

**Minutes of the
Emerging Methods Subcommittee ADB40(1)
Of the Committee on Transportation Demand Forecasting ADB40**

Tuesday, January 11, 2005, 12:00 – 1:30 PM

84th Annual Meeting of the Transportation Research Board
Hilton Washington Hotel and Towers, Grant Room
Washington, D.C.

With apologies in advance to missing, misconstrued, or misattributed comments, here is a summary of the discussion from the meeting. Requests for modifications to these minutes can be sent to Joan Walker (joanw@bu.edu).

1. Introductions

Joan called the meeting to order, mentioned that co-chair Karthik Srinivasan could not attend the meeting, and began with introductions around the room. There were 30 people in attendance, with a good mix of academics (50%), consultants (30%), and representatives from government agencies (20%).

2. Review of Initiatives from the 2004 Meeting

Joan summarized the outcome of initiatives from the 2004 meeting. Two topics from the discussion at last year's subcommittee meeting were developed into calls for papers: "Intra-Household Interaction and Group Decision-Making" and "Non-Conventional Models and Estimation Techniques", both received many submissions and the review process was coordinated by the parent committee. A session on intra-household interactions was scheduled for Thursday morning.

Also coming out of the subcommittee meeting from last year, the Sunday morning workshop on "Innovative Travel Models: Proof of Concept" was well received (over 100 in attendance and a lot of good discussion). Five different methodological advances were highlighted (discrete choice models, land use models, activity-based models, dynamic traffic assignment, and microsimulation) and thoughts from the planner's perspective (Cervenka) as well as visions for moving forward (Lawton and Koppelman) were provided. Further information and presentation slides can be found on the committee website www.trb-forecasting.org. The mention of the workshop spurred on an involved and passionate discussion at this subcommittee meeting regarding validation issues for activity-based models, and some of the comments were: There is a need for a rigorous validation program, including peer reviews, milestones, evaluation of benefits, which could be funded by a consortium of MPOs, and money is not the key issue [Cervenka]. A note that a ton of money is being spent fine tuning 4-step models, which could better be

used towards advanced models [Vovsha]. From the MPO perspective, a recognition that MPOs need a solid and stable model for backup before moving to activity-based models, and the traditional and advanced models need to be run head to head to figure out what the benefits are (can they answer more and different questions?) [Charnews]. There's an issue that you can't polish an apple any more (MPOs are 'fixing' the traditional models more than they need to), that insecurity leads to more money being spend on 4-step modeling, and that MPOs already have 4-step models running that can be used while new models are developed and for later comparisons [Lawton]. A suggestion that MPOs pool resources (money and data) to develop validation effort [Bradley]. A recognition that activity-based models are not as mature, and that more training is necessary [Janarthanan]. Tom Rossi et al.'s effort is aimed at this issue, i.e. training interested parties [Walker]. Some advanced models are out there now, and MPOs want to know how they are performing (comparing to 4 step, sensitivity tests, etc) [Lawton]. Traditional models are not difficult to develop and that eventually everyone will have 2 models (one traditional, one advanced) and will use what's better [Slavin]. A recognition that MPOs are not moving [Janarthanan] and more general discussion on how to push things forward. A great discussion on very important issues; perhaps more directly related to the parent committee or Costas' committee as this subcommittee needs to focus on emerging methods [Walker].

3. Open Discussion of Emerging Methodological Developments

One of the key roles of the subcommittee is to discuss emerging methodological developments of importance to the subcommittee, and to determine one or more key action items to pursue in the next year (often in the form of a call for paper, workshop, or conference). This is a summary of the brainstorming session in which people throw out and discuss various methodological topics of interest. The discussion started with a well thought out list provided by Peter Vovsha and continued with input from most of those in attendance. Numerous topics were touched on and many good thoughts were presented. In brainstorming fashion, here were many of the thoughts that came about and some of the related discussion:

- Technical details of the system architecture (software, platform, language) for activity-based models [Vovsha].
- Issues of the design of regional activity-based model systems (putting the toolbox together into a system) [Vovsha].
- Models for complex, multidimensional choices [Vovsha]. Very relevant to land use modeling [Abraham].
- Integration of land use and activity-based models including issues of equilibrium and feedback [Vovsha].
- Information processing and perception, definition of choice sets, cognition/behavioral processes/psychology, different disciplines [Guo, Zhang, Abraham].
- Land use integration, measures of benefits (time and cost), bringing more detailed measures of urban form into models [Bradley].
- Comparison of activity-based versus 4-step models; integration of network DTA and activity-based models and applications to large-scale networks [Zhang].

- Methods beyond discrete choice (hazard rate, continuous, etc.) [Srinivasan].
- Policy relevance of advanced methods towards toll-lanes, pricing, etc., including user-benefit analysis, value of time (parsing it out, heterogeneity, when it changes), but in a broader, comprehensive user-benefit analysis [Lawton, Abraham, Zhang, Vovsha, Cervenka].
- Methodological issues related to the requirements of US government agencies related to funding decisions [Bowman].
- Inter-household interactions and social networks, as related to carpooling and other behaviors [Roorda].
- Methodological issues related to freight and commercial (since these just brought into the parent committee) [Bowman]. Tons of issues such as trip chaining and intrazonal [Slavin]. Data is an issue, and Canada and Germany sited as collecting good freight data [Miller, Slavin].

The discussion was going strong, but time ran out and we had to move on to initiatives for 2005.

4. Discussion of Initiatives for 2005

Chandra noted that the subcommittee should plan on putting out one call for next year, and the focus should be on methods. There was a discussion about what calls are best suited to this subcommittee and which are more appropriate for the parent committee or other committees, and a statement that the role of this committee is to focus on emerging methods [Walker]. There was also a discussion that the call had to be timed appropriately (an important topic with growing interest, but not too many or too few working on it) [Vovsha/Walker]. And also a discussion that we had to decide how practical to be in our call: on one extreme going after a big, long term problems, and on the other going for a call on a smaller subject that leads to more immediately practical research [Slavin].

Clearly, two of the key themes of this year's TRB (in this subcommittee meeting and elsewhere) are **validation** and **integration**, and we want to strongly encourage the parent committee and ADB60T to pursue such calls and other actions that will promote developments in these areas.

In terms of a call to come out of this subcommittee, the attendees narrowed in on the topic of "Measures of User Benefits for Project Evaluation". There was a feeling that it was a good topic because it has interesting methodological issues as well as immediate practical relevance and importance. The discussion on this topic started out as a discussion of value of time (heterogeneity, stability, etc.) and then a realization that such issues have to be included in more comprehensive measures of benefits. Also related to this topic are methodological issues of government requirements and standards used to determine funding allocations.

There was also interest in potentially hosting a workshop or session of invited speakers from other disciplines (psychology, sociology, health, etc.) to integrate methods used in

those fields into Transportation. The issue of learning from other disciplines comes up every year at this subcommittee meeting, and the invited session/workshop idea was presented to address the issue that the relevant researchers would probably not attend TRB without some initiative on our parts.

5. Conference Reports / News / New Website / Other Business

There was no time available for this part of the agenda. Note that the parent committee has a new web site is www.trb-forecasting.org. Everyone is encouraged to visit the web site and provide the web development subcommittee with suggestions to enhance the value of the site. Information regarding committee activities will be posted on the web site.

The meeting was adjourned at 1:30 pm.

Minutes prepared by: Joan Walker.