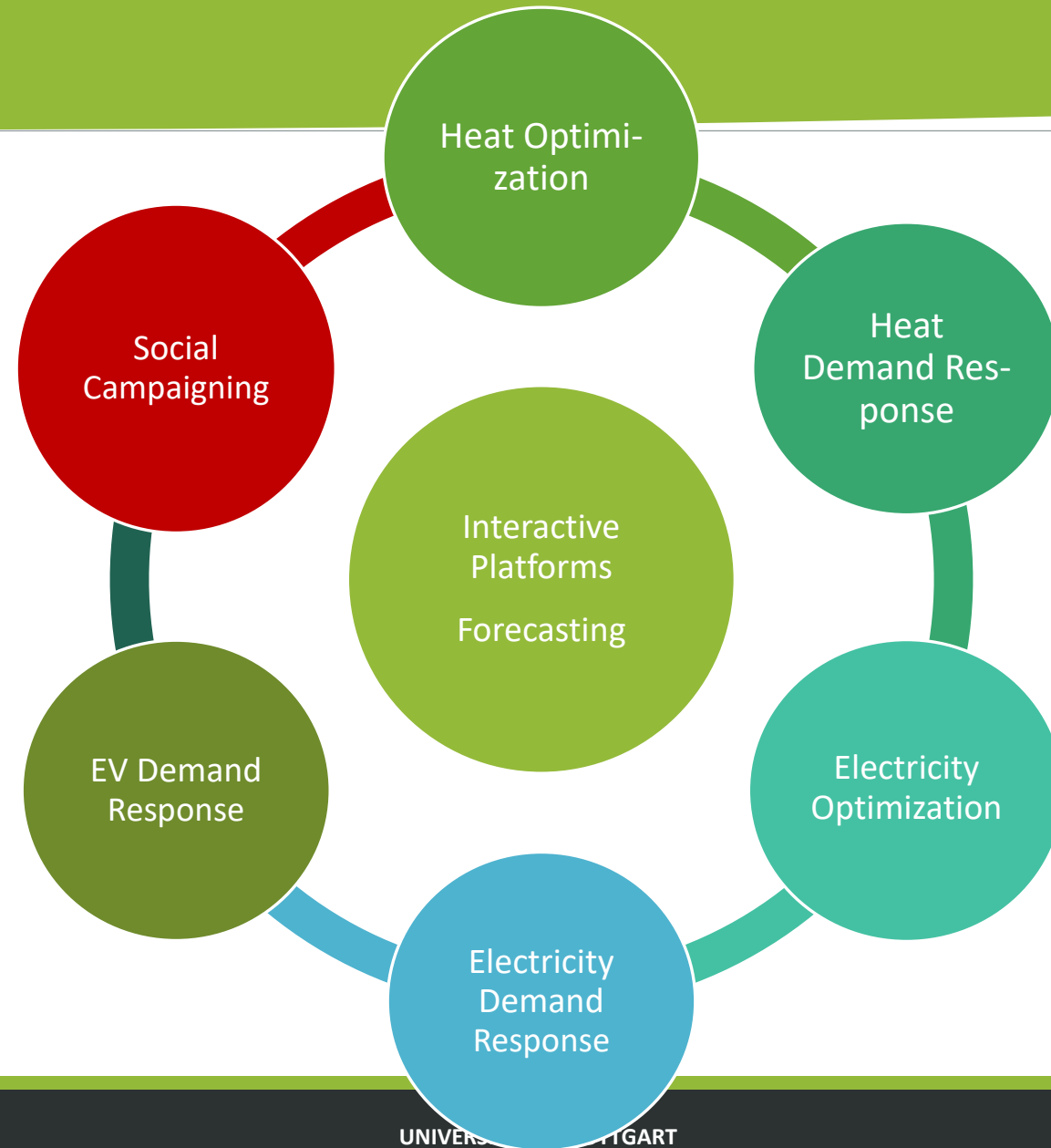
REnergetic – Creating “Urban Energy Islands”



- **Space:** a geographically delineated area
- **Energy:** highly self-sufficient from local renewable sources; all energy vectors
- **Society:** autarchy vs. responsibility
- **Psychology:** communication toolbox for trust
- **Organization:** REC or EC with less formal underpinning
- **Economy:** Benefits beyond profit max, min profit as requirement
- **Regulation:** inside current or expected regulation



REnergetic – Solution Components



Heat Demand Response

- =: Temporarily increase or decrease room temperature in response to a requirement on the heat supply side
 - Test case: Supply of waste heat „for free“ in early morning hours
 - Strategy:
 - Automated „pre-“ floor-heating in the early morning hours
 - Shutting down heating in the mornings between 8-10 by local heat network provider through manipulating thermostats
 - People can overrule
- ➔ inhabitants acceptance needed!

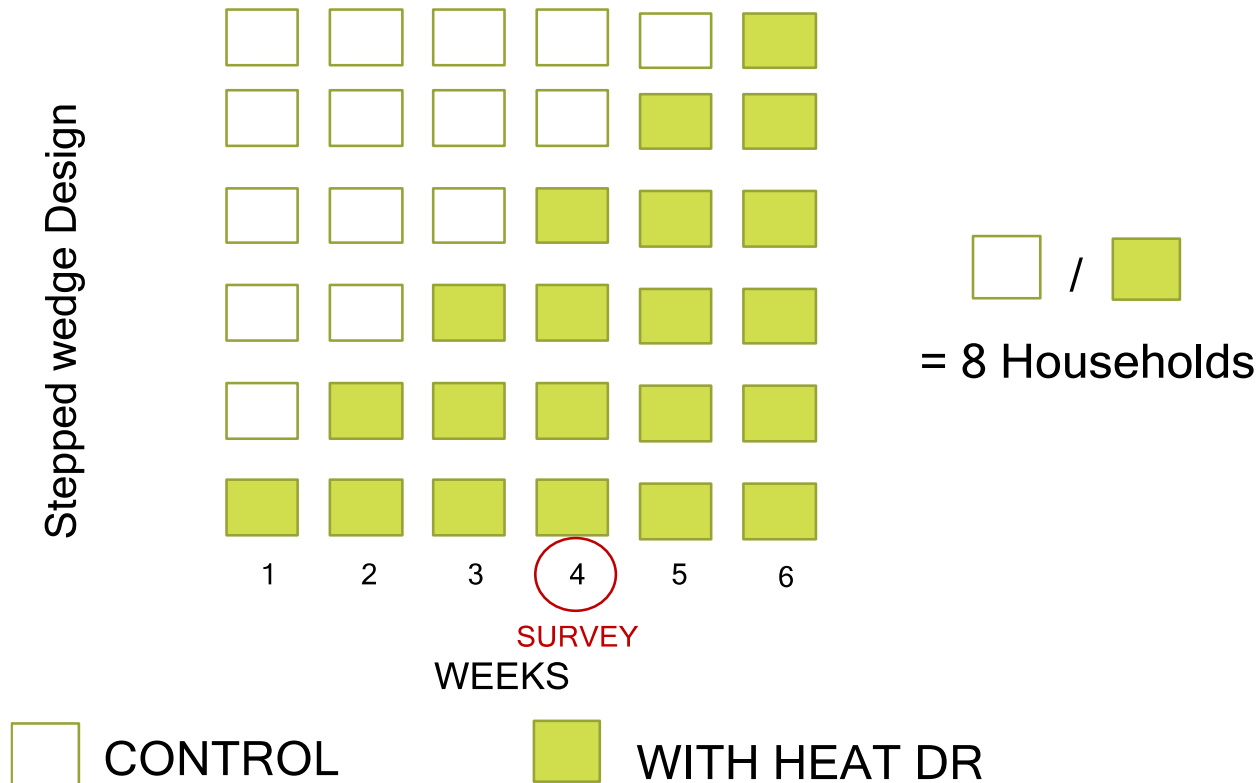


Heat Demand Response Experiments

1. HeatDR behavioural experiment in RENergetic pilot site Nieuwe Dokken Ghent (origine of use case) → specific acceptance
2. HeatDR survey (emulating the same use case) → technology acceptance model



1. HeatDR Experiment Gent: Step-Wedge-Design



- N= 48
- Intervention introduced „step-by-step“
- Inhabitants turn from control group to intervention group
- Helps to control time-based changes (e.g. external political events, temperature) for low number of participants
- Survey at week 4



Intervention

Individualized Flyer (THU)



WHAT IS THE COMMUNITY HEAT INNOVATION?

We aim to introduce smart scheduling into our heating system. This innovation enables an increased use of sustainable waste heat, reducing the use of fossil fuel sources for heating in our district.

Turn the page for further information
→

Want to be a part of this?

Scan the QR Code on top or contact Lieven directly: NUMBER

ONLY TOGETHER WE CAN MAKE HEATING
MORE SUSTAINABLE

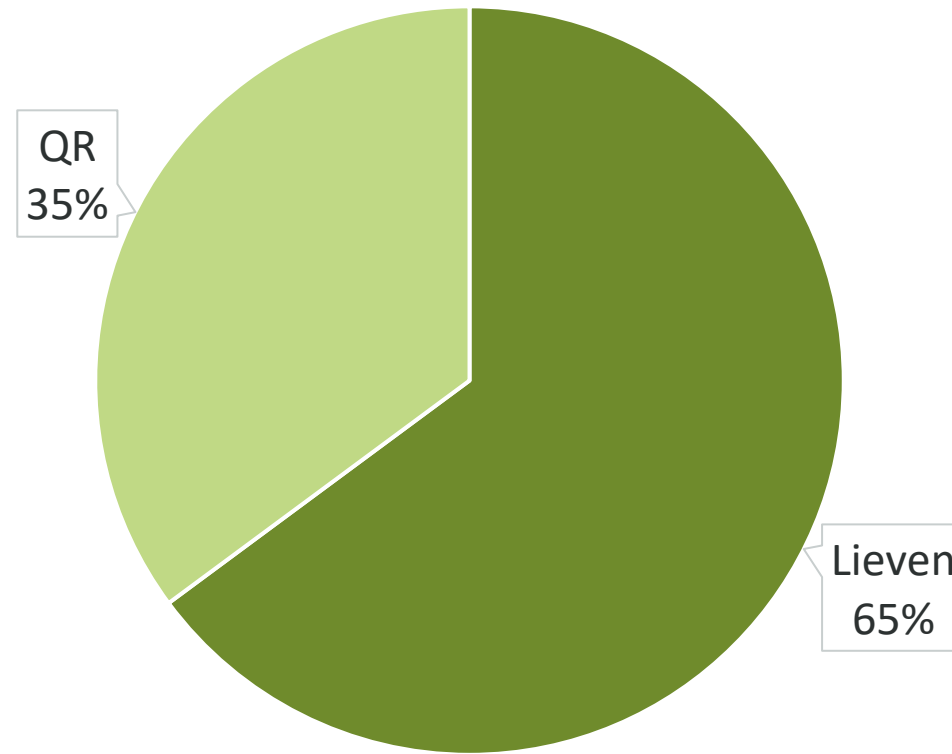


„Lieven Joker“ (MO)



Results: Agreement

Agreed Participants: 37 households



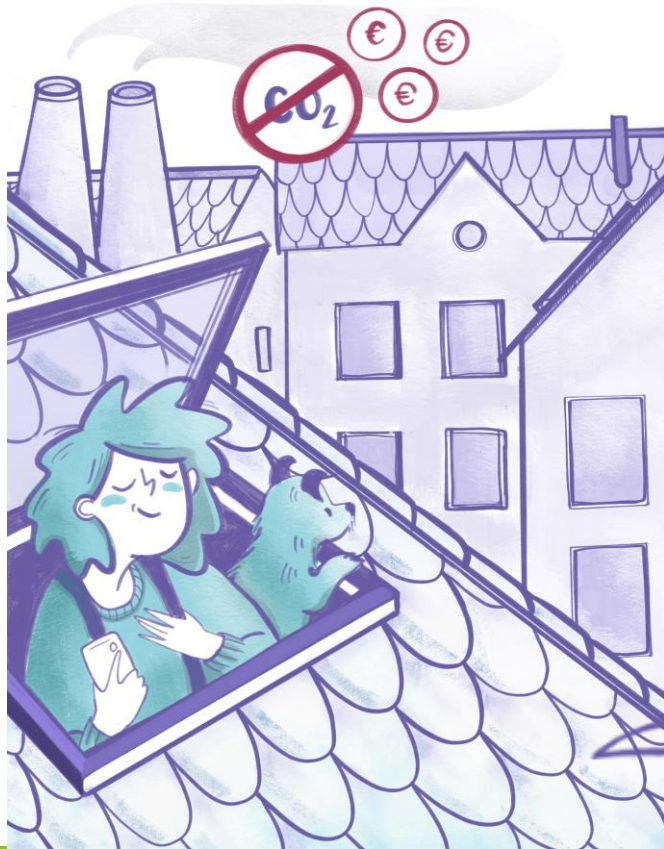
2. HeatDR Survey Experiment

- Panel participants from 7 countries, 400 per country
- Understanding the relevance of predictors of a technology acceptance model on behavioural intentions via a questionnaire



Survey Experiment: Setup

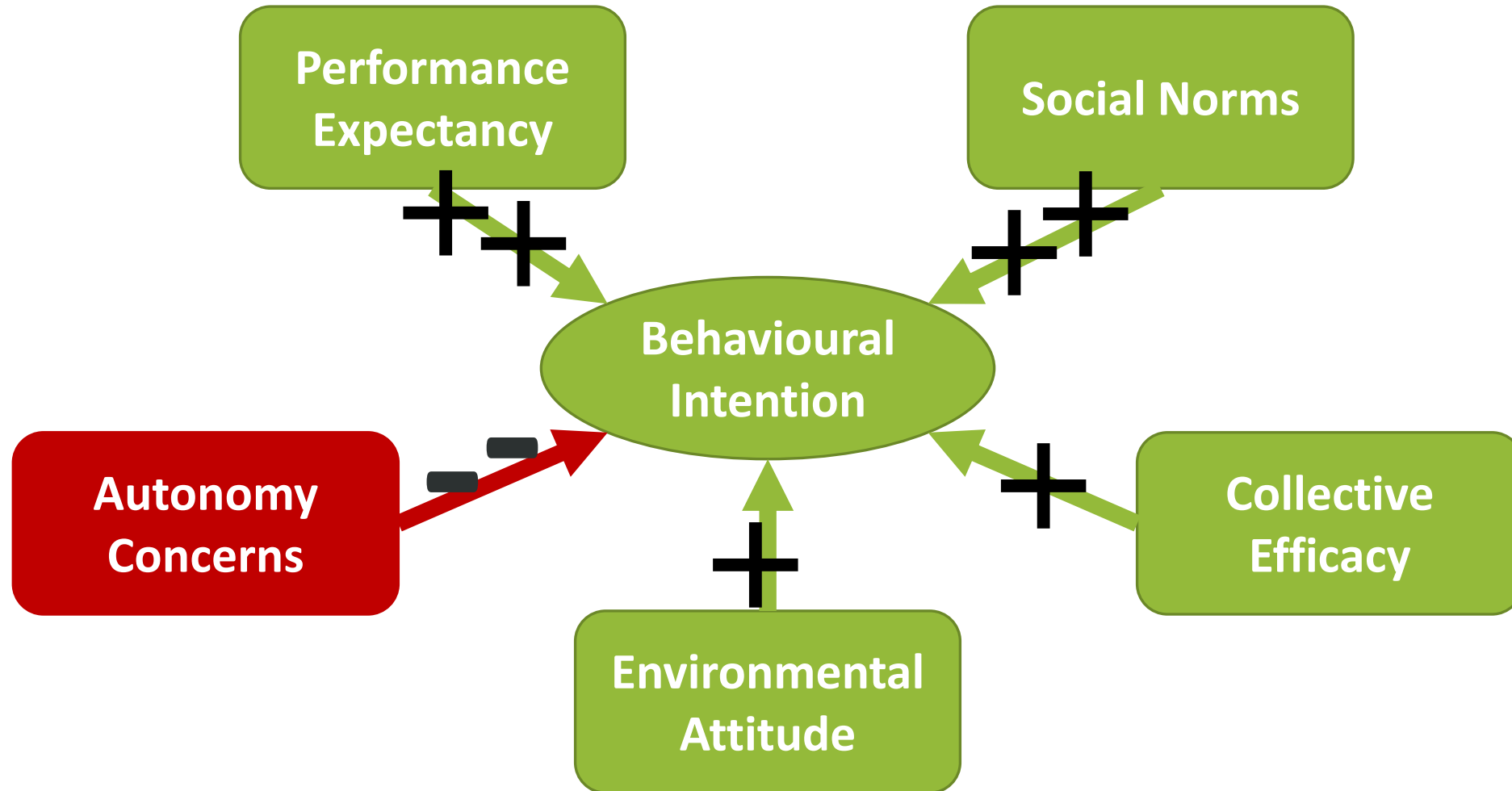
Alice think it's her duty to participate in automatic temperature adjustment.



I can prevent climate change
and avoid losing money!



Results: Technology Acceptance



Conclusions

- Trusted and personal relationship counts!
- Frame it collectively!
- Understand and use social norms in communication!
- Technical soundness must be transparent!






Thanks for your attention

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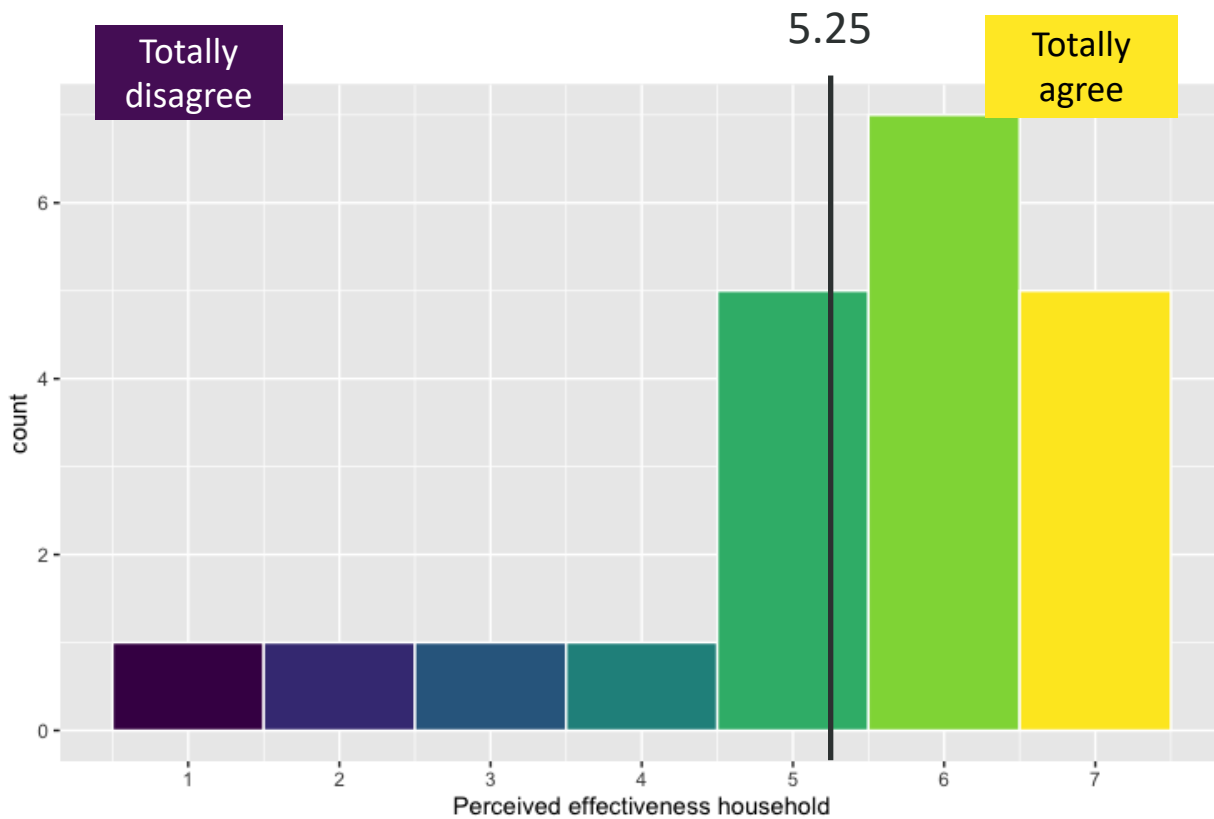
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Results Survey (n=21, female: 33%)

„We – as a household – can make a big difference ecologically by cooperating in a smart scheduling system with our heating“



„We – as a New Dokkens Community – can make a big difference ecologically by cooperating in a smart scheduling system with our heating“

