

Decide, adopt... then what?

The discontinuance of low carbon digital products and services

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1 Background

Digital consumer products and services exist which offer low carbon alternatives to mainstream consumption practices (fig. 1). Innovation literature predominantly focuses on processes for encouraging adoption¹, but little is known about what happens next! We contribute new insights on the factors influencing **post-adoption decisions** of discontinuance for low carbon digital consumer innovations across domains: **mobility**, **food**, **homes**, **energy**².



Fig. 1 Examples of low carbon digital innovations

Using the well established *Diffusion of Innovations* theory¹ as a framework (fig. 2), we investigate a range of **variables** hypothesised to impact the post-adoption decision to discontinue this important class of innovations.

Individual's characteristics, Innovation attributes, Contextual factors, Communication and social influences

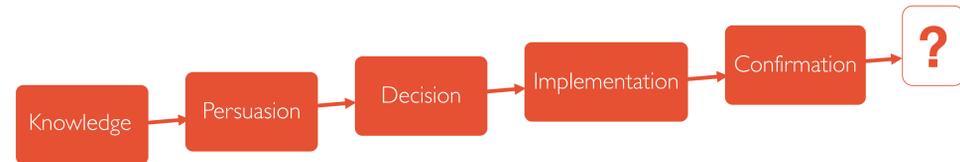


Fig. 2 Stages of the adoption decision process from the Diffusion of Innovations theory

2 Methodology

Repeat measures online survey with 995 UK consumers in 2019 (Wave 1) and 2020 (Wave 2) on the adoption of 16 innovations. Participants first answered questions on adoption experience of all 16 innovations and were then allocated to answer questions regarding one specific innovation. We used a quota sampling design in Wave 1 to target 100 adopters and 100 non-adopters for each innovation.

Participants were then allocated to the same innovation in Wave 2 and asked the same blocks of questions. Additional questions were included to capture insights on the impact of Covid-19. Capturing temporal changes between Wave 1 and 2 (fig. 3), we compared responses of participants who discontinued an innovation with 1) participants who continued adoption and 2) participants who remained non-adopters*.

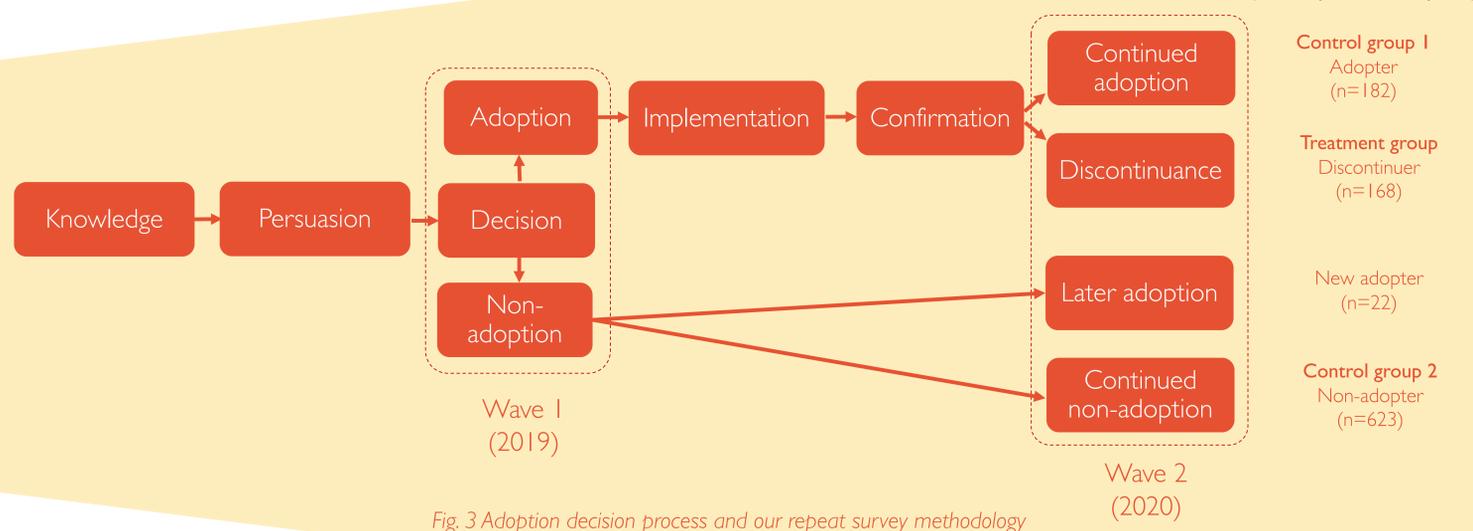
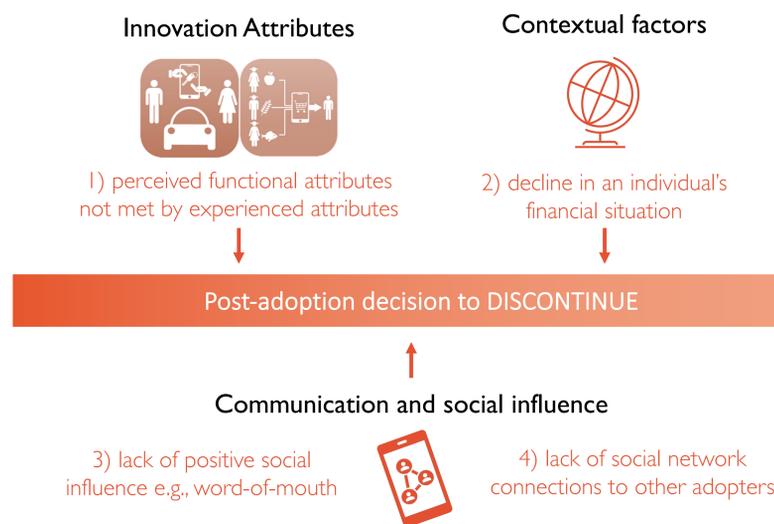


Fig. 3 Adoption decision process and our repeat survey methodology

3 Results

We found discontinuance to be more common for services compared to products, as well as being associated with the following factors:



*For characteristics considered stable over time (e.g., personal values), we used absolute values from Wave 2 to conduct χ^2 tests, independent t-tests and Mann Whitney U tests. For characteristics considered to change over time, we used paired t-tests to compare change in mean difference for items between Wave 1 and Wave 2. Significance testing for change is based on the null hypothesis that change is not significantly different from zero ($p < 0.05$). We then conducted independent t-tests comparing the absolute differences between the treatment group and two control groups.

4 Conclusion

To aid diffusion of low carbon digital products and services...overcoming discontinuance is crucial! Experience of an innovation and its attributes are important determinants of post-adoption decisions. Notably, we found discontinuance of services more likely than products, highlighting the vulnerability of service-based innovation providers and the need to focus efforts on customer retention strategies. We also discovered the importance of a range of social influences and the exposure to other adopters to provide reinforcing societal messages encouraging retention and continued adoption of an innovation. There is a need to support the use of communication channels to spread positive messages and increase visibility and salience of an innovation. For example, encouraging adopters to create trusted high quality online content about attributes through carefully structured review systems and feedback forms. Findings highlight generalisable insights for industry and policy regarding issues that need addressing to overcome discontinuance and help towards a successful low carbon transition.