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Editorial: Triggers of behavioural change in an evolving world

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This special issue collects six papers that were presented at the 2015 IATBR conference, which took place in Windsor, UK. It also includes a resource paper from one of the conference workshops. All regular papers were selected by the guest editors and subsequently peer-reviewed in line with the European Journal of Transport and Infrastructure Research standards. Ultimately, 60% of submitted papers were accepted for publication.

The International Association for Travel Behaviour research (IATBR) is an interdisciplinary and cross-sectorial organisation interested in the study of travel behaviour. The triennial conferences of the association represent an important opportunity for dissemination of research which, often through the use of analytical modelling, hopes to answer important and timely questions in the field of travel behaviour, producing outputs aimed at supporting policy-making.

The papers in the present issue revolve around the general theme of behavioural response in different travel behaviour contexts. By using different analytical tools and data collection approaches, they all provide interesting answers to policy-relevant behavioural questions.

Two of the papers (Langbroek et al., Weiss et al.) focus on the compelling question of the behavioural and energy consumption implications of the introduction of electric vehicles (EV) for private use. Langbroek et al. focus on understanding the determinants of EV adoption in Stockholm, Sweden, by operationalising socio-psychological models. The authors argue that a change in attitudes and self-efficacy towards EV can be the output of a learning process through which potential users come to understand the benefits of EVs. They conclude that personal benefits and advantages resulting from adoption are deemed more important than social and environmental ones, suggesting that the former should be highlighted when promoting EV uptake. Weiss and colleagues focus instead on predicting behaviour and the change in demand for energy under different EV market penetration scenarios. A microscopic travel demand model is applied to simulate behaviour in a long-term and a short-term model. Male middle-age agents with high income and short commuting distances are found to be more likely to show interest in EV. When it comes to EV ownership, the authors find that in all of the market penetration scenarios young people are the least likely to own an EV, while retired people and non-commuters are most likely to be early adopters. In terms of implications for electricity supply, the authors conclude that EV uptake could only imply capacity problems at peak times for charging, which would be similar during weekdays.

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Behavioural change could be triggered by learning more about our own behaviour or the characteristics of the environment around us as well as by previous experiences. Rolim et al., Nguyen et al. and Carrel and Walker focus, respectively, on behavioural response to information, topological factors and past experiences.

Rolim et al.'s experiment involved providing bus drivers with real-time feedback about their driving style through on-board devices. A two-phase experiment including two periods in which drivers received information with a no-information time interval in between showed significant differences depending on whether information was provided. A particularly striking increase of undesirable driving behaviour, such as extreme breaks and accelerations, was shown to take place when feedback was suspended. This study highlights the role of real-time information as a strong nudging mechanism for bus drivers.

Carrel and Walker look instead at cessation of transit use. Negative experiences with the service, together with delays and transfer times, are shown to affect satisfaction with the service and the consequent intention not to travel by bus anymore. By making use of an online survey and a smartphone app, this study highlights the importance of using innovative data collection designs to more reliably measure behaviour and improve the potential of our models. Survey methods and their impact on the measurement of travel satisfaction are the main focus or the paper by Susilo et al., who collect the same type of information through tools as different as a focus group and a gaming app in eight different European cities and five national motorist networks. In line with Carrel and Walker, Susilo et al. found that in the case of road-based public transport, service attributes such as punctuality and reliability, as well as previous experiences, have an impact on journey satisfaction. Interestingly, the factors that correlated with travel satisfaction were different depending on the survey method used, with the exception of subjective well-being factors, showed no significant changes across survey methodologies. Moreover, the levels of satisfaction reported differed depending on the data collection method and on whether it was assessed on the main trip leg or door-to-door. These conclusions provide important insights for future travel surveys interested in capturing satisfaction.

A mixed data collection method is also adopted by Nguyen and colleagues, who develop a two-wave multi-day survey made up of a paper-based travel diary and a GPS application. The study aims to investigate the impact of topological factors on the elderly's travel behaviour. A mixed logit model is applied to investigate heterogeneity in mode choice behaviour, and its result highlight the importance of the geographic environment for mode choice, supporting the use of personal mobility vehicles to allow the aging population (especially in the context of Japanese newtowns) to be able to travel independently despite the topological challenges.

Finally, one of the four resource papers from the conference workshops is included in this special issue. In this paper, Imami, Eluru and Paleti focus on the use and functioning of the Citibike bicycle sharing systems in New York and on how environmental characteristics and land use can affect it. The analysis provides insights on the demand for the service, showing, for example, that larger flows were associated with proximity to public transport stations and job density, as the system was mainly used for commuting. There is also a focus on individual preferences for specific destinations, for example it is shown that bike sharing stations linked to longer cycling lanes and higher capacity were preferred. The analysis controlled for other variables such as weather conditions and day/time effects, providing an overall picture useful to guide the provision of bicycle sharing systems.

We believe this special issue provides an important snapshot of current thinking in the field.