

## Challenge of Documenting Complex Traveler Response Scenarios and Benefits of Having Such Data to Inform Transportation Policies

- *Zahra Parvaneh, Eindhoven University of Technology, Netherlands, presider*
- *TRB Workshop on Data and Information Technology, Hot Topic: Big Data, Planning and Forecasting*
- *Sunday January 12, 2014 1:30 PM - 4:30 PM, Hilton Hotel, Columbia Hall 4*

**Sponsored By** Travel Survey Methods Committee

### Summary

Traveler response to policies such as congestion pricing may involve change of departure time, route, destination, activity sequence, mode, task allocation, or even a cancelled activity. These response patterns are strongly correlated. In this regard, the challenge would be how to best collect such complex data in the most reliable way. The workshop “challenge of Documenting Complex Traveler Response Scenarios and Benefits of Having Such Data to Inform Transportation Policies” was organized to present examples of recent surveys and advanced web-based computer systems and provide the community with the opportunity to discuss challenges and experiences.

We designed the workshop with the objective of creating an environment where attendees can communicate, present and exchange their ideas. Attendees were motivated to participate in depth discussion.

The workshop included four presentations, each 20 minutes. After each presentation, we tried to have a short time for a quick discussion and after each two presentations, we had a 30 minutes general discussion to discuss the issues and exchange ideas in the topic.

The presentations were planned as following:

- 1:30 Workshop commences with note of welcome: Zahra
- 1:35 Presentation #1: Zahra Parvaneh -- Sophisticated, Interactive, Dynamic Data Collection Approach: Introduction and Overview
- 1:55 Presentation #2: Elaheh Khademi and Dajuan Yang -- Sophisticated, Interactive, Dynamic Data Collection Approach: Elaboration
- 2:15 General discussion, floor open to questions from audience
- 2:45 Presentation #3: Carl Harline and Mark Burris -- Impact of Traffic Images on Mode Choice in Stated-Preference Surveys
- 3:05 Presentation #4: Lara Montini and Nadine Rieser-Schüssler -- One-Week GPS-Based Travel Survey in the Greater Zurich Area, Switzerland
- 3:25 General discussion, floor open to questions from audience
- 3:55 Small breakout group discussion
- 4:25 Summing up
- 4:50 Workshop adjourns

In the first two presentations, Zahra, Elaheh, and Djujan presented their innovative web-based data collection system, SINA. Zahra first provided an overview of the system and gave an example of using the system to evaluate changes in individuals' activity-travel pattern in provision of travel information. Then, Elaheh and Djujan elaborated the system more by explaining how this system can be used to collect stated adaptation data to examine effect of pricing policies or changes in fuel price on individuals' activity-travel pattern.

In the third presentation, Mark raised up the question that if including pictures in a data collection is effective or not? Result of their studies showed no significant difference in individuals' responses to the questionnaire where for each alternative a picture was included to help respondents imagining the situation, oppose to the questionnaire that no picture was included.

In the last presentation, Lara presented their study on a GPS-based activity diary survey accompanied by psychometric scales to observe the influence of different attitudes on mode and route choice. Their survey was implemented as online questionnaire where 156 participants collected approximately one week of GPS data each; the first participant in August 2011 and the last in December 2012, all living in the greater Zurich area. Her presentation showed that even though there was diversity in the completion of the questionnaires, overall a very detailed GPS data set was gained. She also explained how that would be very valuable in further development of post-processing individuals' routines.

## Participation

Overall, around 50 people attended this workshop, including those who were present for just one or two presentations. We tried to have a lively atmosphere by rising up different questions and pointing out important issues during the presentations and the discussions. During the discussion times, the floor was open to share ideas and exchange knowledge between attendees. The following questions were discussed:

- Why is it important to collect such a complex data? What such a data brings on the table?
- What are the challenges in the collection of such a data?
- What approaches exist in overcoming these challenges?
- What are their strengths and weaknesses?
- How can we develop current approaches?
- How can such a data help policy makers? What does it show to us as researchers and policy makers?
- Are there approaches or technologies in other fields that we didn't yet implement in collection of activity-travel data?
- What are the modeling opportunities that arise from collection of such a data?
- Where are we going? What are the existing gaps that innovation might address?
- What are the priorities for methodological trials and collaborations?

Despite successful involvement of the attendees in the discussions, we couldn't really have small breakout group discussion. One reason could be that the set of the room was not adequate for group discussions. In addition, we would have needed one or two prepared problems to use for the group discussion. Moreover, a group discussion would be useful if in each group there are people who have experience in the topic so they can exchange ideas and learn from each other.

## **Future**

Although this was the first time experience for the workshop organizers, several positive comments were received. One of the participants specifically asked to continue this sort of workshop since it is a good opportunity to see the development in data collection techniques internationally. It is also important to add that in conferences like TRB most of the presentations and sessions focus on the result of different data collection and modeling part, however to have a good model, good and accurate data should be available, and having an efficient innovative data collection system is a necessity to gather such a data. Therefore, the design of data collection systems plays high role in that regard.

We hope that this will be the start point for future workshops in this topic.