SEASONAL DISTRIBUTIONS OF ROAD FATALITIES IN EUROPE

WCTR 2013 RIO
The 13th World Conference on Transport Research
Julho 15- 18, 2013
Rio de Janeiro, Brasil

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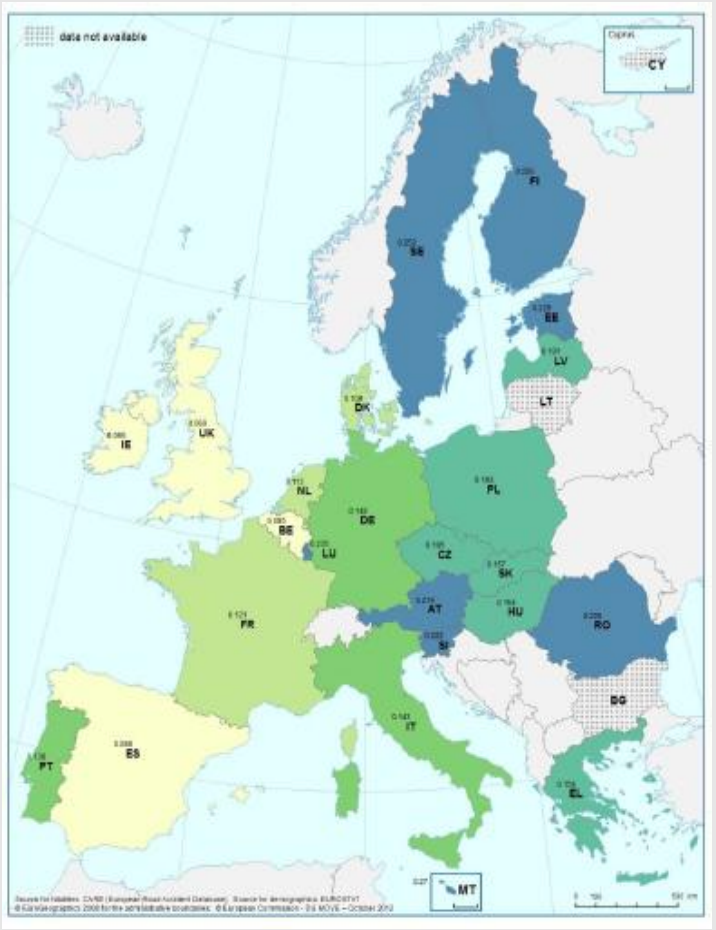
Introduction

- Although the annual number of people who died in road traffic accidents in Europe has fallen over many years, the distribution of the annual number by month has scarcely changed.
- Seasonality is below average in several Western European countries, and above average in several Central European countries.
- The relative harshness of winters in Northern and Central Europe is likely to contribute to the greater seasonality for several of these countries.



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Objectives

- Macroscopic analysis of basic road safety parameters related to seasonal distributions of road fatalities in Europe, using data from the EU CARE database with disaggregate data on road accidents, together with data from other international data files.

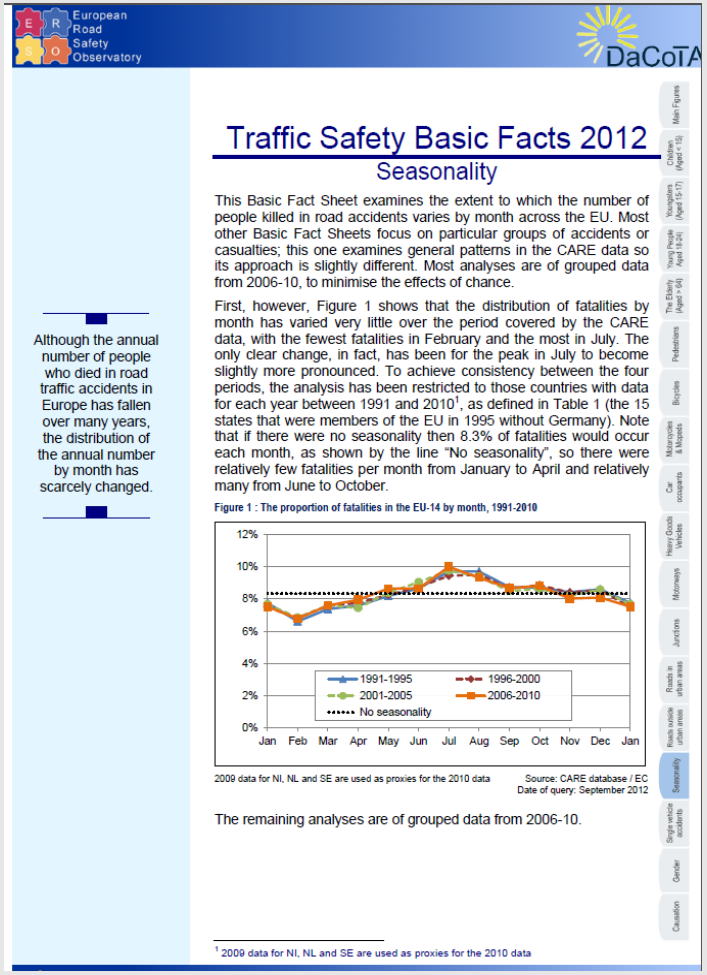
- Comparative analysis among countries will allow for drawing an overall picture of the safety level of seasonal distributions of road fatalities in Europe.

- Provide useful support to all decision makers working for the improvement of safety in the European road network

This work was carried out within DaCoTA project of the 7th framework programme on transport research of the European Commission.

Methodology

- Road accident data from the EU-CARE database.
- 24 EU countries (BE, CZ, DK, DE, IE, EE, EL, ES, FR, IT, LV, LU, HU, MT, NL, AT, PL, PT, RO, SI, SK, SE, FI, UK).
- Data for the period 2001- 2010.
- Road accident data on seasonal distributions of road fatalities correlated with basic safety parameters:
  - weather and hours of daylight
  - mode of transport
  - type of road
  - time of day and day of week
  - age and gender
- Available risk exposure data from other international data files (Eurostat, etc.).



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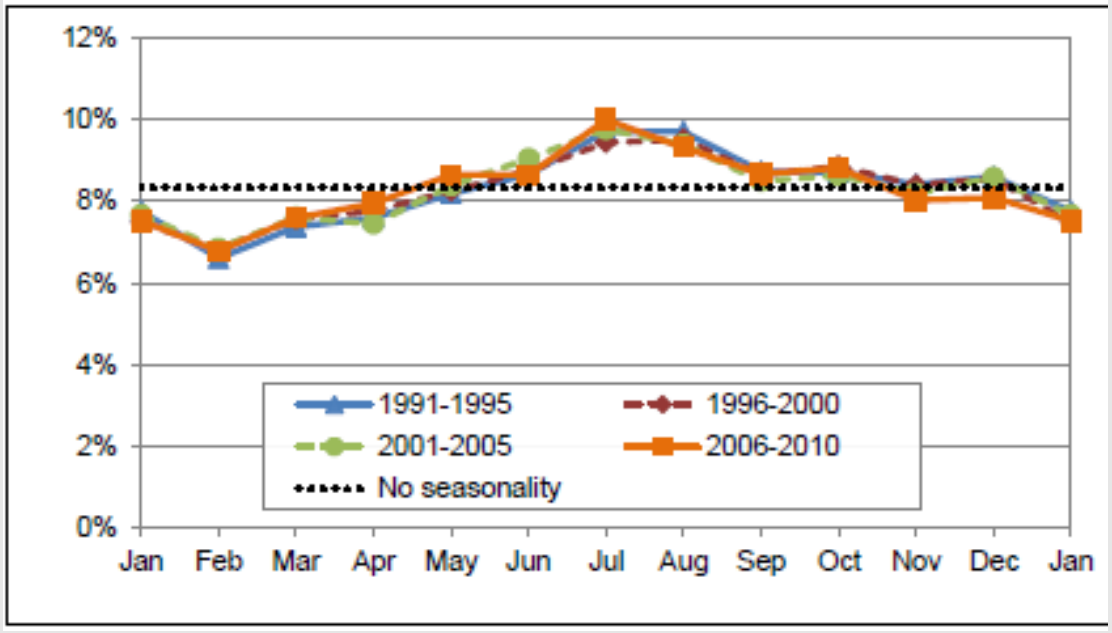
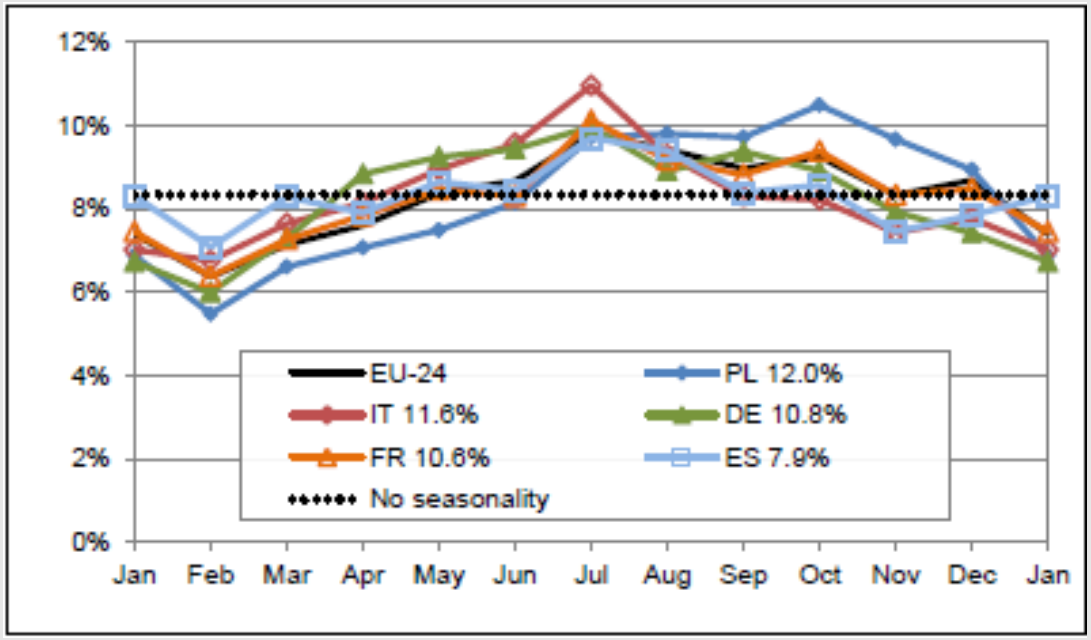
Monthly distribution of fatalities in the EU-14 (1991-2010)



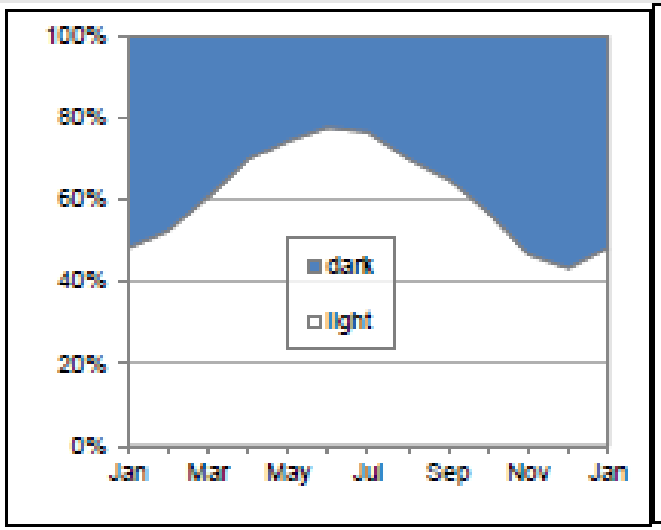
- The distribution of the annual number by month has slightly changed.
- The distribution of fatalities by month has varied very little over the period covered by the CARE data, with the fewest fatalities in February and the most in July.

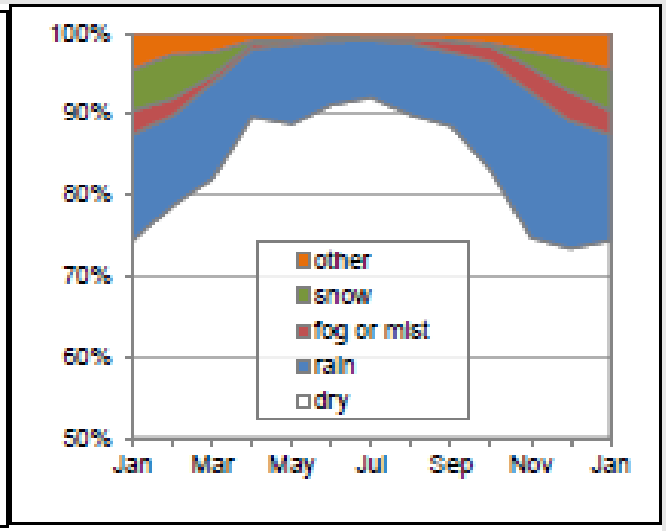
Monthly distribution of fatalities in EU-24 countries (2006-2010)



- The five member states, they accounted for more than half of fatalities of EU-24 countries.
- The distribution of fatalities by month varies considerably from country to country.

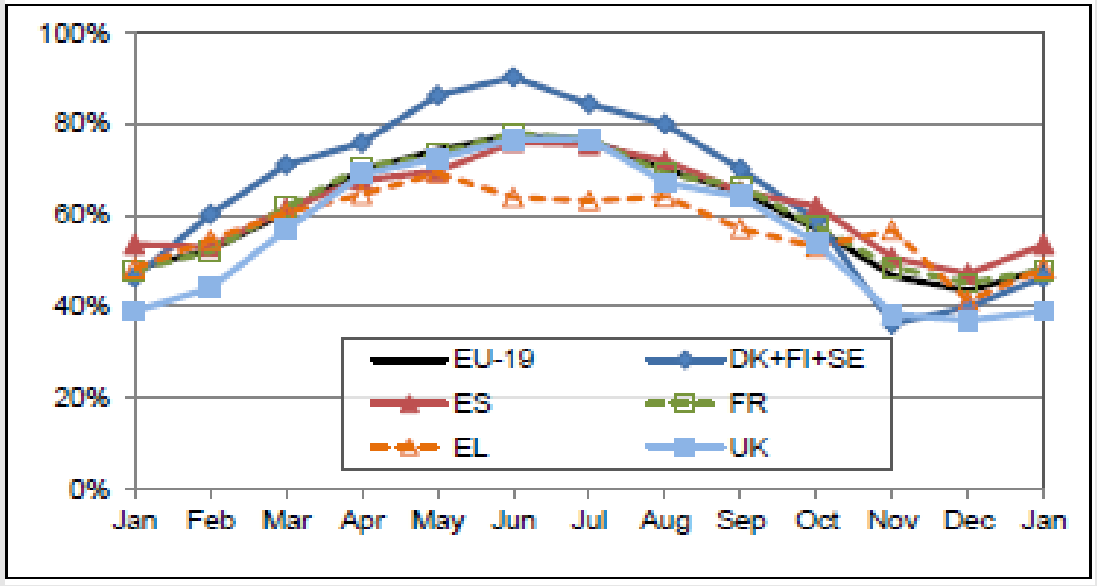
Monthly distribution of fatalities by light and weather condition





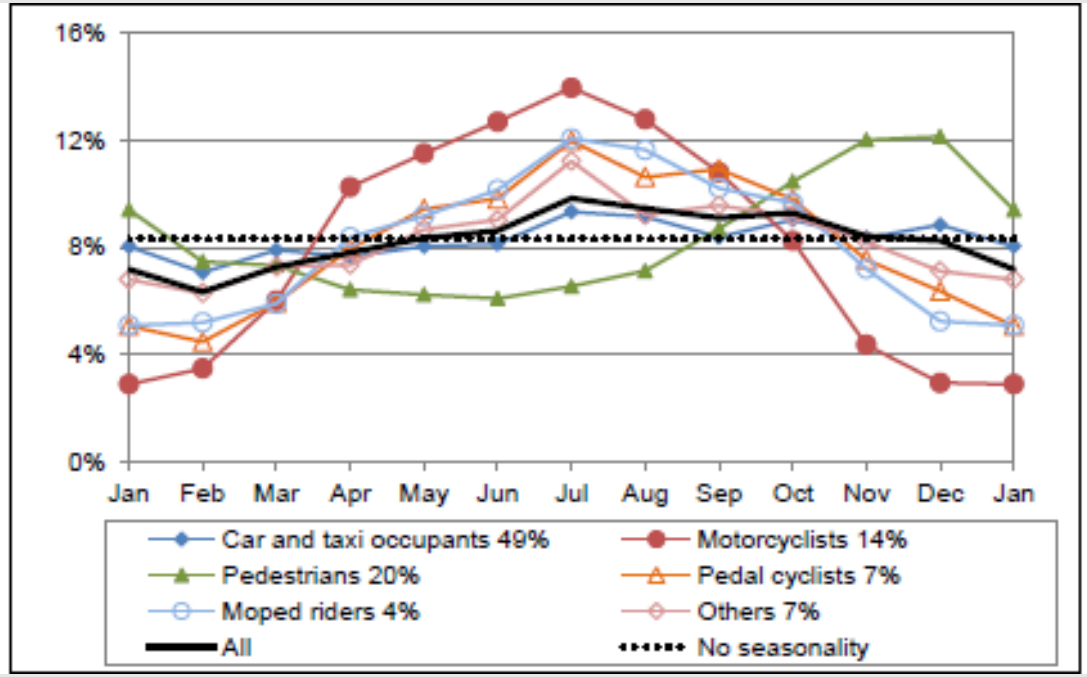
- The distribution of fatalities occurring in daylight varies seasonally, which probably affects the seasonality of the fatality distribution.
- In the EU-19 countries over the whole year, 62% of fatalities occurred in daylight (includes twilight), but the percentage was below 48% between November and January. The great majority (84%) occurred in dry conditions, and this was still at 73% in December.

Monthly distribution of fatalities in daylight



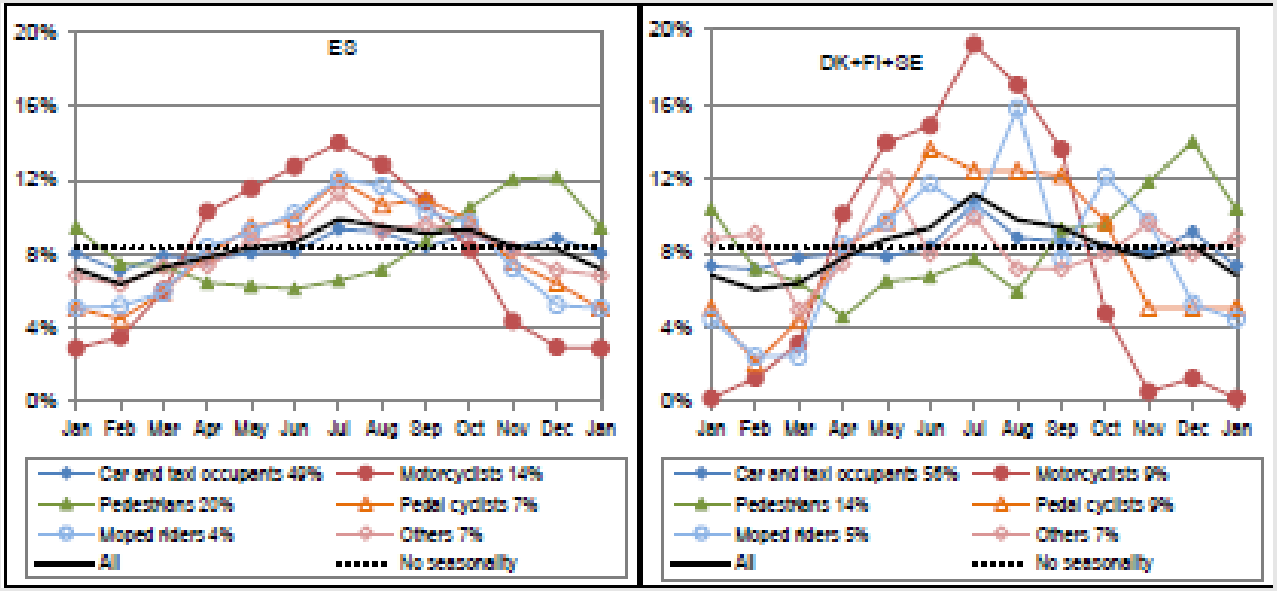
- The variation is greatest in the three Scandinavian countries and least in Greece, but differences cannot be explained simply by day length.
- This depends on latitude but, for example, there are fewer fatalities in daylight in the UK than in the Scandinavian countries during the winter despite the UK's greater day length in winter that results from its more southerly location.

Monthly distribution of fatalities by mode of transport



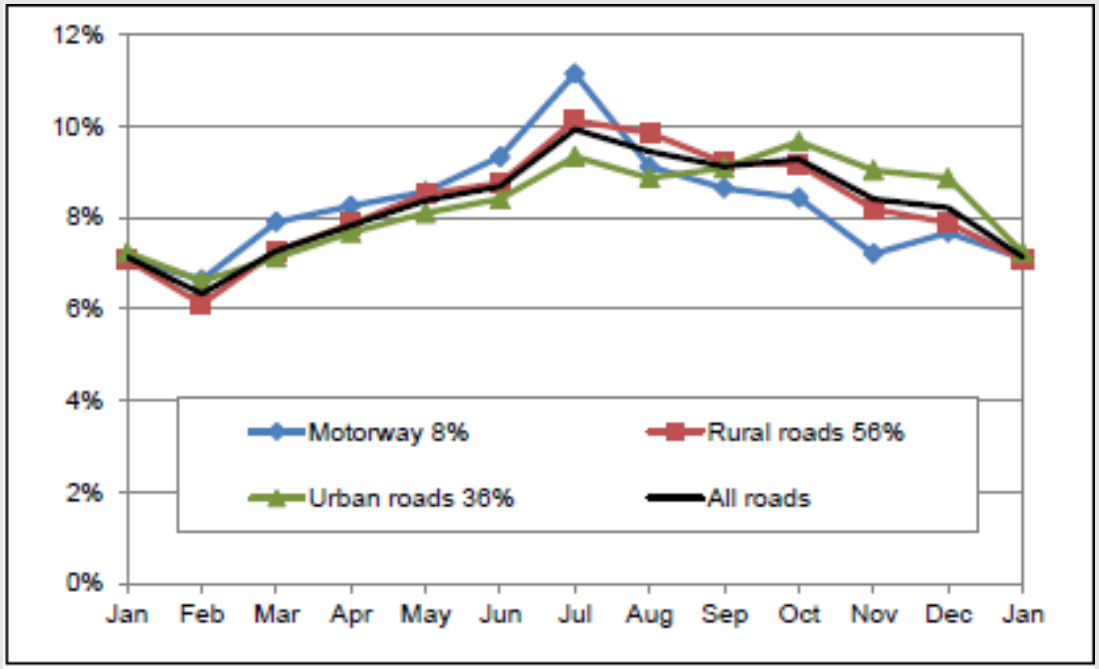
- The seasonality for several groups differs clearly from the overall pattern.
- Motorcycling is the mode of transport with the most seasonal fatality distribution.

Monthly distribution of fatalities by mode of transport and country



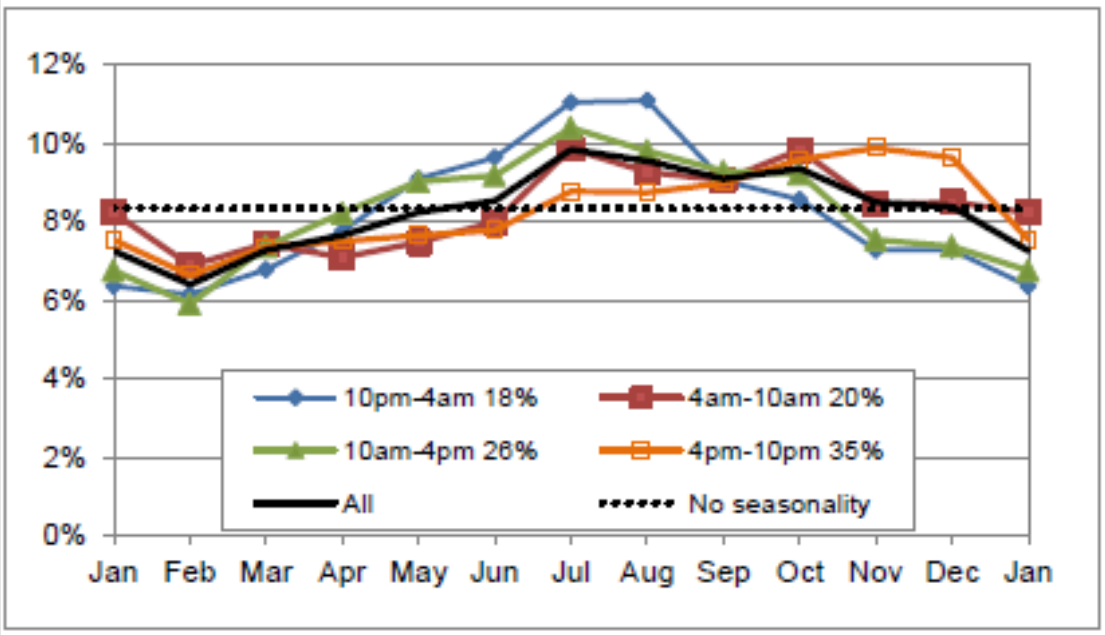
- The seasonal variation of motorcycling fatalities is more pronounced in Scandinavia than in Spain.
- The Spanish fatality distributions show limited variation by month, except for the minor mode of pedal cycling. By contrast, the Scandinavian distributions vary considerably by month, especially for pedestrians and motorcyclists

Monthly distribution of fatalities by type of road



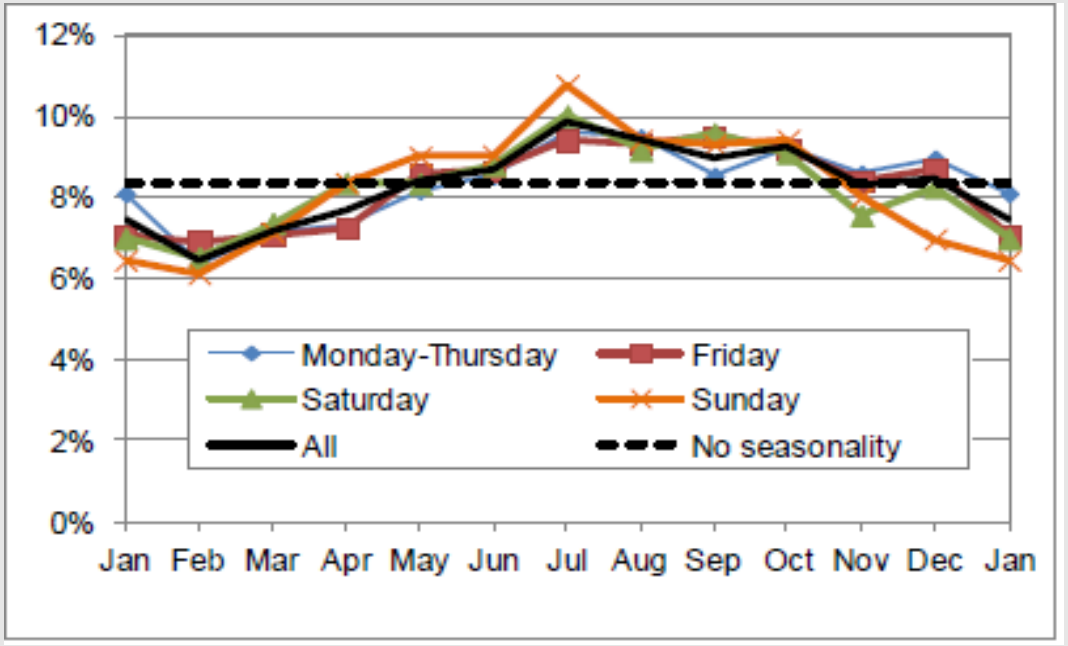
- There is less seasonal variation on urban roads than on rural roads and motorways.

Monthly distribution of fatalities by time of day



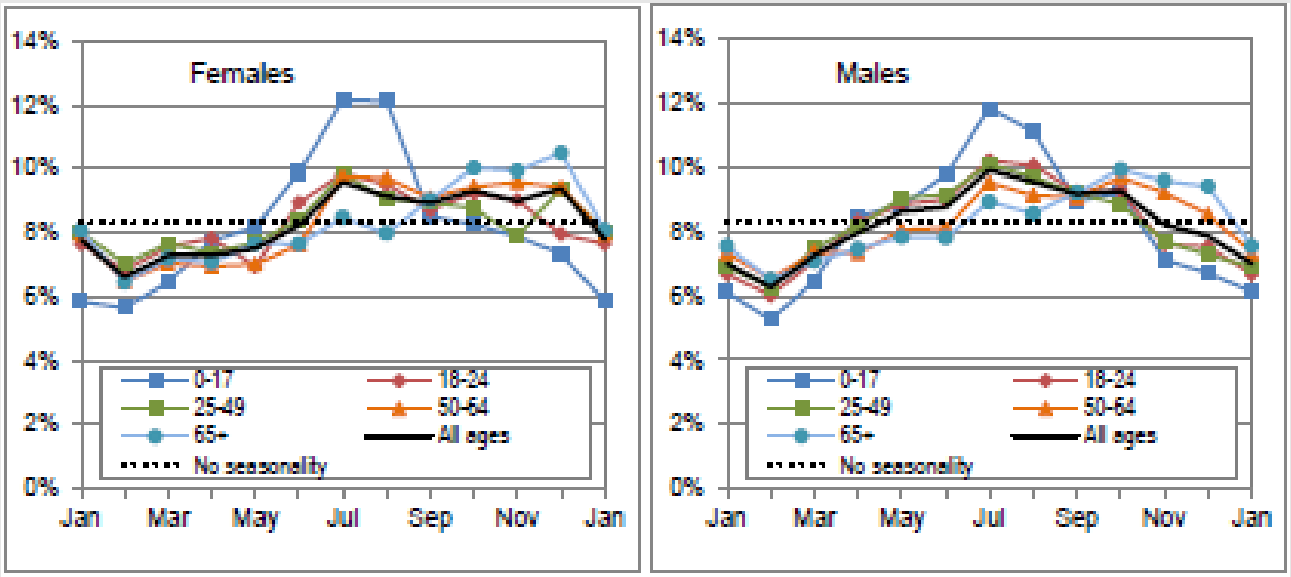
- Seasonal variation is greatest for fatalities occurring in the 10pm-4am period and least for the 4am-10am period.
- There is a clear peak in July for the 10pm- 4am period, while there is a steady increase from February to December for the 4pm-10pm period.

Monthly distribution of fatalities by day of week



- The seasonal variation of fatalities is greater on Sundays than on other days of the week.
- There are relatively many fatalities on Sundays between March and August and relatively few between November and January.

Monthly distribution of fatalities by age and sex



- The seasonal variation of fatalities depends upon gender as well as age.
- Both male and female fatalities have their minimum values in February; male fatalities peak in July whilst female fatalities peak in July and December.
- There is a pronounced peak for 0-17 year old fatalities in July and August, whereas the number of 65+ year old fatalities rises fairly steadily from February to December, especially for women.

Conclusions & Recommendations

- The results of the analysis allow for an overall picture of the safety level of seasonal distribution on road fatalities in Europe, providing thus useful support to all decision makers working for the improvement of safety in the European road network.
- Although the annual number of people who died in road traffic accidents in Europe has fallen over many years, the distribution of the annual number by month has scarcely changed.
- The distribution of fatalities by month tends to vary most in Central Europe and least in Western Europe
- Motorcycling is the mode of transport with the most seasonal fatality distributions
- Seasonal variation is less on urban roads than on rural roads and motorways

SEASONAL DISTRIBUTIONS OF ROAD FATALITIES IN EUROPE

Apoio

UFRJ

COPPE UFRJ

Patrocinadores

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