Empowering climate-sustainable food shopping: a smartphone app

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BACKGROUND

The behavioural challenge:

- Diet change is critical for net-zero [1].
- Many people value climate sustainability, but fail to act accordingly [2-3].
- People lack knowledge and skill for selecting climate sustainable options [4-5].
- Lack of self-efficacy can lead to disengagement [6].

The ethical challenge:

- Behaviour change approaches often disrespect individuals' autonomy. Such interventions prioritize behavioural targets rather than an individual's specific values and priorities and apply techniques to influence (motivate, pressure) people to align with top-down definitions of targets. [7-9]
- To respect autonomy is to *empower* people with the ability (knowledge, skill, opportunity) to self-determine behaviour [7-9].

Objective

- Develop an app that provides feedback on a household's grocery foodprint* through data visualization.
- Investigate whether such a design can empower people in a transitions to a low-footprint diet.

** Carbon footprint of dietary products*

METHODS

Development purchase feedback app.

Pilot study

- 16 households.
- 3 weeks recording receipts with app (assess foodprint change). Before and after survey (assess knowledge, self-efficacy, intention to change, spill-over). Experience interview.

RESULTS

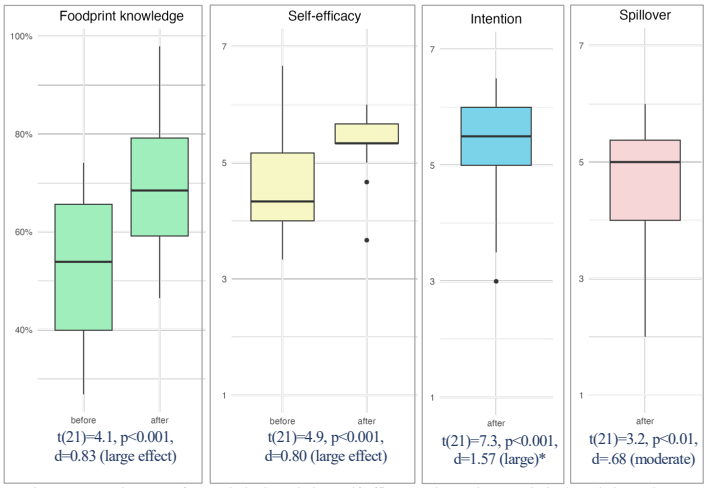

Figure. Composite scores for Foodprint knowledge, Self-efficacy and Intention. Foodprint knowledge: values reflect aggregated test scores from 2 quizzes. Self-efficacy and Intention: values range from 1 (low) to 7 (high) self-efficacy. * Intention and spill-over are compared a neutral rating of 4.

We recorded a significant impact of study participation on foodprint knowledge, perceived self-efficacy, and an intention to reduce foodprint in the following months (large effects). No direct impact on foodprint in actual purchases was recorded.

Experience feedback

Participants found the application fun and easy to use. The data in purchase feedback (particularly the wordcloud) was thought provoking, memorable, sometimes surprising and it sparked curiosity to learn more. Some participants perceived gamification in the steps of purchase monitoring (shopping, getting the receipt, scanning, receiving feedback, investigating). Many participants found the study period too short to allow changes to their purchase habits and would have liked for it to continue longer. People would like the ability to dig into the information to understand why some products had high or low foodprints. Some participants asked for the app to consider more dimensions of sustainability to support their decisions.

CONCLUSIONS

- The study showed potential for the application to empower low foodprint diets.
- By sparking conversations, the impact of the application can extend beyond the individual users.

Future

- Longer study periods are needed to assess whether empowerment leads to actual changes in purchase foodprint.
- Collaborations with environmental charities could be pursued for effective deployment.

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