Valuing Mobility – the MoTiV Project

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Valuing Mobility: the bigger picture

- **Liveable Smart City Transition**: enhance perceived and experienced “quality of time” for higher quality of life (QoL)

- **Why “worthwhile time” instead of “productive time”?**
  - Quality of living is not only about “effective” and “productive” use of time
  - Extend “time and cost savings” objective with other relevant dimensions and indicators of value

<table>
<thead>
<tr>
<th>EUR per person-hour</th>
<th>Commuting/Leisure/Other</th>
<th>Work/Business trip</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel time</td>
<td>12.14 €</td>
<td>51.64 €</td>
</tr>
<tr>
<td>Delays (bicycle, car)</td>
<td>18.21 €</td>
<td>77.45 €</td>
</tr>
<tr>
<td>Delays (public transport)</td>
<td>36.42 €</td>
<td>154.91 €</td>
</tr>
<tr>
<td>Waiting Time</td>
<td>24.28 €</td>
<td>103.27 €</td>
</tr>
<tr>
<td>Transfer time</td>
<td>18.21 €</td>
<td>77.45 €</td>
</tr>
</tbody>
</table>

Example of monetary travel time values used by the Danish ministry of Transport (2018 values).
Motivation

Value of Travel Time (VTT): shift focus from “what is currently measured” to “what is currently not (sufficiently) measured”

• Are VTT models socially inclusive / fair?
  • Shall VTT models acknowledge what value of mobility means for children (e.g. safety, comfort factors)?

• To what extent we can rely on use of VTT as proxy for other travel variables?
Motivation

Open and critical assessment of some VTT assumptions

• Is it always the case that travel time savings
  • on a business trip are used for work (e.g. one may decide to sleep)?
  • during holidays are not used to work?

• Why shall “work time” be always more valuable than any other “time”
  • Should sustainable mobility perspective not imply ‘time value equality’?

• Can we assume that digital connectivity in transport (e.g. Wi-Fi) always leads to higher productivity? How about accounting for negative impacts (e.g., cognitive, social)?
About MoTiV: project figures

- European-wide exploration of “Mobility and Time Value”
  How value of travel time is perceived and experienced across transport modes, generations, genders and cultures

- **30-month project:** Nov. 2017 – Apr. 2020 (now: M11)
- **Overall funding:** ~2M EUR
- **Small consortium:** 7 partners
  - 3 academic institutions/research organisations (UNIZA, SK; Eurecat, ES; INESC-ID, PT)
  - 2 business partners (routeRANK, CH; CoReorient, FI)
  - 1 mobility consultancy organization (TIS.pt, PT)
  - 1 European-wide association (ECF, BE)
  and additional Linked Third Parties affiliated with ECF
Approach: smartphone-based data collection of travel experiences

- **Focus on the individual Travel Experience**
  - identifying “satisfiers/dissatisfiers” of worthwhile travel time

- **Smartphone-based data collection via the Woorti app**

- **Continuous collection of mobility/activity behaviours**
  - smartphone-based sensing of mobility behaviour
  - traveler’s input on activities while travelling, travel time appreciation and underlying reasons

- **Smart mobility coach (“quantified traveller” approach)**
  - trends and statistics for self-learning and increased awareness
MoTiV Data Collection Campaign (DCC)

- **Target:** Minimum 5,000 valid samples (active app use for minimum 2 weeks) from as many users from at least 10 EU countries

- **Obtain a balanced sample** in terms of:
  - **Age:** young adults (16-24 y), adults group 1 (25-49 y), adults group 2 (50-64 y), older population (65+).
  - **Sex (M/F) and Gender Identity**
  - **Transport modes:** walking, cycling, public transport, car use, shared mobility, long-distance train, plane.
  - **Residence:** urban/sub-urban, rural.
  - **Socio-economic and other demographic indicators**

Release of **Open Dataset** at the end of the project
MoTiV Conceptual Framework: Value Proposition of Mobility (VPM)

- VPM refers to the "subjective value embedded in individual mobility choices"
  - Contextual and continuously re-assessed
  - Co-created: no single actor in charge of VPM
  - It implies a range of expectations associated to the transport mode(s), services and planned activities / behaviors

- VPM as a perspective looking at travel time from the viewpoint of decision factors influencing mobility choices and related travel time value
  - Includes utilitarian dimension (e.g. time & cost savings)
  - However, MoTiV focus is on hedonic and eudaimonic dimensions
MoTiV Conceptual Framework: Value Proposition of Mobility (VPM)

- 19 research hypotheses
- Identify associations between factors and VPM dimensions
Conclusions: implications for planners

• **What:** Transport planning should **aim to improve Worthwhile Travel Time** when looking at investing in transport

• **How:** to adopt a **holistic approach to the study of VTT**
  • VTT models (such as VPM) covering the utilitarian, hedonic and eudaimonic dimensions of value
  • address challenge of establishing appropriate quantitative indicators of worthwhile travel time (operationalization)

Conclusions: exploring new approaches

MoTiV expected contribution and limitations

- Holistic conceptual model of VTT
- EU-wide data collection -> open dataset
- Policy and business recommendations
- Exploratory research, without aim of statistical significance

A way to implement livable smart cities by engaging citizens in participatory (open science) processes of digital governance
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