



# *Consolidating road safety data and knowledge to support decision making in Europe*

George Yannis, Associate Professor

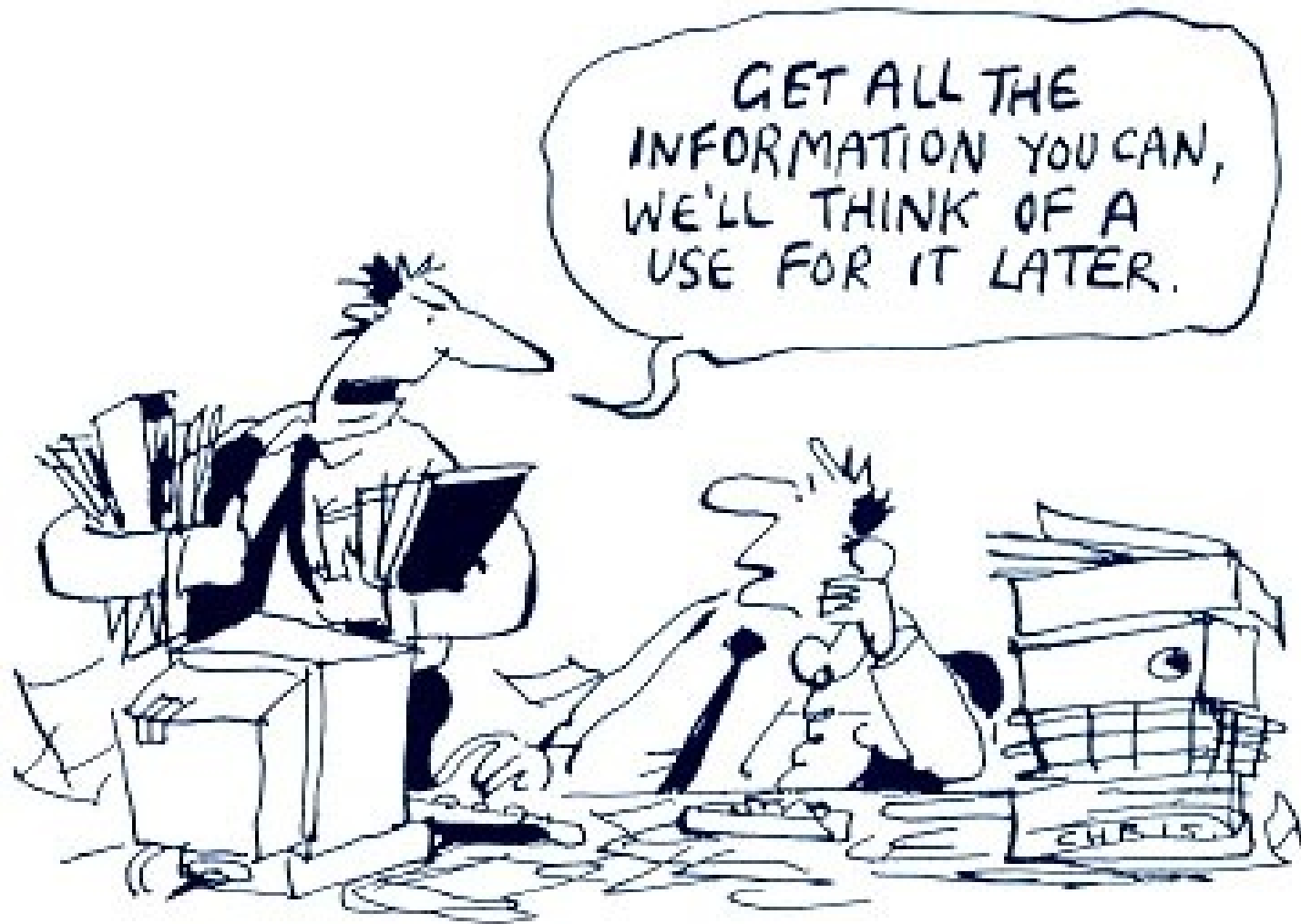
Petros Evgenikos, Research Associate

National Technical University of Athens, Greece



# *Need for an assembly of useful data/information to support road safety decision making*

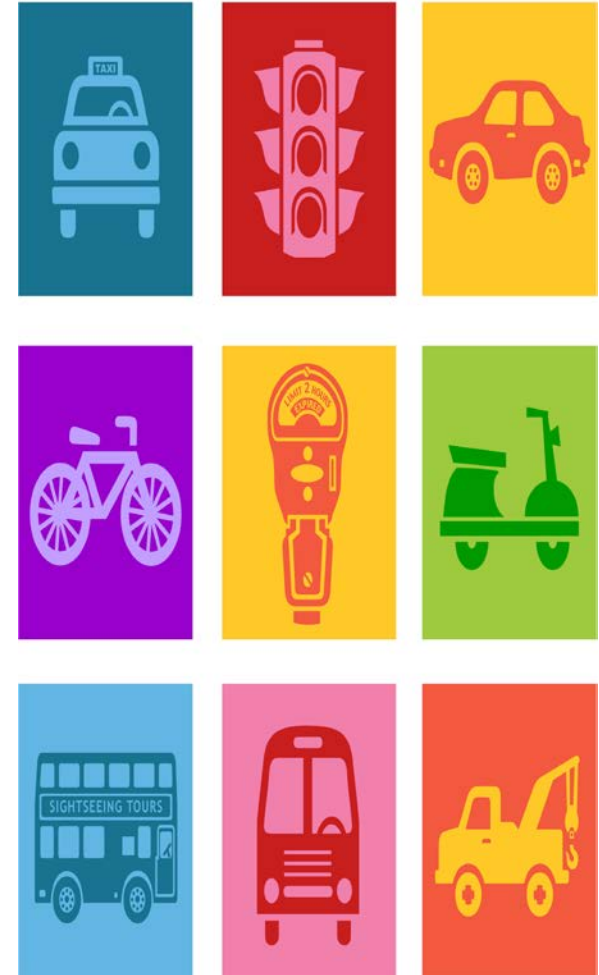
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# *Need for an assembly of useful data/information to support road safety decision making*

- Facilitate policy making at EU and national level
- Support the road safety analyses, country overviews, country benchmarking
- Make available to the wide public a wide range of road safety data assisting any type of road safety activity

**Data and Information** collected and organised in a way to allow for their combined processing.



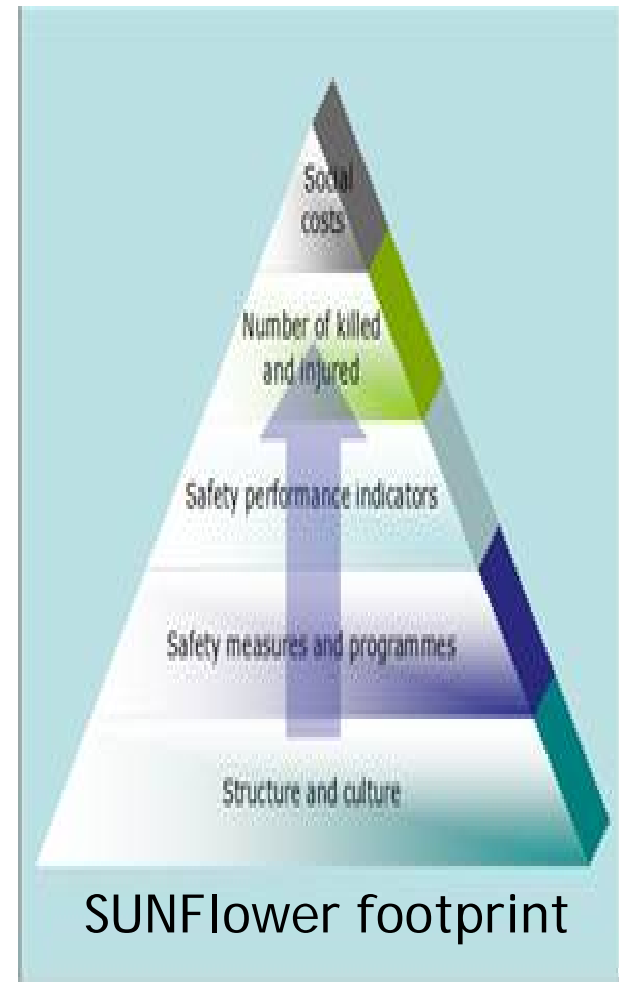
# Methodology

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- Processing of all data and knowledge took place within the [Dacota](#) EU co-funded research project (2010-2012)
- These results are regularly updated and are also published at the European Road Safety Observatory of the European Commission ([www.erso.eu](http://www.erso.eu)).
- Data used in this research were extracted from:
  - the [CARE](#) database of the European Commission with disaggregate data on road fatalities,
  - in depth road accident investigation surveys carried out within the [SafetyNet](#) EU-co-funded research project (2004-2008)

# National Knowledge

- Road safety programs
  - Data on basic road safety programs in
  - 29 European countries
- Road safety measures
  - 655 safety measures identified for
  - 34 different measures sub-categories
- Traffic rules
  - 46 different traffic rules into 4 main groups
  - for all 29 European Countries
- Road user behaviour/attitude
  - Issues related to driver behaviour (self-reported): Speeding, Drink driving, etc.
  - Attitudes towards risk taking regarding: Alcohol and drugs, Speeding, etc.
- Road accident cost



# National Data - Dakota Master Tables

- **Road accident data**
  - 73 road accident elements from existing CARE variables and values.
- **Risk-Exposure data**
  - 73 Risk-Exposure elements on population, vehicle fleet, motorization level, person-kms, vehicle-kms, etc.
- **Safety Performance Indicators**
  - 39 elements related to SPI on alcohol and drugs, protective systems, speeding, enforcement, DRL and vehicle safety.
- **Accident Causation Indicators**
  - Harmonised in-depth data for 1006 cases in 6 EU countries collected in SafetyNet.
- **Health Indicators**
  - Indicators based on hospital data from the Health IDB



# DaCoTA Master Tables

- Comprehensive Tables for all types of national data and information.
- 263 data elements identified and filled-in for 30 European countries.
- Verification by national experts.

|  | A     | B     | C     | D     | E     | F     | G     | H     | I     | J     | K     | L     | M     | N     | O     | P     | Q     | R     | S     | T     | U     | V     | W     | X     | Y     | Z     |  |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|
| Time Series Road Safety Data (1975-2010) |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  |
|  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  |
| <b>Number of persons killed</b>          |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  |
| 41) females killed                       | 0 102 | 2 150 | 2 156 | 1 335 | 2 411 | 2 107 | 2 032 | 2 162 | 2 110 | 2 017 | 1 833 | 1 834 | 1 833 | 1 870 | 1 833 | 1 833 | 1 833 | 1 833 | 1 833 | 1 833 | 1 833 | 1 833 | 1 833 | 1 833 | 1 833 | 1 833 |  |
| 42) age group 0-14 (children)            | 1 142 | 1 183 | 1 210 | 1 381 | 1 207 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 |  |
| 43) age group 15-17                      | 116   | 111   | 9     | 41    | 11    | 5     | 41    | 31    | 5     | 41    | 31    | 5     | 41    | 31    | 5     | 41    | 31    | 5     | 41    | 31    | 5     | 41    | 31    | 5     | 41    | 31    |  |
| 44) age group 18-24                      | 200   | 181   | 27    | 331   | 191   | 200   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   |  |
| 45) age group 25-45                      | 501   | 701   | 771   | 561   | 621   | 731   | 561   | 621   | 731   | 561   | 621   | 731   | 561   | 621   | 731   | 561   | 621   | 731   | 561   | 621   | 731   | 561   | 621   | 731   | 561   | 621   |  |
| 46) age group 46-64                      | 102   | 91    | 103   | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    |  |
| 47) age group 65+                        | 342   | 331   | 336   | 343   | 337   | 334   | 333   | 333   | 333   | 333   | 333   | 333   | 333   | 333   | 333   | 333   | 333   | 333   | 333   | 333   | 333   | 333   | 333   | 333   | 333   | 333   |  |
| 48) amount                               | 0     | 1     | 4     | 11    | 6     | 12    | 12    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    |  |
| 49) Total vehicle occupants killed       | 1 836 | 1 834 | 1 831 | 1 744 | 1 835 | 1 736 | 1 698 | 1 735 | 1 717 | 1 602 | 1 422 | 1 395 | 1 345 | 1 377 | 1 424 | 1 395 | 1 395 | 1 395 | 1 395 | 1 395 | 1 395 | 1 395 | 1 395 | 1 395 | 1 395 | 1 395 |  |
| 50) vehicle age 1 year                   | 110   | 144   | 84    | 101   | 97    | 80    | 76    | 81    | 83    | 124   | 100   | 82    | 117   | 87    | 103   | 104   | 82    | 83    | 85    | 85    | 85    | 85    | 85    | 85    | 85    | 85    |  |
| 51) vehicle age 1-5 years                | 245   | 231   | 234   | 231   | 227   | 237   | 243   | 271   | 305   | 210   | 242   | 262   | 251   | 242   | 244   | 242   | 246   | 207   | 179   |       |       |       |       |       |       |       |  |
| 52) vehicle age 5-15 years               | 472   | 431   | 512   | 523   | 533   | 526   | 571   | 589   | 579   | 558   | 558   | 570   | 559   | 558   | 559   | 559   | 559   | 559   | 559   | 559   | 559   | 559   | 559   | 559   | 559   | 559   |  |
| 53) vehicle age 15-15 years              | 472   | 425   | 497   | 494   | 512   | 500   | 533   | 566   | 558   | 526   | 526   | 526   | 526   | 526   | 526   | 526   | 526   | 526   | 526   | 526   | 526   | 526   | 526   | 526   | 526   | 526   |  |
| 54) vehicle age 15-15 years              | 569   | 476   | 566   | 495   | 542   | 568   | 542   | 542   | 542   | 542   | 542   | 542   | 542   | 542   | 542   | 542   | 542   | 542   | 542   | 542   | 542   | 542   | 542   | 542   | 542   | 542   |  |
| 55) amount                               | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |  |
| 56) passenger car occupants              | 720   | 689   | 744   | 646   | 689   | 671   | 672   | 692   | 698   | 611   | 708   | 772   | 747   | 768   | 836   | 799   | 791   | 791   | 791   | 791   | 791   | 791   | 791   | 791   | 791   | 791   |  |
| 57) vehicle age 1 year                   | 80    | 91    | 38    | 50    | 42    | 33    | 34    | 38    | 40    | 57    | 46    | 53    | 46    | 56    | 56    | 43    | 43    | 43    | 43    | 43    | 43    | 43    | 43    | 43    | 43    | 43    |  |
| 58) vehicle age 1-5 years                | 182   | 153   | 191   | 142   | 171   | 188   | 182   | 188   | 177   | 158   | 182   | 182   | 182   | 182   | 182   | 182   | 182   | 182   | 182   | 182   | 182   | 182   | 182   | 182   | 182   | 182   |  |
| 59) vehicle age 5-15 years               | 366   | 379   | 341   | 346   | 367   | 361   | 373   | 369   | 361   | 361   | 361   | 361   | 361   | 361   | 361   | 361   | 361   | 361   | 361   | 361   | 361   | 361   | 361   | 361   | 361   | 361   |  |
| 60) amount                               | 230   | 224   | 173   | 166   | 165   | 166   | 166   | 166   | 166   | 166   | 166   | 166   | 166   | 166   | 166   | 166   | 166   | 166   | 166   | 166   | 166   | 166   | 166   | 166   | 166   | 166   |  |
| 61) motorcycle killed                    | 317   | 236   | 173   | 206   | 207   | 182   | 146   | 133   | 145   | 113   | 113   | 113   | 113   | 113   | 113   | 113   | 113   | 113   | 113   | 113   | 113   | 113   | 113   | 113   | 113   | 113   |  |
| 62) amount                               | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |  |
| 63) transport truck killed               | 316   | 245   | 220   | 267   | 261   | 418   | 323   | 435   | 425   | 436   | 428   | 341   | 316   | 316   | 316   | 316   | 316   | 316   | 316   | 316   | 316   | 316   | 316   | 316   | 316   | 316   |  |
| 64) vehicle age 1 year                   | 34    | 34    | 31    | 21    | 21    | 31    | 18    | 43    | 33    | 64    | 44    | 33    | 38    | 28    | 38    | 38    | 38    | 38    | 38    | 38    | 38    | 38    | 38    | 38    | 38    | 38    |  |
| 65) vehicle age 1-5 years                | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    |  |
| 66) vehicle age 5-15 years               | 102   | 124   | 133   | 151   | 153   | 166   | 142   | 162   | 166   | 166   | 166   | 166   | 166   | 166   | 166   | 166   | 166   | 166   | 166   | 166   | 166   | 166   | 166   | 166   | 166   | 166   |  |
| 67) amount                               | 13    | 14    | 15    | 26    | 20    | 36    | 43    | 51    | 31    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    |  |
| 68) amount                               | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |  |
| 69) roped men killed                     | 177   | 183   | 211   | 206   | 207   | 123   | 114   | 114   | 100   | 86    | 77    | 66    | 53    | 66    | 66    | 66    | 66    | 66    | 66    | 66    | 66    | 66    | 66    | 66    | 66    | 66    |  |
| 70) amount                               | 24    | 21    | 57    | 20    | 34    | 20    | 32    | 34    | 20    | 26    | 14    | 21    | 24    | 18    | 21    | 24    | 18    | 21    | 18    | 21    | 18    | 21    | 18    | 21    | 18    | 21    |  |
| 71) coaches or coaches occupants killed  | 22    | 9     | 4     | 12    | 14    | 9     | 12    | 12    | 12    | 9     | 4     | 9     | 8     | 8     | 8     | 8     | 8     | 8     | 8     | 8     | 8     | 8     | 8     | 8     | 8     | 8     |  |
| 72) amount                               | 200   | 180   | 173   | 173   | 200   | 195   | 195   | 146   | 124   | 116   | 83    | 100   | 91    | 84    | 100   | 88    | 79    | 81    |       |       |       |       |       |       |       |       |  |
| 73) amount                               | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |  |
| 74) killed in accidents with HGV         | 54    | 37    | 58    | 86    | 82    | 54    | 17    | 40    | 58    | 26    | 20    | 20    | 26    | 19    | 19    | 19    | 20    | 14    | 16    |       |       |       |       |       |       |       |  |
| 75) amount                               | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |  |
| 76) females killed                       | 472   | 424   | 486   | 514   | 523   | 506   | 446   | 471   | 452   | 449   | 416   | 391   | 395   | 384   | 395   | 395   | 395   | 395   | 395   | 395   | 395   | 395   | 395   | 395   | 395   | 395   |  |
| 77) age group 0-14 (children)            | 301   | 281   | 281   | 331   | 281   | 281   | 271   | 211   | 211   | 211   | 211   | 211   | 211   | 211   | 211   | 211   | 211   | 211   | 211   | 211   | 211   | 211   | 211   | 211   | 211   | 211   |  |
| 78) age group 15-17                      | 14    | 11    | 11    | 22    | 6     | 11    | 17    | 17    | 17    | 17    | 17    | 17    | 17    | 17    | 17    | 17    | 17    | 17    | 17    | 17    | 17    | 17    | 17    | 17    | 17    | 17    |  |
| 79) age group 18-24                      | 81    | 68    | 81    | 79    | 81    | 79    | 67    | 62    | 62    | 62    | 62    | 62    | 62    | 62    | 62    | 62    | 62    | 62    | 62    | 62    | 62    | 62    | 62    | 62    | 62    | 62    |  |
| 80) age group 25-45                      | 118   | 180   | 187   | 164   | 169   | 184   | 146   | 169   | 169   | 169   | 169   | 169   | 169   | 169   | 169   | 169   | 169   | 169   | 169   | 169   | 169   | 169   | 169   | 169   | 169   | 169   |  |
| 81) age group 46-64                      | 112   | 82    | 87    | 109   | 87    | 77    | 86    | 81    | 81    | 81    | 81    | 81    | 81    | 81    | 81    | 81    | 81    | 81    | 81    | 81    | 81    | 81    | 81    | 81    | 81    | 81    |  |
| 82) age group 65+                        | 108   | 118   | 148   | 122   | 122   | 168   | 110   | 147   | 122   | 122   | 122   | 122   | 122   | 122   | 122   | 122   | 122   | 122   | 122   | 122   | 122   | 122   | 122   | 122   | 122   | 122   |  |
| 83) amount                               | 0     | 0     | 0     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |  |
| 84) males killed                         | 1 836 | 1 709 | 1 682 | 1 700 | 1 614 | 1 698 | 1 646 | 1 683 | 1 683 | 1 683 | 1 683 | 1 683 | 1 683 | 1 683 | 1 683 | 1 683 | 1 683 | 1 683 | 1 683 | 1 683 | 1 683 | 1 683 | 1 683 | 1 683 | 1 683 | 1 683 |  |
| 85) age group 0-14 (children)            | 1 142 | 1 183 | 1 210 | 1 381 | 1 207 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 | 1 203 |  |
| 86) age group 15-17                      | 116   | 111   | 9     | 41    | 11    | 5     | 41    | 31    | 5     | 41    | 31    | 5     | 41    | 31    | 5     | 41    | 31    | 5     | 41    | 31    | 5     | 41    | 31    | 5     | 41    | 31    |  |
| 87) age group 18-24                      | 200   | 181   | 27    | 331   | 191   | 200   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   |  |
| 88) age group 25-45                      | 501   | 701   | 771   | 561   | 621   | 731   | 561   | 621   | 731   | 561   | 621   | 731   | 561   | 621   | 731   | 561   | 621   | 731   | 561   | 621   | 731   | 561   | 621   | 731   | 561   | 621   |  |
| 89) age group 46-64                      | 102   | 91    | 103   | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    | 83    |  |
| 90) age group 65+                        | 342   | 331   | 336   | 343   | 337   | 334   | 333   | 333   | 333   | 333   | 333   | 333   | 333   | 333   | 333   | 333   | 333   | 333   | 333   | 333   | 333   | 333   | 333   | 333   | 333   | 333   |  |
| 91) amount                               | 0     | 1     | 4     | 11    | 6     | 12    | 12    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    | 16    |  |
| 92) gender (males killed) 15-54          | 271   | 330   | 320   | 319   | 266   | 274   | 260   | 273   | 265   | 241   | 263   | 185   | 202   | 192   | 202   | 221   | 221   | 221   | 221   | 221   | 221   | 221   | 221   | 221   | 221   | 221   |  |
| 93) gender (females killed) 15-54        | 102   | 142   | 177   | 210   | 196   | 214   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   | 191   |  |
| 94) gender (others killed) 15-54         | 74    | 81    | 104   | 107   | 136   | 117   | 140   | 152   | 142   | 153   | 153   | 153   | 153   | 153   | 153   | 153   | 153   | 153   | 153   | 153   | 153   | 153   | 153   | 153   | 153   | 153   |  |

# Meta-data

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- Meta data: background information necessary for properly using the data.
- Collection of all related meta-data (sources, information, definitions, data quality and reliability, processes, etc.).
- 21 main elements for each type of collected data.



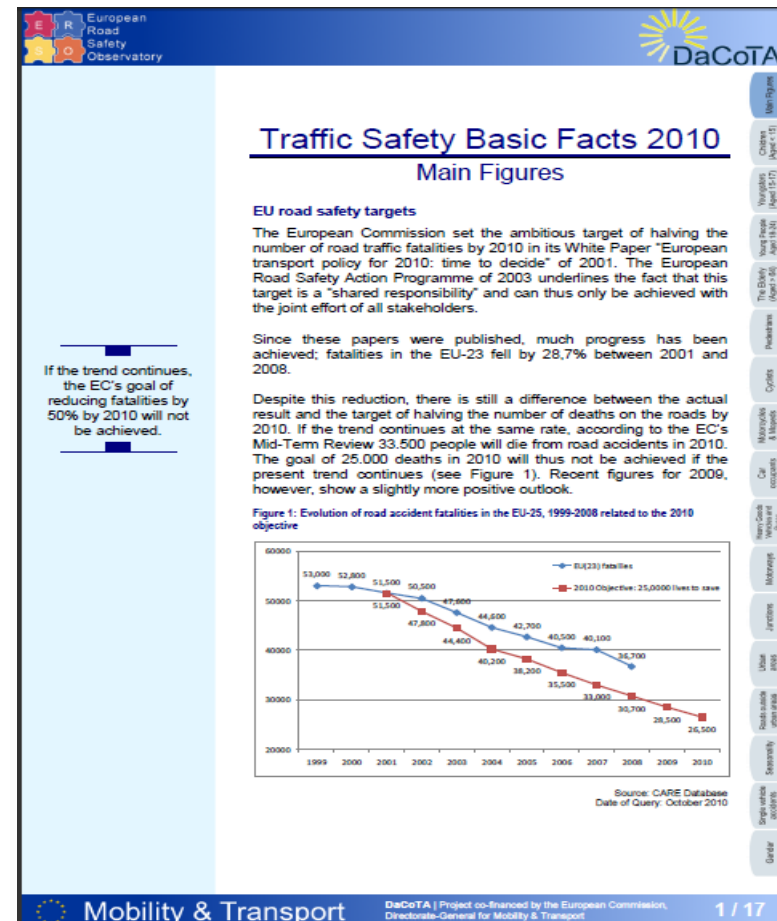


# Basic Fact Sheets

- 17 BFSs with data for the decade 1999-2008.

|                              |                           |
|------------------------------|---------------------------|
| Main Figures                 | Pedestrians               |
| Motorcycles & Mopeds         | Cyclists                  |
| Junctions                    | Urban areas               |
| Children (aged <15)          | Youngsters (aged 15-17)   |
| Car occupants                | Single vehicle accidents  |
| Young People (aged 18-24)    | Seasonality               |
| Heavy Goods Vehicles & Buses | Roads outside urban areas |
| The Elderly (aged >65)       | Gender                    |
| Motorways                    |                           |

- Highlights of interesting issues.
- In-depth accident causation data & maps.

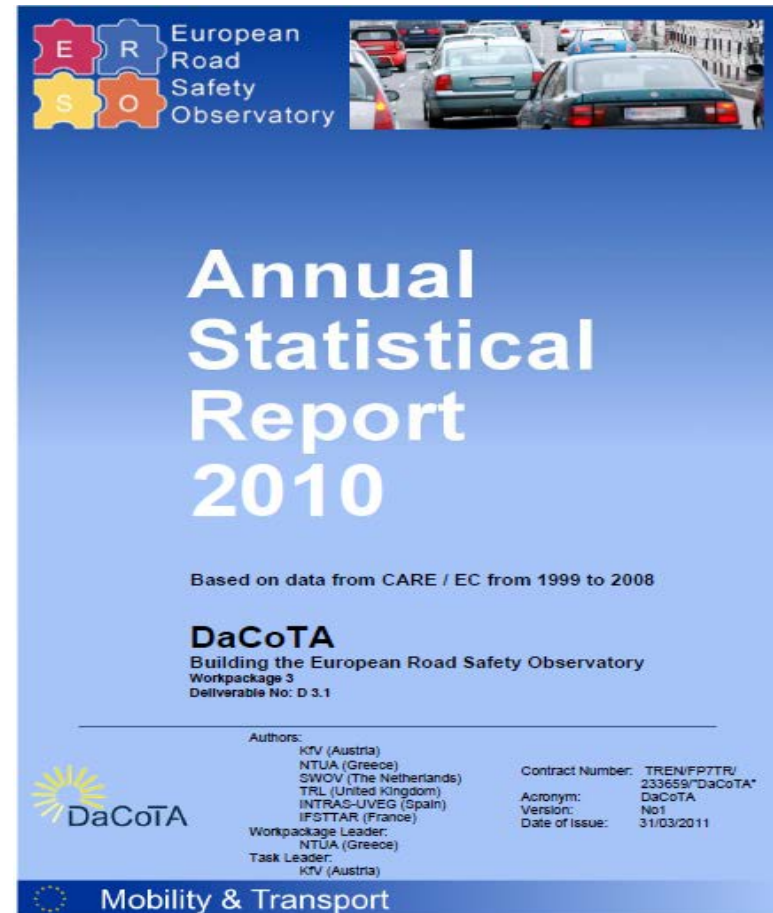


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<http://www.europa.eu.int/comm/transport/care/studies>

# Annual Statistical Report

- Data of 27 European countries for the period 1999-2008.
- Selection of basic characteristics of fatal road accidents.
- 56 Tables and 29 figures with the most interesting combination of road accident data.



**DOWNLOAD IT NOW**

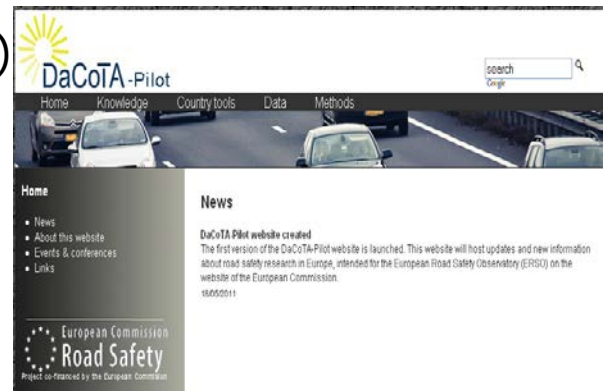
<http://www.europa.eu.int/comm/transport/care/studies>

# DaCoTA Pilot System

A web-based information system (Dacota Pilot System) is developed, in which all knowledge and data produced within the Dacota project are organised and presented through a user-friendly interface:

- Statistics (crash, exposure, RSPI, etc.)
- Interactive Statistics
- Knowledge (syntheses)
- Tools (forecasts, country overviews/benchmarking)
- Links (more than 1000 stakeholders in Europe)

After the test phase, this pilot system will be incorporated at the [European Road Safety Observatory](#).





## *Consolidating road safety data and knowledge to support decision making in Europe*

George Yannis, Associate Professor

Petros Evgenikos, Research Associate

National Technical University of Athens, Greece

