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**Citation:** Ison, S. & Kaparias, I. (2016). Universities' Transport Study Group UK Annual Conference 2015. *Transportation Planning and Technology*, 39(1), pp. 1-2. doi: 10.1080/03081060.2015.1113664

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## **Transportation Planning and Technology**

### **Editorial**

#### **Universities' Transport Study Group UK Annual Conference 2015**

This issue of *Transportation Planning and Technology* consists of six selected papers drawn from the 47<sup>th</sup> Annual Universities' Transport Study Group Conference, held at City University London in January 2015. The UTSG Conference is for transport academics and researchers from UK and Irish universities and is 'designed to discuss research needs, research in progress and to give research students the opportunity to present papers on their work' ([www.utsg.net](http://www.utsg.net)). 101 delegates attended the conference, presenting 70 papers across 31 plenary and parallel sessions, and the authors of those were invited to have their papers considered for inclusion in this special issue. Those papers submitted were subject to a rigorous review process in the usual manner.

As with previous special issues the papers reveal the range of academic research within the UTSG community, with differing research approaches and areas of study. The field of transport studies embraces a wide range of disciplinary perspectives and this is reflected in the papers in this issue.

The paper by Imprialou, Quddus and Pitfield, seeks to predict the safety impact of an increase in the speed limit using condition-based multivariate Poisson lognormal regression. The basic tenet is that changes to the speed limit are considered to lead to proportional changes in the number of crashes, but also to their severity. As such, the paper examines the relationship between crashes and speed on UK motorways. The findings reveal that the occurrence of both single-vehicle crashes of all severities, and fatal or serious injury crashes that involve multiple vehicles, increases at higher speeds, particularly when these are combined with lower volumes. In that view, the study provides estimations of the expected increases in accidents, which would result from a raising of the UK motorway speed limit from 70 to 80 mph. The paper was awarded the Smeed Prize at the conference, whose purpose is "to recognise the best student paper and presentation at each Annual

Conference of the UTSG". The prize is offered in honour of Reuben Smeed, who was the first Professor of Traffic Studies at University College London in 1969.

Banerjee and Hine focus on Northern Ireland and the influence of urban form, attitudes, preferences, socio-economic and demographic factors on travel patterns in terms of vehicular miles travelled. The study considers the context where car reliance is an inherent part of daily lifestyle, and hence concentrates on the issues of '*where we live*' and '*how we travel*'. Using partial least squares structural equation modelling, the findings reveal that although there is no significant direct influence of the neighbourhood scale urban form variables on the vehicular miles travelled, regional-scale urban form exerts a strong effect.

Ahmed, Hounsell and Shrestha investigate bus priority parameters for isolated vehicle actuated junctions. Bus priority at traffic signals has been implemented in many cities worldwide as a means of reducing junction delays for buses and improving bus speed and reliability, and the paper explores whether these benefits can be further improved by considering new priority parameters. Specifically, the study investigates the options of either extending the green period for an approaching bus, or recalling the green stage if the signal is currently red for the bus. Using the VISSIM microscopic simulation software to evaluate existing and new strategies for bus priority at isolated signal controlled junctions operating under D-system vehicle actuation, new advanced bus priority methods based on different priority parameters are developed and their performance is compared with existing methods.

The article by Jahanshahi and Jin investigates the built environment typologies in the UK and their influences on travel behaviour. This provides new evidence through latent categorisation in structural equation modelling, which seeks to guide the design of future travel surveys, such that it enhances the analysis and monitoring of the impacts of planning and transport policies on travel choices.

The paper by Mamouei, Kaparias and Halikias presents a quantitative approach to the behavioural analysis of drivers in highways using particle filtering. Empirical evidence suggests the existence of changes in the driving behaviour in response to changes in traffic

conditions, which is a phenomenon known as “adaptive driving behaviour”, and the study represents an attempt to identify the conditions under which it occurs and to describe them in a systematic way. Such knowledge can greatly contribute to the accuracy of microscopic simulation modelling and can offer a deeper understanding of the traffic flow, ultimately delivering benefits with respect to improving the efficiency of the transport network. The study links adaptive driving behaviour with changes in the parameters of a given car-following model. The changes are tracked using a dynamic system identification method called “particle filtering”, and the dynamic parameter estimates are subsequently further processed to identify the critical points, at which significant changes in the system take place.

Finally, Papangelis, Nelson, Sripada and Beecroft focus on the effects of mobile real-time information (RTPI) on rural passengers. Despite RTPI systems becoming common-place in public transport, and even though a plethora of studies have explored the effects that they have on passengers, the focus so far has tended to be on urban areas, with the rural community having been so far ignored. In response, the paper focuses on the impact of mobile public transport RTPI in rural areas by conducting a before and after intervention study with bus passengers in the Scottish Borders. The findings indicate that the participants primarily use mobile RTPI systems to gain both situational and geospatial awareness, but also to adapt their travel behaviour in disrupted circumstances.

Overall, these papers reflect the breadth of transport research being undertaken at UTSG institutions, and the community looks forward to the 48<sup>th</sup> Annual Conference, to be co-hosted by the University of the West of England and the University of Bristol in January 2016.

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