The effects of busy roads on community severance

Paulo Rui Anciaes

Centre for Transport Studies
University College London

Link up streets, routes and neighbourhoods
Urban Design London
01/03/2017
Community severance
(a.k.a. the barrier effect of roads)
What is community severance about?

Based on 60 definitions found in the literature 1963-2015
Community severance and wellbeing

Mindell and Karlsen (2012)
*J.Urban Health 89 (2)*
How is community severance measured?

Subjective classification of many variables into levels of severance

Detailed formulas were rarely used and have been abandoned

Severance costs = time losses for personal walking trips

Simple formulas, to be applied on a project-by-project basis
UCL STREET MOBILITY PROJECT

Developing tools to measure and value community severance
METHOD 1
Spatial analysis

- Density
- Land use mix
- Street connectivity

Walkability model

High traffic volumes explain cases where measured walking flows are lower than those predicted from the walkability model

Case study selection
Case studies

Seven Sisters Road (London)

Finchley Road (London)

Queensway (Southend-on-Sea)

Stratford Road (Birmingham)
METHOD 2
Participatory mapping

Perceived barriers:
Busy road, especially junctions

Routes: Avoid busy road by choosing alternative (longer) routes or taking bus
METHOD 3
Video surveys

18.3
Pedestrians/m²

- Entrances to residential areas
- Bus stops
METHOD 4
Street audits

Pavements

Crossing facilities
## METHOD 5
### Household survey

**Measured traffic volumes**

| Heavy | 72% |

**Perceived traffic volumes**

<table>
<thead>
<tr>
<th>Heavy</th>
<th>72%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>25%</td>
</tr>
<tr>
<td>Light</td>
<td>4%</td>
</tr>
</tbody>
</table>

**Traffic affects walking**

<table>
<thead>
<tr>
<th>Yes</th>
<th>39%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>33%</td>
</tr>
</tbody>
</table>

**Avoids busy road**

<table>
<thead>
<tr>
<th>Yes</th>
<th>12%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>27%</td>
</tr>
</tbody>
</table>
METHOD 6
Stated preference survey

<table>
<thead>
<tr>
<th>Traffic density: Low</th>
<th>Central reservation with no guard railing</th>
</tr>
</thead>
</table>

**Potential intervention** | **Implicit value**

<table>
<thead>
<tr>
<th>Option</th>
<th>Implicit value</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 → 4 lanes</td>
<td>£1.39</td>
</tr>
<tr>
<td>4 → 2 lanes</td>
<td>£1.11</td>
</tr>
<tr>
<td>Add central reservation</td>
<td>£1.12</td>
</tr>
<tr>
<td>High → medium traffic density</td>
<td>£0.94</td>
</tr>
<tr>
<td>Medium → low traffic volume</td>
<td>£0.83</td>
</tr>
<tr>
<td>Speed below 30mph</td>
<td>£0.49</td>
</tr>
</tbody>
</table>

In this scenario, which of the two options would you choose?

<table>
<thead>
<tr>
<th>Option A</th>
<th>Option B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross at this point</td>
<td>Do not cross the road and pay the higher ticket cost</td>
</tr>
<tr>
<td>Saving 80p off your one-way ticket cost</td>
<td></td>
</tr>
</tbody>
</table>

Option A  Option B
Street Mobility Toolkit

Available from
http://www.ucl.ac.uk/street-mobility/toolkit

Project final conference

Wednesday 8th March, 12:30-17:30
Henry Wellcome Auditorium,
Wellcome Collection
183 Euston Road

https://the-effects-of-busy-roads-on-local-people.eventbrite.com
Thank you for your attention!

p.anciaes@ucl.ac.uk

Epidemiology and Public Health: Jenny Mindell, Shaun Scholes, Nora Groce, Jemima Stockton
Centre for Transport Studies: Peter Jones, Paulo Anciaes
Bartlett School of Architecture: Laura Vaughan, Ashley Dhanani
Mapping for Change: Muki Haklay, Louise Francis