

## Editorial: Special issue of the 5<sup>th</sup> Symposium of the European Association of Research in Transportation

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This special issue presents seven selected papers from the 5<sup>th</sup> Symposium of the European Association of Research in Transportation (hEART) which was held in September 2016 in Delft, The Netherlands, and was organised by Delft University of Technology. The contributions cover a wide range of topics in transportation, reflecting the broad scope of the hEART symposium series, including but not limited to travel behaviour, travel survey methods, railway freight as well as (terminal) logistics. As editors of this special issue we are very grateful for the efforts made by the authors, in particular their enduring efforts to push the quality of their contributions to a higher level during the review process. Also, we like to take the opportunity to thank all the reviewers for their constructive feedback and suggestions for improvement. This editorial provides a brief overview of the hEART2016 symposium. After that, an overview is given of the seven contributions that form this special issue.

### **1. The 5<sup>th</sup> Symposium of the European Association of Research in Transportation**

The 5<sup>th</sup> Symposium of the European Association of Research in Transportation was held in Delft, the Netherlands from the 14<sup>th</sup> to the 16<sup>th</sup> of September 2016. The conference planning and organisation has been coordinated by two departments of Delft University of Technology: Transport & Planning of the Faculty of Civil Engineering and Geosciences and Transport & Logistics of the Faculty of Technology, Policy and Management. In terms of statistics, hEART2016 set several records. Firstly, the total number of abstracts received was 251, of which about two-thirds were accepted for presentation at the conference. In total, 230 attendees participated to the conference. Secondly, despite the European orientation of the conference, at the 5<sup>th</sup> hEART symposium about one out eight contributions were from non-European origin. This highlights the increasing international character and reputation of the hEART symposium series. To accommodate for the large number of presentations, the conference presentations were organised into five sequential tracks, each focussing on specific research themes.

### **2. Selected contributions**

In total, we received sixteen contributions for consideration in this special issue. Eleven manuscripts were sent out for review by a panel of external reviewers. After multiple review rounds, seven manuscripts were deemed to be original and high-quality contributions and therefore accepted for publication in this special issue. Here, we briefly discuss the highlights of

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these seven papers. Given their broad coverage, we do not attempt to artificially tie the contributions together. Rather, we acknowledge the papers as being individual contributions and discuss them below in no particular order.

The first paper of the special issue is authored by Aschauer et al. (2017). This paper deals with reporting quality and non-reporting effects in household travel surveys. Specifically, this study compares travel activities reported in the established Austrian National HTS (ANTS) with second survey called "Mobility-Activity-Expenditure Diary" (MAED). The study focusses on (i) identification of non-reporting effects on travel estimates, (ii) analysis of speed-of-response effects and (iii) on assessment of the completeness and accuracy of non-travel activities inferred from trip purposes.

The second paper, authored by Harding et al. (2017), is close in nature to the first paper and aims to study the relationship between trip under-reporting and land use in household travel surveys. Using data from recent household travel surveys in Montreal and Toronto, Harding et al. (2017) show that in dense urban areas, where the probability of making discretionary walking trips is higher, trip under-reporting is a more significant problem and that this may be amplified by the data collection protocol. It is this combination of survey methods, land use and non-discretionary trips that makes this paper a worthy contribution to this special issue.

The third paper shifts our attention to freight transportation by rail. Kapetanovic et al. (2017) examine whether rail operator can increase its revenue by implementing discriminatory price policies in the context of a fixed and regular supply (i.e. capacity). The proposed model is solved using dynamic programming methods and compared to the first-come-first-served, as currently operated by the Serbian railways. Kapetanovic et al. (2017) study the effect of aggressive discriminatory policies such as booking limits and bid price policy on revenue for the Serbian case study with the help of simulated data. Besides the interesting and novel application context, the contributions of this paper can be found in the proposed relatively simple but insightful and easy to solve dynamic programming model.

The fourth paper is also covering the freight domain and develops a time-of-day model predicting truck arrival times. Time-of-day models have a long-standing tradition in more traditional travel demand models, but have rarely been applied in the freight context. Kourounioti and Polydoropoulou (2017) combine this with a novel dataset covering one year of aggregate container terminal data from a Middle Eastern port to estimate freight based time-of-day models using traditional choice modelling methods. The control variables included in the choice models are informed by expert knowledge from port professionals. Together this provides a very interesting and refreshing read.

The fifth paper by Ma and Klein (2017) proposes a Bayesian Network (BN) approach for modeling individuals' heuristic rules for selecting discretionary activity location. The paper makes two contributions. Firstly, it proposes a location choice set generation method which delimits the choice set size using empirical detour factors of individuals' home-work axis and space-time constraints. Secondly, the study proposes a hybrid learning algorithm to train the BN, making use of structural restrictions from prior knowledge and a model averaging approach. Using empirical data they show that the proposed location choice set generation method effectively generates choice alternatives, which contain the observed ones with a high matching rate while keeping the choice set reasonably sized, and they show that using their method consistent dependency structures for the BNs are obtained.

The sixth paper builds a household travel resource allocation model maximising household utility. After a family's activities are sorted by priority, they are split into mandatory and subsequent activities. The actual scheduling then uses a heuristics-based approach selecting the activities and mode choice. The interesting aspect of this model developed by Yeung and Casello (2017) is that it explicitly considers chaperoning of dependent household members. The model is then applied to fourteen households in the Waterloo region in Canada for which detailed

household survey data was collected. The contribution of this heuristic approach is in that it possibly offers a simple algorithm that can outweigh the computational costs of existing agent-based models.

The seventh and final paper by Zeng et al. investigates travellers' preferences towards travel time reliability. To do so, it uses large-scale GPS trip records. Specifically, using the theory of stochastic dominance it derives lower and upper bounds of individual risk preferences by exhausting a series of reliable paths with different on-time arrival probabilities. Subsequently, a regression model is developed to explore how socio-demographic and trip characteristics influence the lower and upper bounds of individual risk preference.