National road accident statistics: worldwide practices for personal data protection

George Yannis, Professor
geyannis@central.ntua.gr

Department of Transportation Planning and Engineering
National Technical University of Athens, Athens, Greece
Background and Objective of the Study

- Personal data protection is a very important issue

- Road accident statistics data should not reveal the identity of people involved

- Countries have applied various practices worldwide for data protection

- **Objective of the study**
  - Investigation of the worldwide personal data protection practices for national road accident statistics
Survey – General Information

• The Survey was carried out by:
  • National Technical University of Athens
  • Hellenic Statistical Authority

• Participants
  • 18 IRTAD Countries
Survey - Participants

- 10 European countries
  - Austria
  - Belgium
  - Czech Republic
  - Finland
  - Germany
  - Ireland
  - The Netherlands
  - Slovenia
  - Sweden
  - Switzerland

- 8 Non-European countries
  - Canada
  - Chile
  - Colombia
  - Israel
  - Japan
  - Mexico
  - Turkey
  - USA
Data collection

5 questions:

1. National Organization producing and disseminating national statistics on road accidents
2. National Organization maintaining the national data
3. Protection of personal data
4. Restrictions of the data provided to the end users (accidents/patients/vehicles)
5. Additional practices for personal data protection
1&2. Organizations responsible for the data

<table>
<thead>
<tr>
<th>Country</th>
<th>Organization producing and disseminating the national statistics on road accident data</th>
<th>Organization maintaining the national data file with disaggregate road accident data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>Statistik Austria</td>
<td>Statistik Austria</td>
</tr>
<tr>
<td>Belgium</td>
<td>Statistics Production: National Statistical Institute</td>
<td>National Statistical Institute</td>
</tr>
<tr>
<td>Dissemination: Vias Institute (Federal road-safety institute and AWSR (Wallonian road safety institute)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>Transport Canada</td>
<td>Transport Canada</td>
</tr>
<tr>
<td>Chile</td>
<td>Police and National Road Safety Commission</td>
<td>Police and National Road Safety Commission</td>
</tr>
<tr>
<td>Colombia</td>
<td>The Road Safety Agency</td>
<td>The Road Safety Agency</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>The Police</td>
<td>The Police</td>
</tr>
<tr>
<td>Finland</td>
<td>Statistics Finland, Finnish Transport Agency</td>
<td>Statistics Finland, Finnish Transport Agency</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The Federal Highway Research Institute (BAST) receives all data files for accident research purposes</td>
</tr>
<tr>
<td>Ireland</td>
<td>The Road Safety Authority (RSA)</td>
<td>The Road Safety Authority (RSA)</td>
</tr>
<tr>
<td>Israel</td>
<td>Data upholding and analysis: National Road Safety Authority</td>
<td>Central Bureau of Statistics and the National Road Safety Authority</td>
</tr>
<tr>
<td>Dissemination: The Central Bureau of Statistics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td>National Police Agency</td>
<td>National Police Agency</td>
</tr>
<tr>
<td>Mexico</td>
<td>National Institute of Statistics and Geography</td>
<td>Local transit agencies of each municipality</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>Rijkswaterstaat (The National Highway Authority)</td>
<td>Rijkswaterstaat (The National Highway Authority)</td>
</tr>
<tr>
<td>Sweden</td>
<td>Swedish Transport Agency, Transport Analysis</td>
<td>Swedish Transport Agency</td>
</tr>
<tr>
<td>Switzerland</td>
<td>Swiss Federal Roads Office</td>
<td>Swiss Federal Roads Office</td>
</tr>
<tr>
<td>Turkey</td>
<td>Statistics Production: General Directorate of Security and General Command of Gendarme</td>
<td>General Directorate of Security and General Command of Gendarme</td>
</tr>
<tr>
<td></td>
<td>Statistics dissemination: Turkish Statistical Institute</td>
<td></td>
</tr>
<tr>
<td>USA</td>
<td>Data compilation: 50 States and District Of Columbia</td>
<td>National Highway Traffic Safety Administration (NHTSA). Individual States collect motor vehicle crash data for their States</td>
</tr>
</tbody>
</table>
3. Protection of personal data

- All countries have established legal framework for protecting personal data included in the road accident databases

- Exception → Austria
  - no personal data is included

- Special case → Ireland
  - In serious collisions, it may be possible to indirectly identify a person and this possibility means the data can only be pseudo anonymized
3. Protection of personal data

<table>
<thead>
<tr>
<th>Country</th>
<th>Are the statistical data collected by the Police protected by a clause of personal data confidentiality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>No personal data are included in the injury accident data set.</td>
</tr>
<tr>
<td>Belgium</td>
<td>Yes, only a limited number of institutes have access to the disaggregated data. Researchers have to sign a non-disclosure contract.</td>
</tr>
<tr>
<td>Canada</td>
<td>Data considered as personal or confidential is not sent to Transport Canada or removed. There is also a Data Sharing Protocol with the provinces and territories.</td>
</tr>
<tr>
<td>Chile</td>
<td>Yes, the personal data is protected by the Personal Data Confidentiality Act (number 19.628 of 1999)</td>
</tr>
<tr>
<td>Colombia</td>
<td>The data is delivered in an aggregate manner and for no reason at the microdata level</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>Yes, they are protected (before all personal ID, name and vehicle number plate).</td>
</tr>
<tr>
<td>Finland</td>
<td>Yes</td>
</tr>
<tr>
<td>Germany</td>
<td>Yes</td>
</tr>
<tr>
<td>Ireland</td>
<td>Yes. The RSA has a statutory remit to distribute such information and statistics relating to road safety and the functions of the Authority as per the Road Safety Authority Act, 2006.</td>
</tr>
<tr>
<td>Israel</td>
<td>Yes. The identified data is maintained by the central bureau of statistics only.</td>
</tr>
<tr>
<td>Japan</td>
<td>Yes</td>
</tr>
<tr>
<td>Mexico</td>
<td>The data reported by the police does not take personal data, only general data of the accident.</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>Yes. The data is provided according to law to Rijkswaterstaat for use and dissemination with/within the Road Safety Database. The data does contain privacy sensitive datafields and is “processed” in a secluded environment by authorized staff.</td>
</tr>
<tr>
<td>Slovenia</td>
<td>When Police is sending data to other organizations (like Statistic Office, Traffic Safety Agency etc.) they never sent personal information.</td>
</tr>
<tr>
<td>Sweden</td>
<td>Yes. The data is protected by a &quot;statistical privacy&quot; statement in the Public Access to Information and Secrecy Act. People working with road safety have to sign a secrecy agreement</td>
</tr>
<tr>
<td>Switzerland</td>
<td>Yes. A data protection contract is required for raw data and for aggregated data disclosing individual information</td>
</tr>
<tr>
<td>Turkey</td>
<td>Yes. Statistical data collected by Police is protected in compliance with Personal Data Protection Law.</td>
</tr>
<tr>
<td>USA</td>
<td>Yes. Crash data containing personally identifiable information (PII) is protected by a variety of federal and State laws.</td>
</tr>
</tbody>
</table>
4. Restrictions of the data provided to the end users

- Minimum number of cases (accidents/persons/vehicles) allowed to be contained at the statistical tables provided to the end users

- Two cases
  - data without time and place (location) specification
  - data with time and/or place (location) specification

- Most of the countries do not apply any minimum standard
4. Restrictions of the data provided to the end users

No minimum standards specified

- Austria
- Chile
- Colombia
- Czech Republic
- Ireland
- Slovenia
- Switzerland
- Canada
- Japan (statistical tables with consideration)
- Germany
- Sweden (but minimum of 3 cases per cell in the future)
- USA
- Mexico
4. Restrictions of the data provided to the end users

Countries with specific restrictions

- Belgium
  - Minimum number of 3
- Finland
  - 1 accident or 1 killed person (without time and place specification)
  - Individual road accidents, free for everybody, with a limited number of data (with time and/or place specification)
- Israel
  - Minimum number less than 5 (if no identifying data of the involved persons are included)
- The Netherlands
  - Age groups are used instead of concrete age
- Turkey
  - Every road accident is contained in the statistical table as the number of accident is 1 and the number of person and vehicle can be at least 1.
5. Additional practices for personal data protection

- In most countries the data provided to the end users do not contain any personal information

  - **Belgium**: it is not allowed to provide disaggregated data to the end user
  - **Canada**: any confidential or personal data is removed
  - **Chile**: Vehicle license plate is not given
  - **Germany**: the statistics do not contain any personal data
  - **Ireland**: data as license plate number, make or model of the vehicle, vehicle insurance, name address and tax compliance are excluded.
  - **Israel**: identifying data is not provided
  - **Slovenia**: no personal data
  - **Switzerland**: personal data are not included in the dataset
5. Additional practices for personal data protection

- **Other practices**
  - **Austria**: end users are exclusively experts
  - **Colombia**: there is a data policy but is not officially approved yet
  - **Finland**: data are provided only for research purposes
  - **Mexico**: official institution protecting personal data (National Institute of Transparency)
  - **The Netherlands**: National Privacy Authority
  - **Turkey**: Turkish Personal Data Protection Law
  - **USA**: Privacy Act and Health Insurance Portability and Accountability Act (HIPAA)

- **No other practices are applied**
  - Czech Republic
  - Japan
  - Sweden
Conclusions

• National Organizations and Institutions worldwide are responsible for producing analyzing and maintaining road accident statistics.

• All countries are considering seriously the data security issue in the field of accident statistics

• Laws have been established and practices are applied towards this direction

• Restrictions are applied to accident data, in terms of the information the end users receive
National road accident statistics: worldwide practices for personal data protection

George Yannis, Professor
geyannis@central.ntua.gr

Department of Transportation Planning and Engineering
National Technical University of Athens, Athens, Greece