

Trying on change – Trialability as a change moderator for sustainable travel behaviour



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ABSTRACT

Based on Rogers' diffusion of innovations theory and an in-depth analysis of two case studies regarding travel mode shift, the paper examines how to support people's adoption of new travel behaviour. A key element for encouraging adoption is enabling people to trial behaviour in order for them to embark on the travel behaviour change process. The analysis indicates that trials could be used as a strategic tool, but need to be carefully designed to help the participants through the different stages of the behaviour change process. Fundamental elements need to be considered, including recruitment principles, duration of the trial, and the type of support offered. The after trial set-up stands out as especially important to consider, as it affects the conditions for the changed behaviour to be maintained by the participants after the end of the trial.

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1. Introduction

Sustainable urban mobility has been identified as one of the major challenges of the future (Audenhove et al., 2014). Achieving this goal requires a move away from reliance on single-occupancy, fossil-fuelled vehicles through a combination of development of new solutions, adoption of these solutions, and changes in people's everyday travel behaviour. To promote changes in travel behaviour away from the use of private cars several different types of initiatives have been tested (for an overview see e.g. Batty et al. (2015), Cairns et al. (2008) and Santos et al. (2010)). These initiatives typically focus on providing information and persuading people of the benefits of adopting new travel habits or choosing other modes to create a voluntary shift in behaviour. Some initiatives also feature more coercive measures such as economic disincentives or incentives. Examples include travel awareness campaigns (e.g. Garvill et al., 2003), improved travel information and planners (e.g. Skoglund and Karlsson, 2012), and providing personalised travel plans (e.g. Brög et al., 2009). Positive, though limited, results are reported, even if reviews of such interventions find that the evidence base for the effectiveness of these interventions to reduce car use is weak (Bonsall, 2009; Graham-Rowe et al., 2011;

Scheepers et al., 2014). Despite the fact that people often have positive attitudes and intend to change, it seems difficult to transform intentions into sustained practice.

The process of incorporating an innovation into on-going practice is described by Rogers (1995). An innovation may be any idea, practice, or object that is perceived as new by the person, for example new travel behaviour. In this adoption process, the person seeks and processes information in order to reduce uncertainty about the advantages and disadvantages of the innovation. Going through the process means passing through five stages: from initial knowledge of the innovation, persuasion about its benefits, decision to adopt, implementing the innovation, to confirming the decision (Fig. 1). The initiatives described above aim to affect factors at the beginning of the process, but to pass into implementation Rogers describes further aspects of importance. The innovation must for instance be perceived to have certain characteristics. It should have a relative advantage compared to what is being done today, it should be compatible with one's needs and values, not be too difficult to understand or use, its effects should be easily observable, and it should be possible to try the innovation on a limited basis to dispel uncertainty about the idea and how it works under one's own conditions.

The latter characteristic, denominated 'trialability' by Rogers, is important at the decision stage, where a trial of some kind precedes the adoption decision. A trial can take place in the head of a person by imagining the outcome of adopting the innovation or in the real world as a test of the innovation itself. However, when

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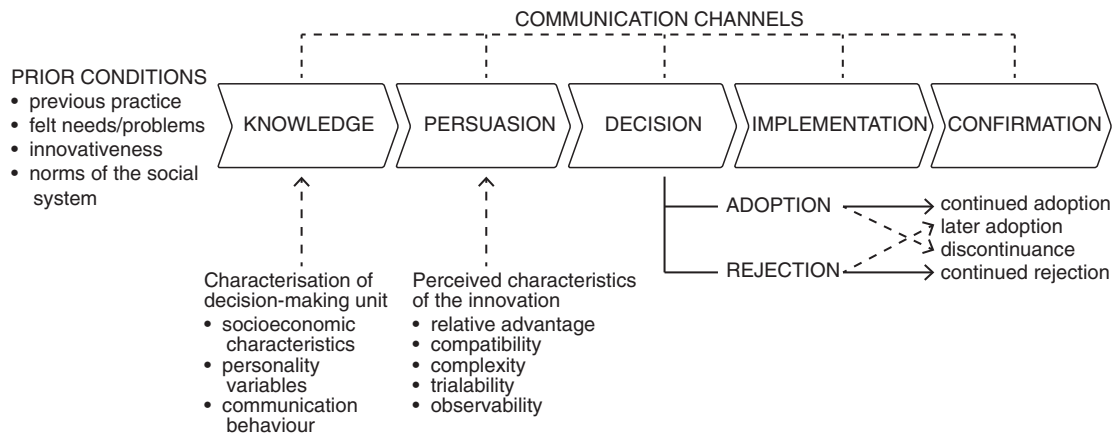


Fig. 1. The innovation-decision process. Adapted from Rogers (1995).

the innovation is an idea, like that of new travel behaviour, both types of trials can be hard to perform. It is difficult to imagine the everyday consequences of switching to a new mode of travel, and there are many barriers to trying it out on a partial basis without fully adopting it.

Attempts to create trialability of car to bus mode change have been made by handing out free bus passes to participants in studies (see e.g. Abou-Zeid and Ben-Akiva (2012), Fujii and Kitamura (2003) and Thøgersen (2009)). The idea is that a free bus pass can reduce the economic barriers of trialling mode change. These studies report small increases in bus ridership, but no real decrease in car use. Abou-Zeid and Ben-Akiva (2012) conclude that a trial pass works for cost-conscious travellers but many other barriers beyond cost remain to be removed to promote a shift away from the private car (Thøgersen, 2009). Nevertheless, the studies indicate the potential of trials in the context of sustainable personal mobility, and the value of exploring how trials can be used to address other barriers than cost.

A trial aspect was included in two successful travel behaviour change research studies recently conducted in Gothenburg, Sweden:

- (A) The *Testcyklisterna* project, which offered participants a chance to try specially adapted bicycles, targeted at meeting many of the issues connected to using cycling for everyday transport. During the project participants replaced 40% of their car journeys with bicycling, and reported practical advantages of cycling over driving, as well as mental and physical health improvements.
- (B) The UbiGo travel broker service project offered participants the chance to test a new solution for mobility-as-a-service (MaaS; see Heitanen (2014)) to reduce reliance on private cars. The results show a self-reported reduction in car driving of 50%, and the proportion of participants who were very satisfied with their travel rose from 19% before to 51% at the end of the trial.

By comparing and analysing the trialling aspects of these two studies, this paper aims to examine the value of enabling people to trial behaviour in order for them to embark on a travel behaviour change process, and also to discuss how such a trial should be designed to provide the best preconditions for change.

The paper is structured as follows. Firstly, the comparative analysis that forms the basis for the findings is described, including a short account of the two trial cases analysed. Secondly, the findings of the analysis are presented, divided into three sections, the first of which describes the findings regarding the participants' need for a trial. Thereafter, the findings concerning the process of

adoption of the new behaviour during the trial are described and modelled, followed by the third section, which tries to identify the important elements in the organisation of the two trials that led to the participants' ability to trial the new behaviours. This is followed by a discussion of the findings in relation to related work, and regarding trials as a strategy for modal shift.

2. Methods

The results of this paper are based on a comparative analysis of the two cases, A and B, in which a trial was used to help individuals transform their intention to change their travel behaviour into reality. The two cases were compared with regard to the similarities and differences in participants' characteristics and motives for joining the trial, the characteristics of the barriers to carrying out the change, the effect of the trial on the behaviour in question, and the process of change. The set-up and organisation of the respective trial as well as travel behaviour during the trial were then analysed to determine which elements made them successful. Based on these, recommendations for future trial activities are discussed. The specifics of the two cases are described below.

2.1. Case A: *Testcyklisterna*

The *Testcyklisterna* project aimed to investigate whether the recent development of more transport-oriented bicycles and accessories, such as electric assist, freight bicycles, trailers, and adjustable shock absorbers, could help alleviate some of the factors that have been identified as inhibiting cycling and thus support the adoption of utilitarian bicycling (see for instance Heinen et al. (2010), van Bekkum et al. (2011) and Winters et al. (2011)). In the project, participants from seven municipalities in western Sweden were lent bicycles and accessories that suited their specific needs in the hope that this would enable them to replace car driving with cycling. In return the participants promised to replace three days' worth of car journeys with bicycling during a six-month period (April–October 2014).

2.1.1. The trial

Participants were recruited through advertisements in local papers and through channels available via the municipality. From the 400 applicants, the project team selected thirty-seven individuals to become participants. These were persons who had a high interest in changing their habits and who represented different demographics and travel needs. The trial started with an initiation meeting where participants met the project team and were guided regarding their choice of bicycle. They received assistance to

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