Cyclists’ and Non-cyclists’ Representations and Motivations of Utilitarian Urban Cycling in France

Introduction
Representations and motivations are powerful determinants of mobility behavior, and thus of the decision to cycle.

What are the representations and motivations of cycling according to the type of user?

Disadvantages

Advantages

Positive Arguments

Negative arguments

Barriers

Aims

• Determining the weight of the arguments related to utilitarian urban cycling according to the frequency of cycling
• Studying whether important arguments (advantages and disadvantages) are indeed the ones that motivated people to cycle (levers and barriers)
• Identifying groups of positive and negative arguments

Method

Online questionnaire:
• Representational and motivational scales (5-point Likert scale):
  - 14 positive arguments: advantage - lever
  For you, to what extent is (...) an important advantage/lever of cycling as an urban mode of transport? (1- not at all important advantage to 5- very important advantage)
  - 21 negative arguments: disadvantage - barrier
  For you, to what extent is (...) an important disadvantage/barrier of cycling as an urban mode of transport? (1- not at all important disadvantage to 5- very important disadvantage)
• Use of bike and other modes of transport
• Future cycling intentions
• Socio-demographic data

Sample:
409 cyclists and non-cyclists (50% 49%, ≥51%, aged 18-65) in the eleven largest French cities

Results

Physical activity

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Levers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease to park</td>
<td>4.06 1.83 3.66 3.73 5.00 2.84</td>
</tr>
<tr>
<td>To leave a place when you want</td>
<td>3.88 3.56 3.39 3.65 3.29 2.92</td>
</tr>
</tbody>
</table>

**Good weather**

<table>
<thead>
<tr>
<th>Disadvantages</th>
<th>Barriers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ice</td>
<td>4.27 4.46 4.70 4.15 4.24 4.62</td>
</tr>
<tr>
<td>Heavy rain</td>
<td>4.19 4.36 4.53 4.00 4.10 4.43</td>
</tr>
<tr>
<td>Snow</td>
<td>4.05 4.37 4.59 3.78 4.18 4.49</td>
</tr>
<tr>
<td>Lack of attention from other road users</td>
<td>3.39 3.49 3.79 3.03 3.49 3.89</td>
</tr>
<tr>
<td>Long distances</td>
<td>3.15 3.59 3.82 2.96 3.39 3.70</td>
</tr>
<tr>
<td>Vulnerability in traffic</td>
<td>3.31 3.53 4.18 3.02 3.27 3.99</td>
</tr>
</tbody>
</table>

PCA - Advantages
Principal Component Analyses on 14 advantages → 3 factors:
1- Independence (38%)
2- Enjoyment (10%)
3- Utility aspects of (7%)
KMO = 0.878; BTS < .001

PCA - Disadvantages
PCA on 21 disadvantages → 5 factors:
1- Perceived danger (31%)
2- Weather issues (12%)
3- Effort (8%)
4- Sweating issues (6%)
5- Lack of parking places (5%)
KMO = 0.878; BTS < .001

Representations vs. Motivations
High positive correlation between:
• advantages and levers (r=.58 to .79)
• disadvantages and barriers (r=.56 to .85)
Representational scores > Motivational scores
For each group, on average, representational scores were significantly higher than motivational scores. Advantages were higher than levers, and disadvantages were higher than barriers.
• Positive: F(1, 400)= 227.15, p<.001, r²=.362
• Negative: F(1, 400)= 81.56, p<.001, r²=.169

Conclusion
These results allow us to better understand positive and negative motivations towards cycling according to the type of user (frequent cyclist, occasional cyclist or non-cyclist). They will enable stakeholders to design cycling promotion campaigns tailoring different user types.