Cycling safety in world cities – measuring exposure and risk

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ITF Cycling Safety Roundtable, 29-30 January, Paris
What was said in 2013

Most authorities lack the factual basis with which to assess cycling safety

Efforts must be made to harmonise definitions of terminology so as to be able to make reliable international comparisons of cyclist safety
International Traffic Safety Data and Analysis Group

IRTAD

IRTAD-LAC
A question endorsed by the ITF IRTAD group

Subgroup on risk exposure data
How to collect comparable exposure data, and especially passenger mobility data by mode?
Safer City Streets
the global traffic safety network for liveable cities

Global database
Network of experts
Safer City Streets database

- 29 cities

Map showing cities included in the database:
- Montreal
- New York City
- Guadalajara
- Mexico City
- Bogota
- Buenos Aires
- Auckland
- Melbourne
- Edmonton
- Calgary
- Vancouver
- Guadalajara
- Mexico City
- Bogota
- Fortaleza
- Buenos Aires
- Amsterdam
- Stockholm
- Copenhagen
- London
- Paris
- Brussels
- Berlin
- Warsaw
- The Hague
- Brussels
- Madrid
- Barcelona
- Rome
- Belgrade
- Lisbon
- Fortaleza
Safer City Streets database

- 41 functional urban areas (FUAs)
- CARE database
Size and population of cities

bubble area = population

Paris City
New York City
Riga
London FUA
Melbourne

Admin. areas
Functional areas
## Safer City Streets database

### Cycling risk – data sources

<table>
<thead>
<tr>
<th>Administrative areas</th>
<th>Cycling casualties</th>
<th>Cycling trips and distance travelled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Local data (often police)</td>
<td>Local data (often travel survey)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Functional areas</th>
<th>England</th>
<th>Rest of Europe</th>
<th>CARE</th>
<th>NTS (National Travel Survey)</th>
<th>ITF estimation based on commuter mode share (Eurostat)</th>
</tr>
</thead>
</table>
Where more people cycle...

\[ y = 0.0534x^{0.2359} \]

Pedal cycle fatalities / 100,000 population vs. kilometres cycled per person per year for different regions:
- EU-NO-CH
- USA-CAN-AUS-NZ
- UK
- ITA

Fatalities per billion passenger-kilometre

- **Powered-2-Wheeler**: 45
- **Pedestrian**: 14
- **Pedal Cycle**: 11
- **Passenger Car**: 1.4
- **Bus**: 0.1

2011-2015 average
ITF Safer City Streets database

**Median /5 cities:**
- Auckland,
- Barcelona,
- Berlin,
- Greater London,
- Paris Area

P2W riders have a fatality risk 4x that of pedal cyclists
Where more people cycle...

\[ y = 5.3299x^{-0.218} \]

Fatality rate, all modes /100,000 population vs. kilometres cycled per person per year.

- EU-NO-CH
- USA-CAN-AUS-NZ
- UK
- ITA

Power (UK)

2011-2015 average
ITF Safer City Streets database
Cyclist fatalities per bn km cycled

80% confidence intervals reflecting natural fluctuations in casualty numbers

Benchmark includes areas with very low casualty counts

2011-2015 average
ITF Safer City Streets database
Cyclist fatalities per bn km cycled

80% confidence intervals reflecting natural fluctuations in casualty numbers

Benchmark is limited to areas with more than 5 fatalities in 5 years.

2011-2015 average
ITF Safer City Streets database
Serious injuries

• International Classification of Diseases (ICD)

• Abbreviated Injury Scale (AIS)
Cycling safety in numbers?

2011-2015 average
ITF Safer City Streets database
Cycling safety in numbers?

\[ y = 390.2x^{-0.663} \]

Fatalities on pedal cycles per billion kilometre cycled

Kilometres cycled per person per year

Low reliability

High reliability

Power (All)

2011-2015 average

ITF Safer City Streets database
What next?

• Publication of analysis in Spring 2018 as ITF Working Document

• Publication of further analysis in late 2018 as ITF-OECD report on access and safety in European cities
Recommendations

• Consider the collection of exposure data as key among cycling safety data questions

• Measure cycling trips and traffic information
  – in details with regular travel surveys
  – in alternative ways, with a larger sample (census, physical activity survey, VIAS MONITOR, Eurobarometer 419, crowd sourcing, mobile devices, etc.)
  – on a continuous basis: 365/7
Recommendations

• Take into consideration the risk to third parties

• Be ambitious in setting risk reduction targets

• Assess and monitor the true number of serious injuries
Thank you

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