Stimulating active modes of urban transportation

Results from the ISAAC project

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ISAAC project

- Webtool “PedBikePlanner”: tailor-made recommendations for cities and municipalities on how to stimulate walking and cycling

- Behavioural survey in nine European cities

Funded by: CEDR

Project partners: POLIS, SWOV, tøi, VIAN
PedBikePlanner webtool

www.pedbikeplanner.eu
PedBikePlanner webtool

[www.pedbikeplanner.eu](http://www.pedbikeplanner.eu)

### Segmentation factor

<table>
<thead>
<tr>
<th>Segmentation factor</th>
<th>Criterion</th>
<th>Categorisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhabitants</td>
<td>Age</td>
<td>% of population &lt; 20 years</td>
</tr>
<tr>
<td>Inhabitants</td>
<td>Car availability</td>
<td>Motorisation (cars/1,000 inhabitants)</td>
</tr>
<tr>
<td>Inhabitants</td>
<td>Education</td>
<td>% of the population qualified at level 5 to 8 ISCED (tertiary education)</td>
</tr>
<tr>
<td>Inhabitants</td>
<td>Income</td>
<td>% of the population with an income lower than 60% of the national median income</td>
</tr>
</tbody>
</table>
## PedBikePlanner webtool

* [www.pedbikeplanner.eu](http://www.pedbikeplanner.eu)*

<table>
<thead>
<tr>
<th>Measure</th>
<th>Effect</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intelligent Transportation Systems (ITS) for bicycles</td>
<td>![Bike]</td>
<td>![Euro]</td>
</tr>
<tr>
<td>Interim Design Strategies</td>
<td>![Bike]</td>
<td>![Euro]</td>
</tr>
<tr>
<td>Land use planning</td>
<td>![Bike]</td>
<td>![Euro]</td>
</tr>
<tr>
<td>Bicycle parking</td>
<td>![Bike]</td>
<td>![Euro]</td>
</tr>
<tr>
<td>Operation and maintenance of cycling facilities</td>
<td>![Bike]</td>
<td>![Euro]</td>
</tr>
</tbody>
</table>
Intelligent Transportation Systems (ITS) for bicycles

ITS (Intelligent Transport Systems) and other innovative and technological solutions for bicycles encompass a variety of measures directed at infrastructures, cyclists, bicycles and motorized vehicles. The aim is to improve conditions for cyclists, emphasising accessibility and safety. ITS systems alone or in combination with other measures can make cycling more attractive and thus initiate a modal shift. The development of ITS technology is dynamic. Various systems are currently at a test- or development stage with so far limited knowledge about their effects e.g. on the environment.

Author: Michael W. J. Sørensen, TØI, First published on www.tiltak.no, 2013

Edited by: Rico Wittwer & Regine Gerike, TU Dresden, 2018

- Introduction
- Mode change effects
- Examples of use
- Effects on safety and security
- Challenges and opportunities
## Quick suggestions

Select any of the tags below to immediately go to this subgroup of measures to stimulate walking and cycling.

<table>
<thead>
<tr>
<th>Level</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>City-level</td>
<td></td>
</tr>
<tr>
<td>Single location</td>
<td></td>
</tr>
<tr>
<td>Neighbourhood</td>
<td></td>
</tr>
<tr>
<td>Across city border</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Mobility impact</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>High mobility impact</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cost</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Low cost</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Safety impact</th>
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</thead>
<tbody>
<tr>
<td>Better safety</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of measure</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructural</td>
<td></td>
</tr>
<tr>
<td>Services</td>
<td></td>
</tr>
</tbody>
</table>
Results survey

▸ Survey about motivations behind walking, cycling, and usage of Personal e-Transporters

▸ Nine cities in four countries
  ▪ BE: Liège, Ghent
  ▪ NL: Tilburg, Groningen
  ▪ DE: Düsseldorf, Dortmund, Berlin
  ▪ NO: Bergen, Trondheim

▸ Representative sample of 250 respondents per city
Most important obstacles hindering cycling more frequently?

To what extent are the following aspects an obstacle for you to cycle more frequently?

- Physical effort
- Time
- Costs
- Environment
- Traffic safety
Most important obstacles hindering walking more frequently?

To what extent are the following aspects an obstacle for you to walk more frequently?

- Physical effort
- Time
- Costs
- Environment
- Traffic safety
Groups of persons with common determinants of variation in behaviour?

▸ (Only) two clusters of respondents identified:
  ▸ Pro-cycling cluster (56%)
  ▸ Not pro-cycling cluster (44%)

▸ More variation in psychological determinants of cycling
  ▸ More ‘pronounced’ opinion about cycling than about walking
Characteristics of pro-cycling cluster

- More Dutch participants; few from Bergen and Liège
- More young people
- More men
- Higher education level
- NOT more pro-environmental
Characteristics of pro-cycling cluster

- Make more use of ALL ‘alternative modes’
  - Cycling (obviously)
  - Walking
  - Moped/motorcycle
  - Public transport
  - Taxi
  - Personal e-Transporters

- More subscriptions to
  - Public transport
  - Car sharing
  - Bicycle sharing

- ... but no difference in driving license permit between both clusters (slightly lower car ownership, however)

- More often ‘occasional’ car drivers/passengers
## Characteristics of pro-cycling cluster

<table>
<thead>
<tr>
<th>Obstacle to cycle more</th>
<th>Pro-cycling cluster</th>
<th>Not pro-cycling cluster</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical effort</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Costs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environment (climate, hilliness)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traffic safety</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Determinants of intention to cycle more frequently

- Attitudes
- Norms
- Perceived Behavioural Control

Intention to cycle more frequently

- Attitudes: 0.52
- Norms: 0.26
- Perceived Behavioural Control: 0.15
Determinants of intention to walk more frequently

- Attitudes
- Norms
- Perceived Behavioural Control

Intention to walk more frequently

Correlations:
- Attitudes to Intention: 0.48
- Norms to Intention: 0.28
- Perceived Behavioural Control to Intention: 0.10
Conclusions

▸ Main obstacle cycling: road safety

▸ Main obstacle walking: time

▸ **Cycling/walking attitudes are crucial for behavioural change**