Dutch valuation study: current status

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Context

- Cost-benefit analysis (CBA)
- Important benefits infrastructure projects
  - Travel time savings
  - Improved travel time reliability
- Literature study (2004)
  - Main conclusion: Reliability is of substantial importance and should not be neglected in CBAs
- International expert meeting (2004)
  - Common definition of reliability that fits well in CBA framework
  - Standard deviation of travel time distribution
  - Provisional values of reliability that can be used in CBA
  - New empirical research needed to replace these provisional values
  - SP survey methodology set up in international cooperation
Stated Preference survey

- Measuring the value to society of travel time benefits and travel time reliability benefits
- Four SP surveys
  - Car
  - Bus, tram, metro, high-speed train, air travel
  - Freight transport by road, rail, inland waterways, sea, air
  - Recreational navigation
- Values meant to be used in official Dutch guidelines for CBA
Set-up of the project

**Design project**
Preparing questionnaires and experiments

*(Carried out in 2007)*

**Current status**

- **Phase 1**: Preparing
- **Phase 2**: Pilot
- **Phase 3**: Main survey
- **Phase 4**: Data analysis
- **Phase 5**: Final reports

*(planned: 2009 – 2011)*
SP structure

- Two alternatives
  - Trip A - Trip B
  - Transport A - Transport B

- Four attributes
  - Travel time
  - Travel costs
  - Reliability
  - Arrival time
Presentation reliability attribute

- Eight formats tested
- Through 30 face-to-face interviews
- Which format was understood best?
- Special attention to the effect of education level
## Presentation reliability attribute

Best format (better than “bars” or “clockface” presentation)

### Trip A

- **Usual travel time:**
  - **40 min**

- You have an equal chance of the following five travel times:
  - 35 min
  - 40 min
  - 40 min
  - 40 min
  - 45 min

- **Costs:**
  - **€ 3,80**

### Trip B

- **Usual travel time:**
  - **41 min**

- You have an equal chance of the following five travel times:
  - 30 min
  - 35 min
  - 45 min
  - 45 min
  - 50 min

- **Costs:**
  - **€ 2,80**
Three SP experiments

- The experiments
- Experiment 1 is the same as the “Value of Time studies” in 1988 and 1997

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Experiment 1</th>
<th>Experiment 2a</th>
<th>Experiment 2b</th>
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<td>Travel cost</td>
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<td>X</td>
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<tr>
<td>Arrival time</td>
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<td>X</td>
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</tbody>
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Main survey

- Passenger transport
  - Internet survey
  - Within on-line panel: 5,700 interviews (finished)
  - Outside on-line panel: 1,500 interviews (target)
- Freight transport
  - CAPI (computer assisted personal interviews)
  - 800 interviews (finished)
- Results available end of 2011
  - VoTs and VoRs to be used in official Dutch CBAs
Also needed: volumes

- Empirical research using Dutch highway travel time data
  - Strong relationship between mean and standard deviation of travel times
  - Other explanatory variables (time varying as well as invariant) are significant but hardly improve predictive power
- However, traffic management measures can have effects on travel time variability and mean travel time that differ considerably in direction and size
  - Insight in the effects on variability is lacking
  - Miscalculation of benefits and costs
- Traffic forecasting tools need to be improved to provide estimates of changes in standard deviations and numbers of trips on links
  - Research into behavioral responses of travelers/ shippers/ carriers is needed