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## 856 Comparative analysis of road accidents by gender in Europe

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### Abstract

In 2013, 26.090 people were killed in road accidents throughout the EU, approximately 6.200 females and 19.800 males. Females account for 51% of the total EU population, but only 24% of all road fatalities.

The objective of this research is the analysis of basic road safety parameters related to road users' gender in the EU countries, by the use of the EU CARE database with disaggregated data on road accidents and of other data sources such as Eurostat. Time-series data on road accident fatalities by gender from 28 EU countries over a period of 10 years (2004–2013) are correlated with basic safety parameters, such as age, road user type and transport mode. Data from the EU Injury Database are also used to identify injury patterns and improve the assessment of injury severity and additional insight into accident causation for road users by gender is offered through the use of in-depth accident data from the EC SafetyNet project Accident Causation System (SNACS).

In all EU countries, road fatalities decreased between 2004 and 2013 for both females and males. Besides the trends of that period, the proportion of male road fatalities did not change significantly. Amongst EU countries a slight tendency for male proportions to be higher in south is noted. Additionally, the ratio between male and female fatalities increases with age, reaches a peak between the ages of 30–44 and then falls, which reflects a specific gender development in the travel behaviour of men and women in Europe. As regards the road user type, the proportion of passengers' or pedestrians' fatalities is higher for females than the males, while the opposite is true for drivers.

The results of the analysis allow for an overall assessment of the gender-differentiated safety level in the European road network, providing thus useful support to decision makers working for the improvement of safety in the European road network



## Introduction

- In 2014, about 26.000 people were killed in road accidents in the EU, with 6.200 of them being females and 19.800 being males.
- Different gender characteristics and behaviors are reflected in road accidents.
- While females represent 51% of the total EU population, they account only for 24% of all road fatalities.

## Objective

The objective of this research is the analysis of basic road safety parameters related to road users' gender in the EU countries, using the EU CARE database with disaggregate data on road accidents, the EU Injury Database (EU IDB) and the SafetyNet Accident Causation System (SNACS).

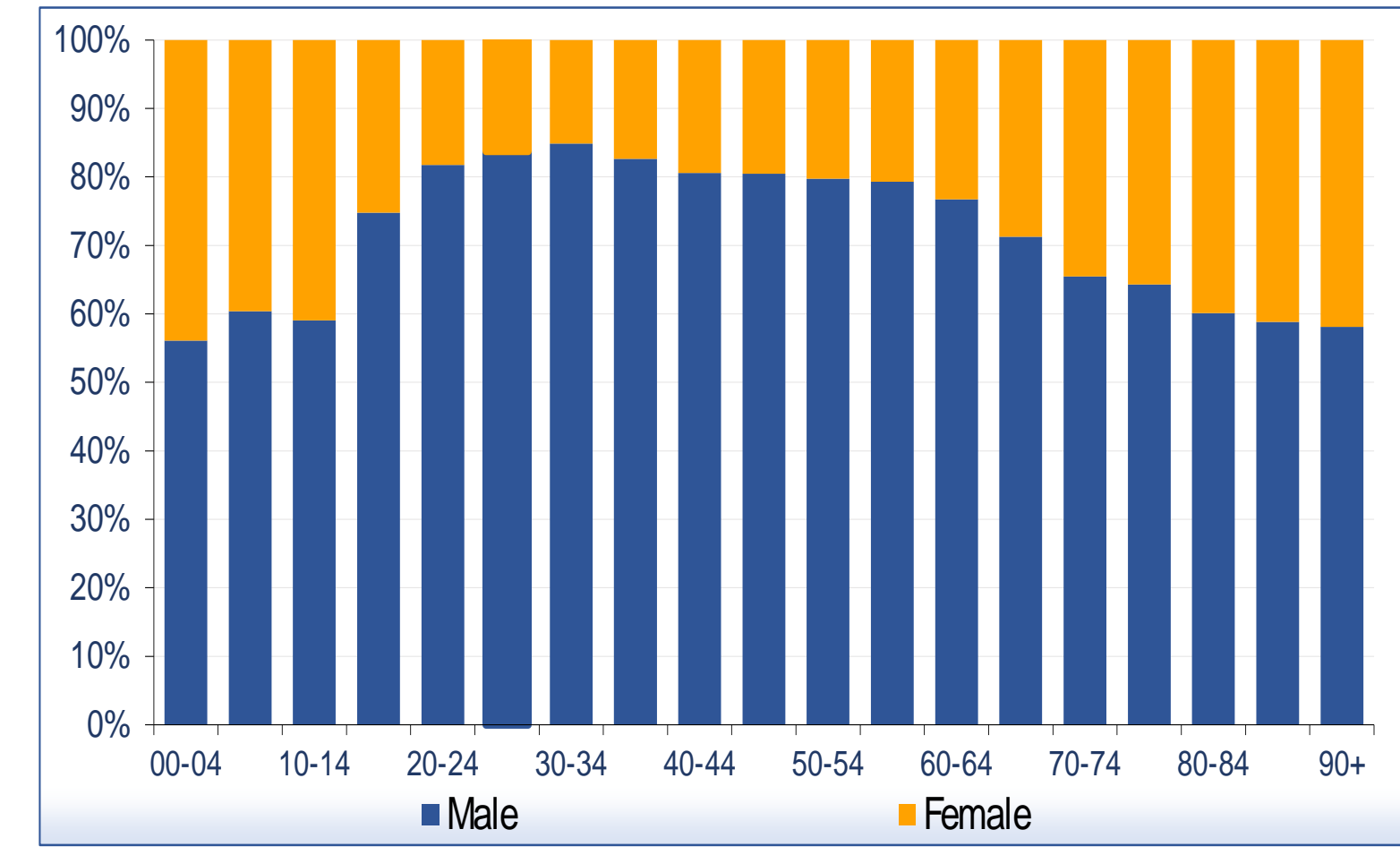
## Methodology

- Macroscopic road accident data from the EU CARE database, in-depth accident data from the SafetyNet Accident Causation System (SNACS) and injury data from the EU Injury Database (EU IDB).
- Macroscopic time series data from 28 EU countries for the period 2005-2014.
- In-depth data from 6 EU countries for the period 2005-2008 using a common methodology.
- Injury data from hospitals in 9 EU countries for the period 2005-2008 using a common methodology.
- Road accident data correlated with basic safety parameters:
  - casualty age
  - road user type
  - mode of transport
- Available risk exposure data from other international data files (Eurostat, etc.).

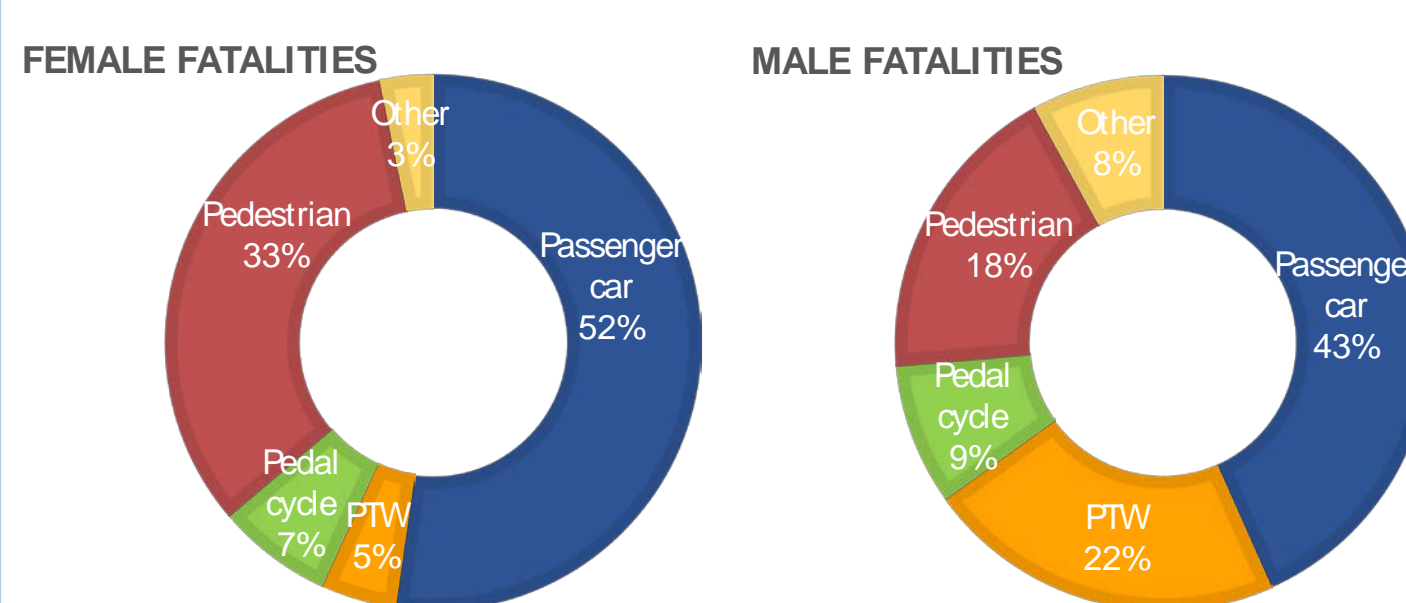


## Age Group

- The ratio between male and female fatalities increases with age.
- The peak in the percentage of male fatalities occurred in the 30-44 age group (84%).
- A specific gender development in the travel behaviour of males and females in the EU is reflected.



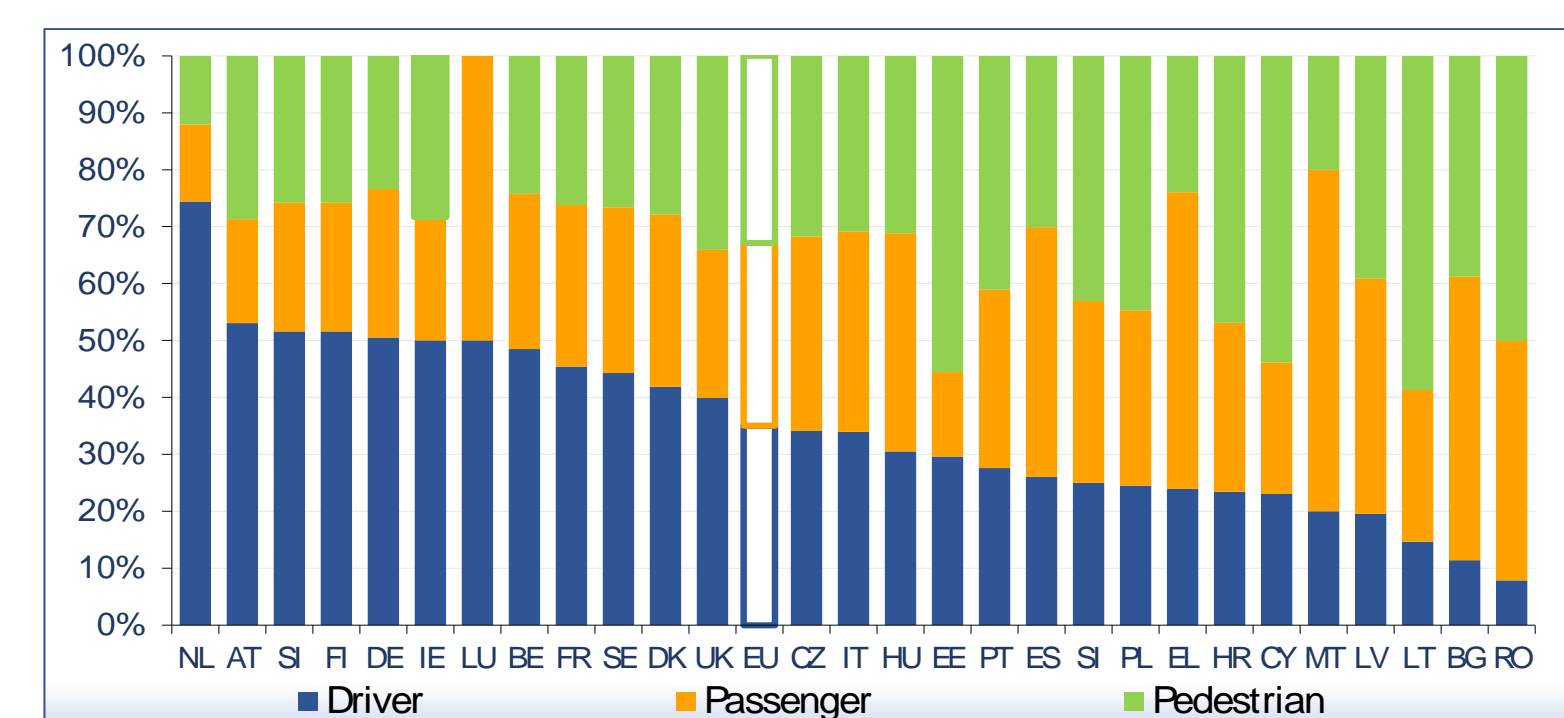
## Mode of Transport



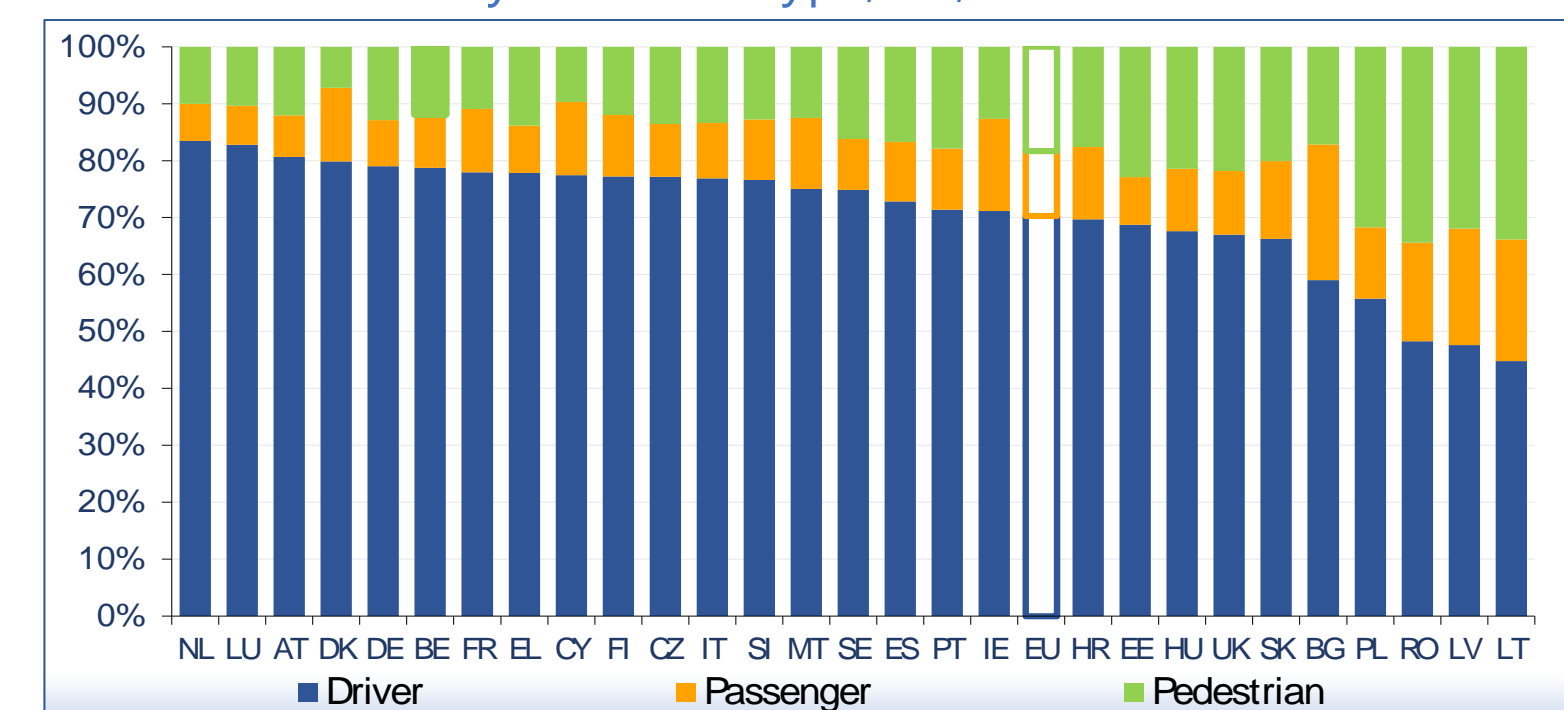
- More females than males were killed in passenger cars.
- Proportionately far more males than females were riding motorcycles.
- The proportion of fatalities who were pedestrians was almost twice as high for females as for males.

## Road User Type

- Only 35% of female fatalities were drivers, compared to 70% of males.
- Male fatalities who were drivers exceeded 80% in the Netherlands and Austria.
- The percentage of passengers' and pedestrians' fatalities was higher for females than for males.



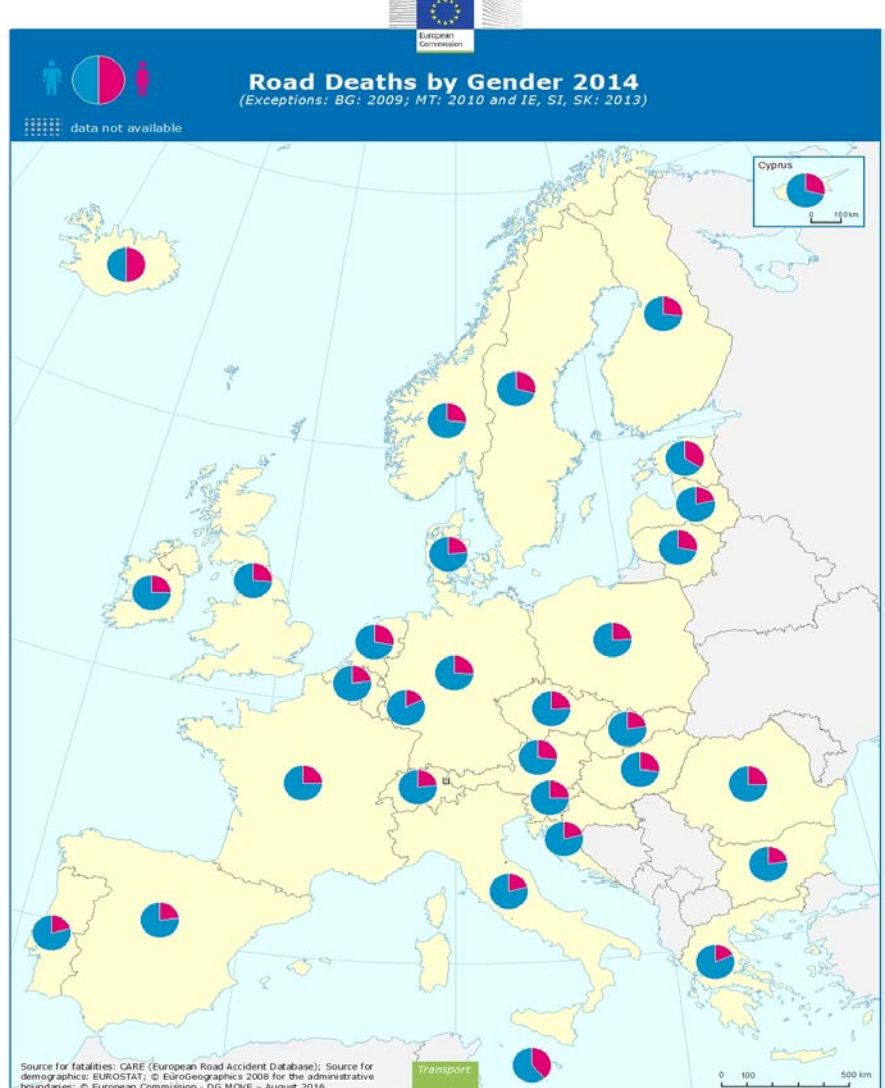
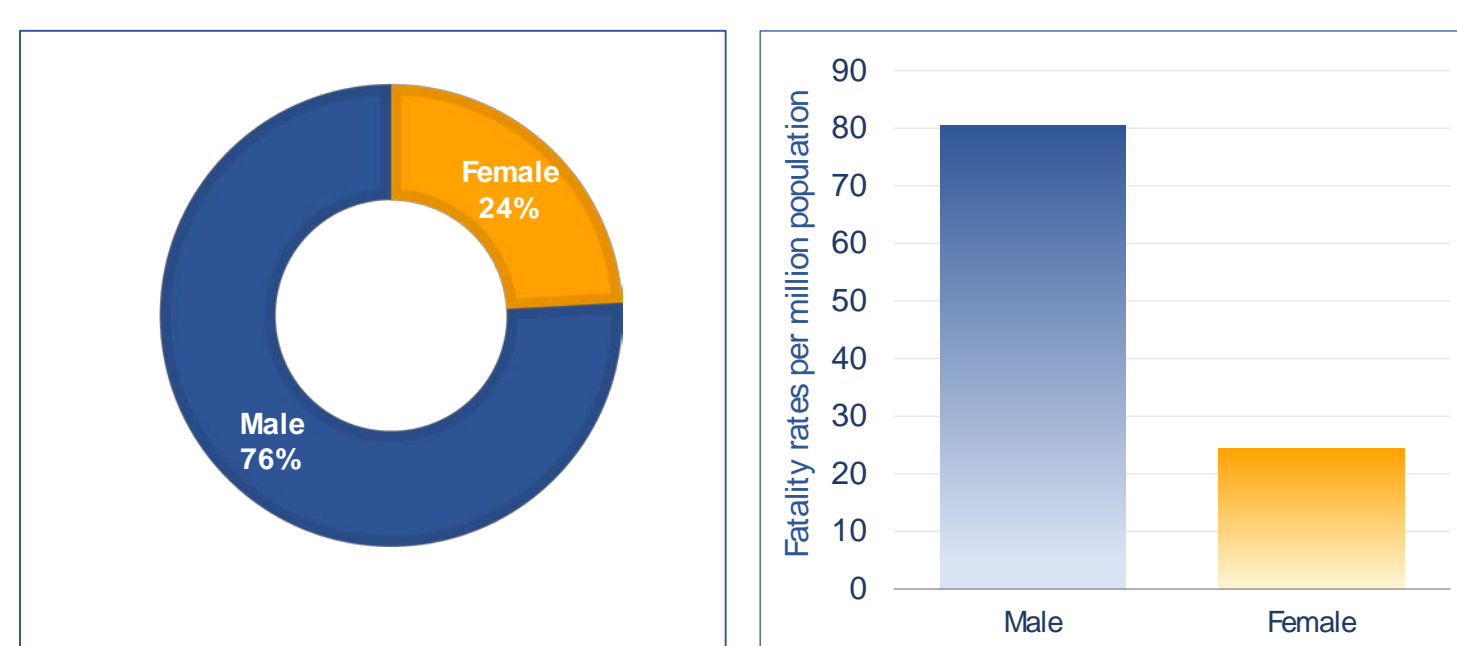
Female fatalities by road user type, EU, 2014



Male fatalities by road user type, EU, 2014

## The relationship between male and female fatalities

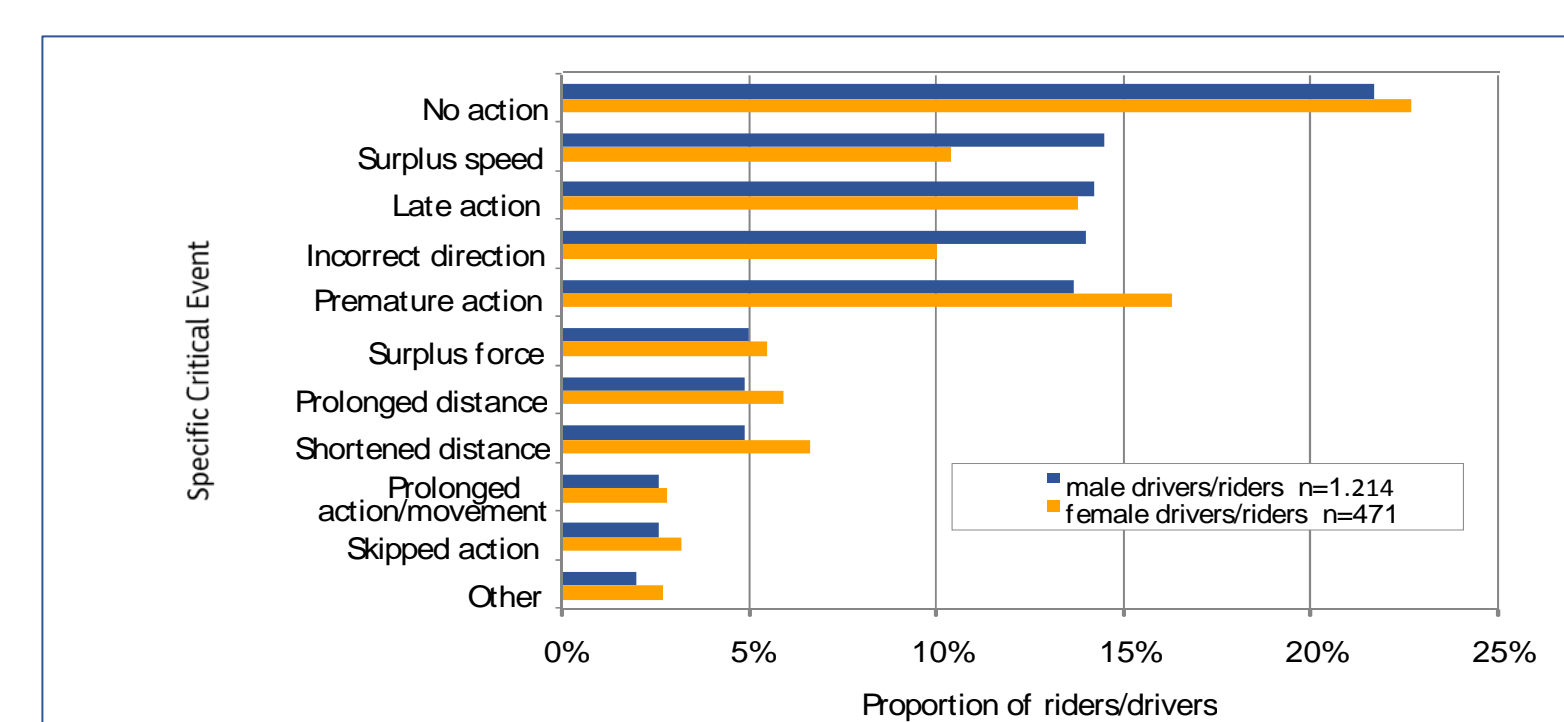
- The road fatality rate of males in 2014 was more than three times the respective female rate.



- There is a slight tendency for male percentages to be higher in the South.
- The highest male ratios were recorded in Greece, Croatia, Portugal, Italy and Latvia.

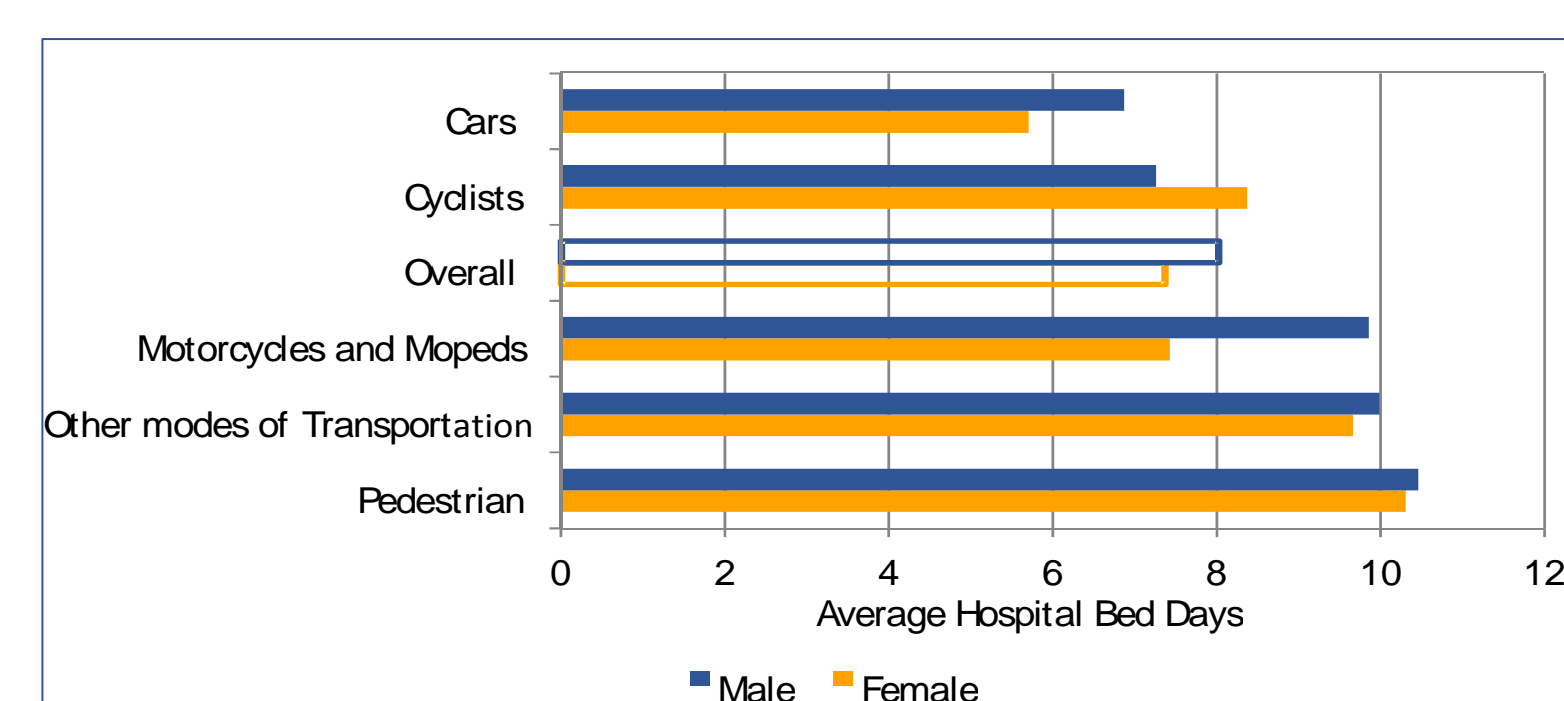
## Accident causation

- 'Surplus speed' and 'incorrect direction' are recorded more frequently for male drivers/riders than females.



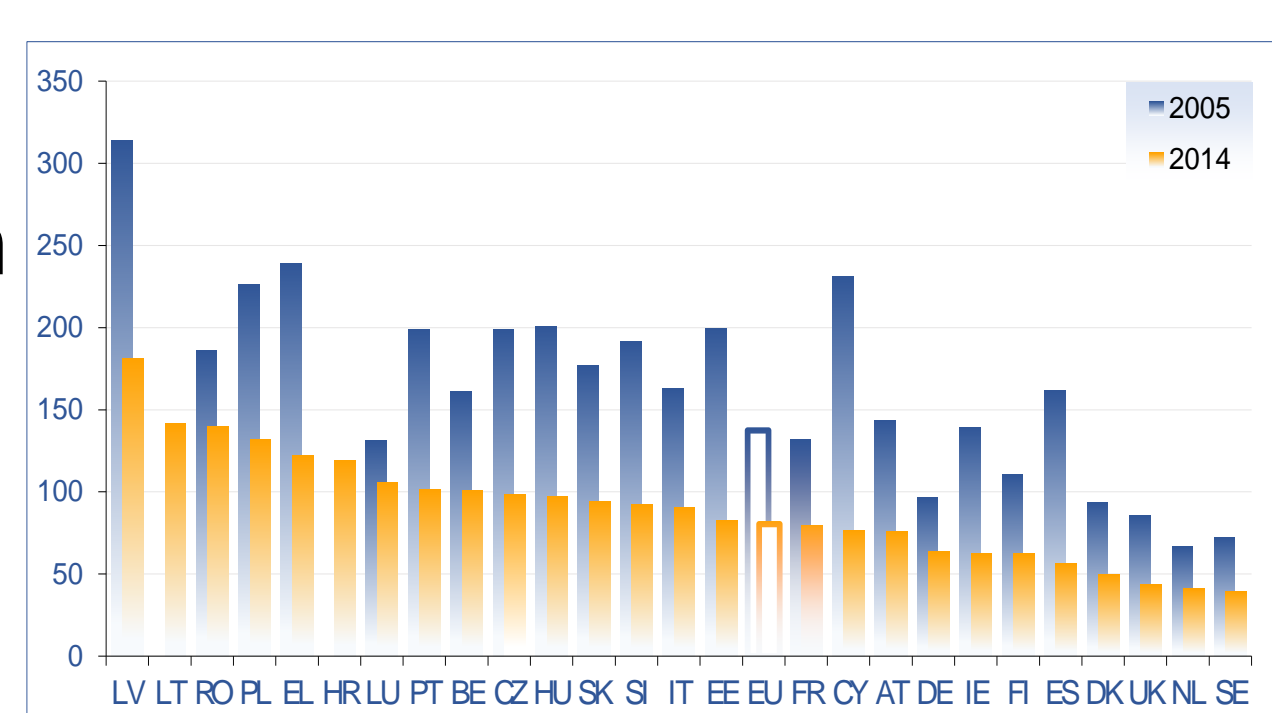
## Health indicators

- 36% of male road accident casualties recorded in the IDB were admitted to the hospital overall and 27% for females.
- Male's average stay in hospital was eight days and about seven days for females.

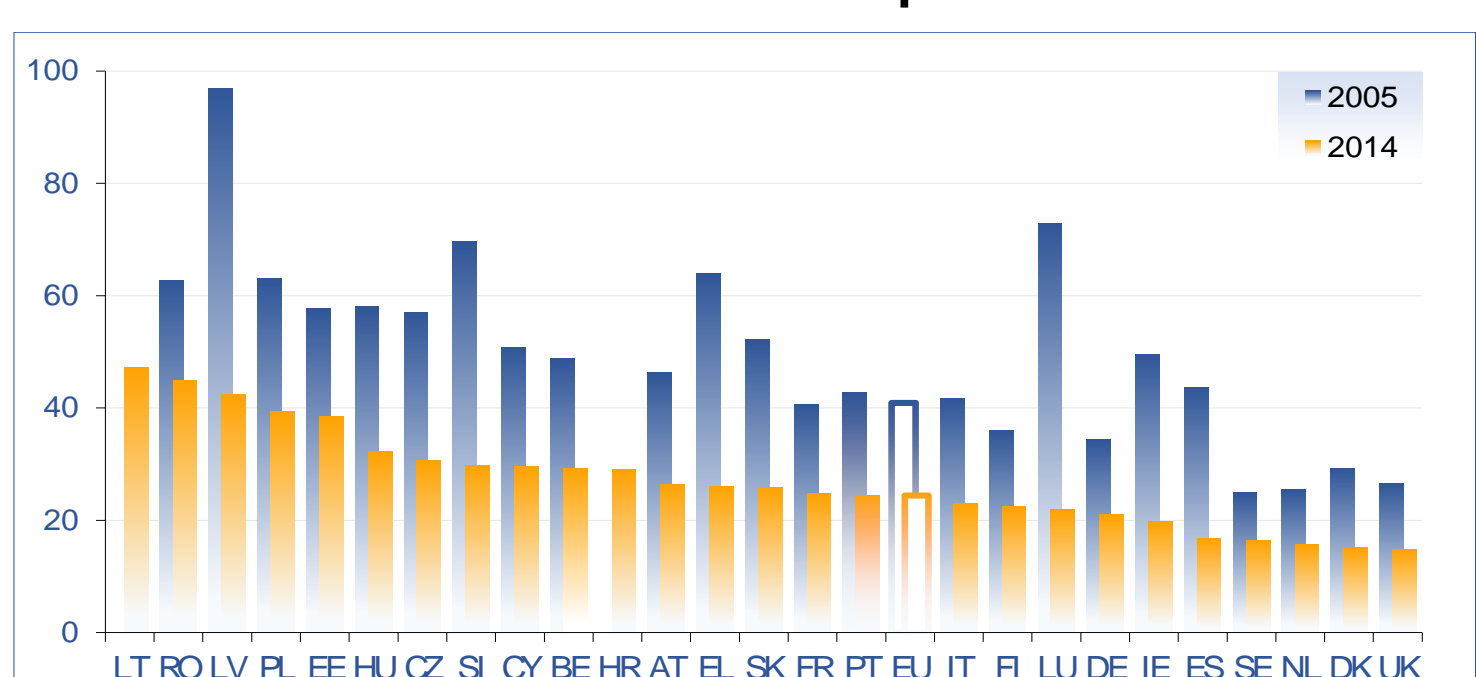


## Overall road safety trends

- The number of people killed in road accidents in the EU decreased between 2005 and 2014 by 43% for males and 42% for females.
- Cyprus and Estonia recorded a much higher male reduction (61% compared to 32% and 60% compared to 36% respectively).



- Spain had the highest reduction of road fatalities per million population (61% for females and 65% for males).



## Discussion

- The road safety problem differs between males and females in the EU as a whole but also among the individual countries, reflecting different gender characteristics and travel behaviors between the two genders, cultures and modal shares among the countries etc.
- The results of the analysis allow for an overall assessment of the gender-differentiated safety level in the European road network.

## Acknowledgements

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