

## INTRODUCTION

- ❖ Heavy Goods Vehicles (HGV) and buses account for just a small proportion of the vehicle fleet or the total vehicle kms travelled in the EU.
- ❖ HGVs and buses are over-involved in severe road accidents due to their high mass and other particular characteristics.
- ❖ In 2013 more than 4.500 persons were killed in road traffic accidents involving HGVs or buses/coaches in the EU.

## OBJECTIVE

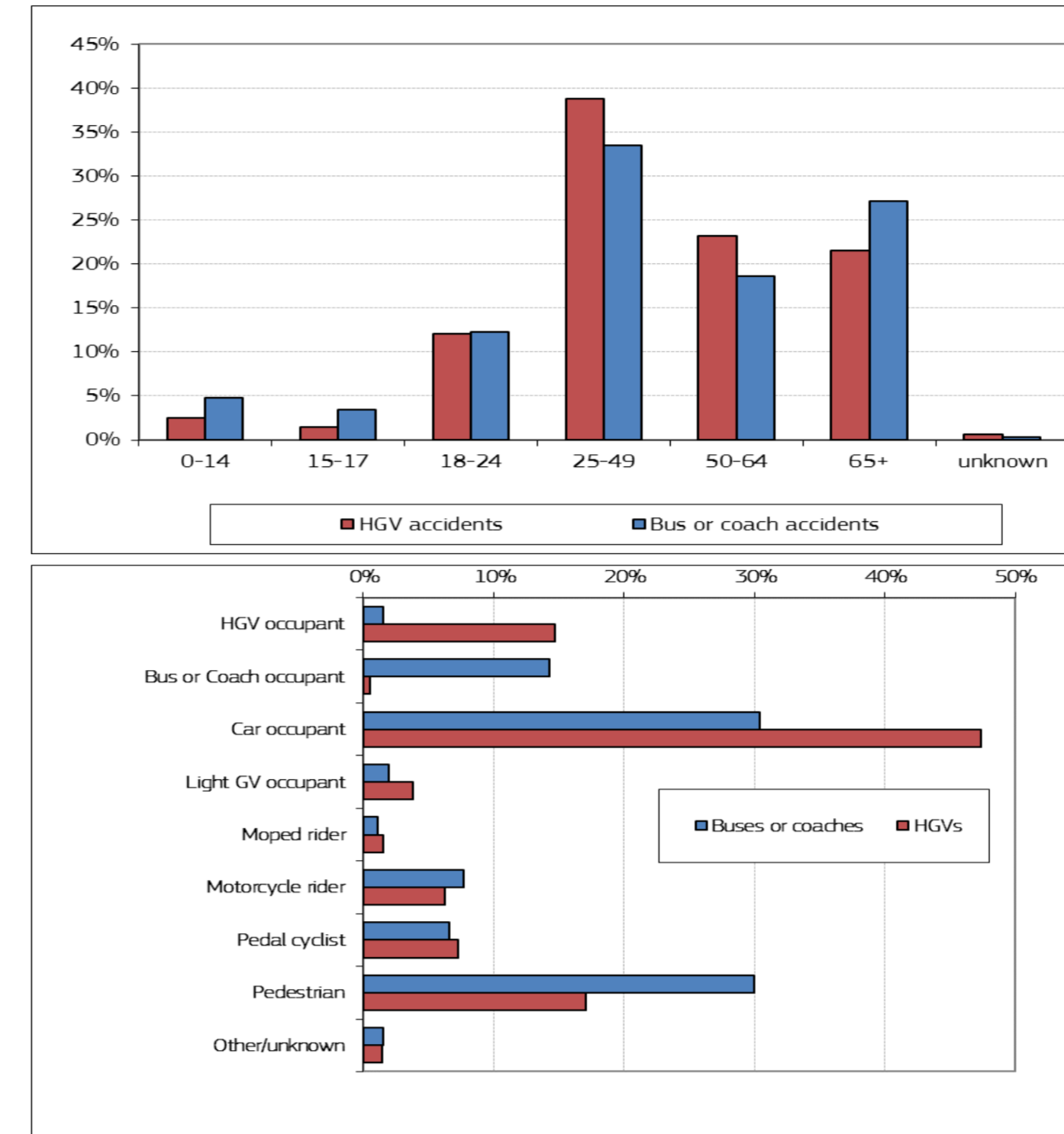
The objective of this research is the analysis of basic road safety parameters related to Heavy Goods Vehicles (HGV) and buses/coaches in European countries using the EU CARE database with disaggregate data on road accidents and the SafetyNet Accident Causation System (SNACS).

## METHODOLOGY

- ❖ Macroscopic road accident data from the EU CARE database and in-depth accident data from the SafetyNet Accident Causation System (SNACS).
- ❖ Macroscopic data from 27 EU countries.
- ❖ Macroscopic time series data for the period 2004-2013.
- ❖ In-depth data from 6 EU countries.
- ❖ In-depth data for the period 2005-2008 using a common methodology.
- ❖ Road accident data involving HGVs and buses/coaches correlated with basic safety parameters:
  - area type
  - season of the year
  - casualty age and gender
  - day of week and time of day
- ❖ Available risk exposure data from other international data files (Eurostat, etc.).

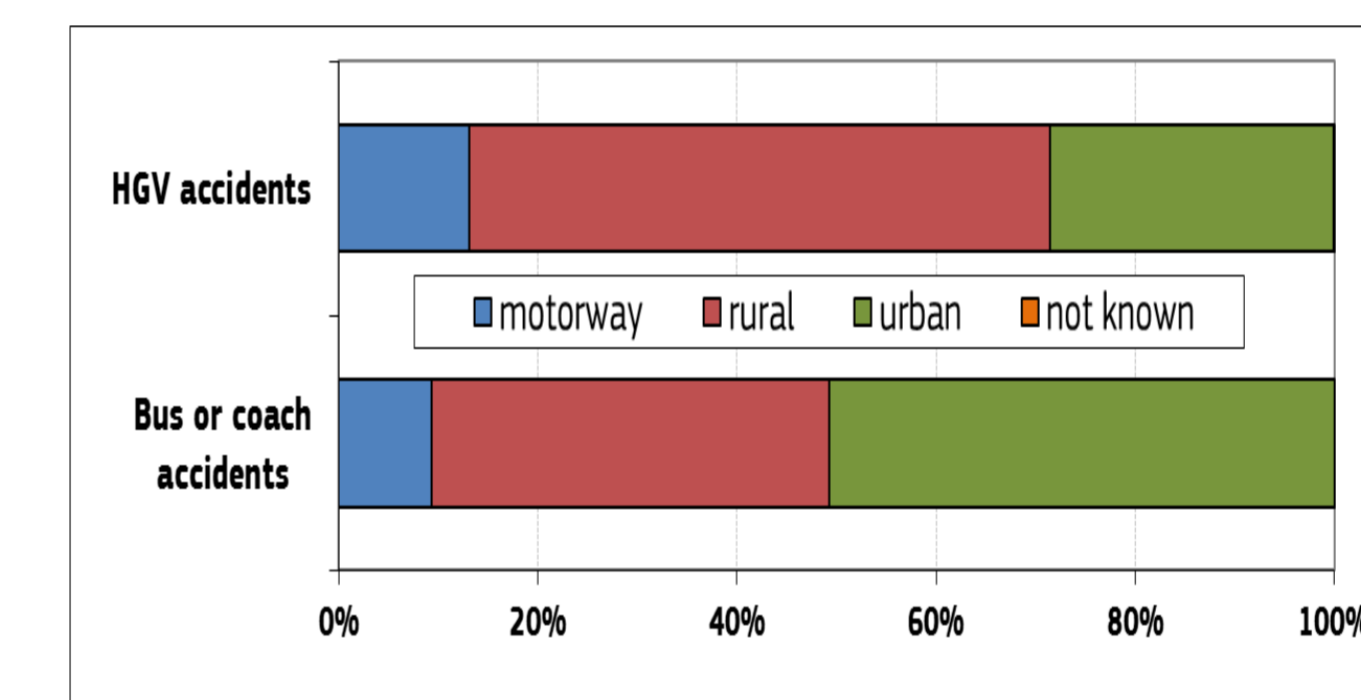
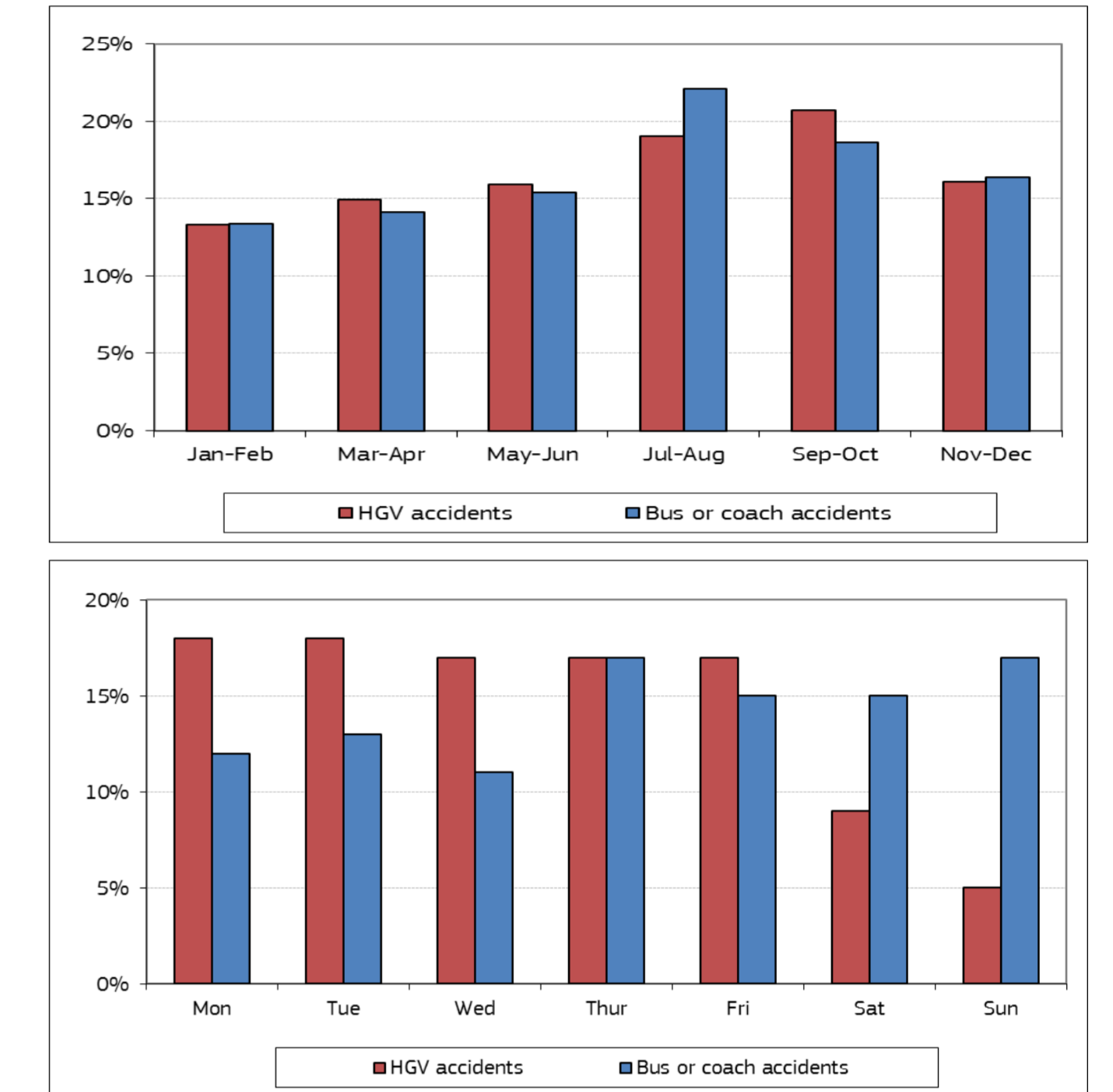


## ROAD SAFETY PARAMETERS OF HGVs AND BUSES



- ❖ Almost 40% of persons killed in a road accident involving HGVs in 2013 were between 25-49 years old, with the respective proportion for fatalities related to buses or coaches accidents being 32%.
- ❖ Nearly half (47%) of persons killed in road accidents involving HGVs were travelling by car.
- ❖ More than 30% of persons killed in 2013 in accidents that involved buses or coaches were pedestrians, the same as for car occupants.

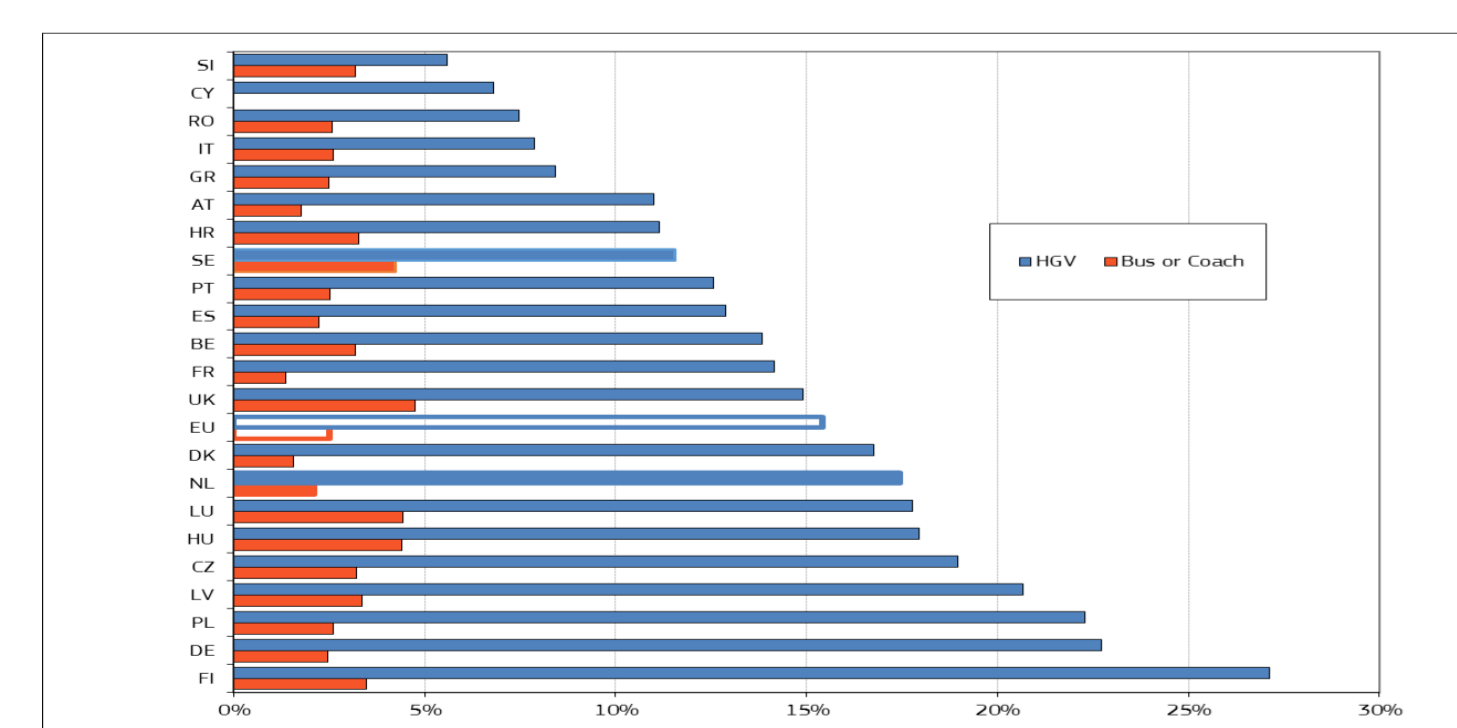
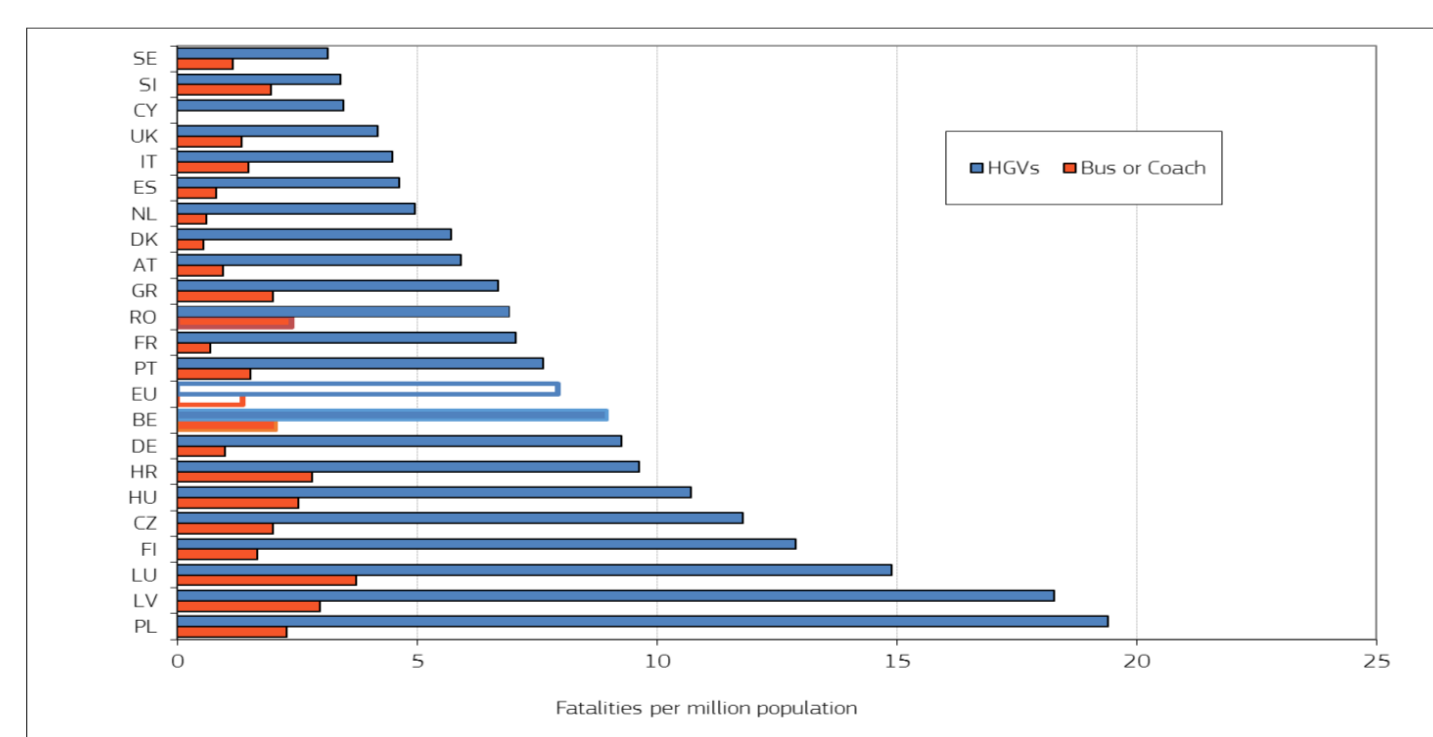
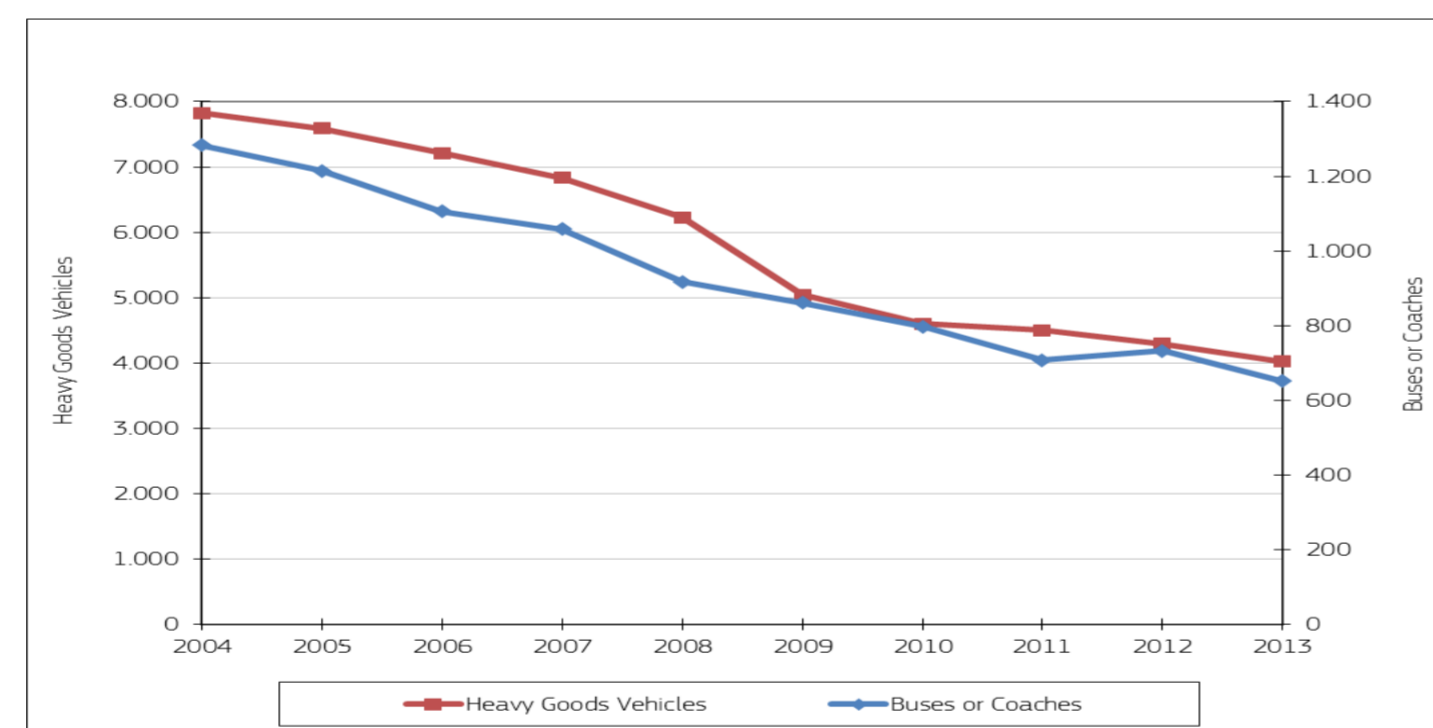
- ❖ For both transport modes the lowest proportion of fatalities in 2013 were recorded in January and February.
- ❖ HGV related fatalities in the EU countries peaked in September and October, while bus related fatalities peaked in July and August.
- ❖ Significantly less people were killed in road accidents involving HGVs during the weekends, probably because of the driving bans existing in most countries.



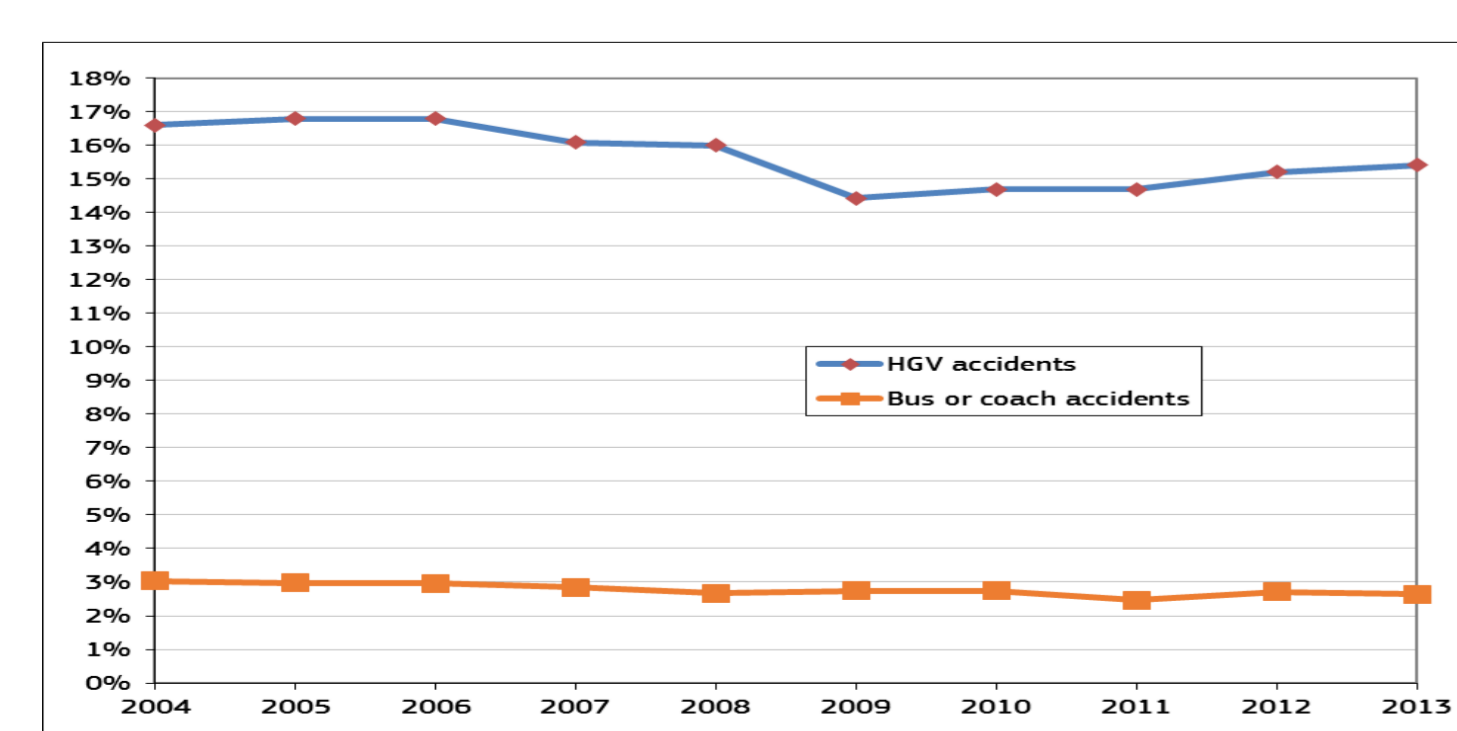
- ❖ 58% of the fatalities in HGV accidents in the EU countries occurred inside rural areas.
- ❖ The share of fatalities on motorways is similar for both the accidents involving HGVs (15%) and buses/coaches (14%) in EU.

## OVERALL ROAD SAFETY TRENDS

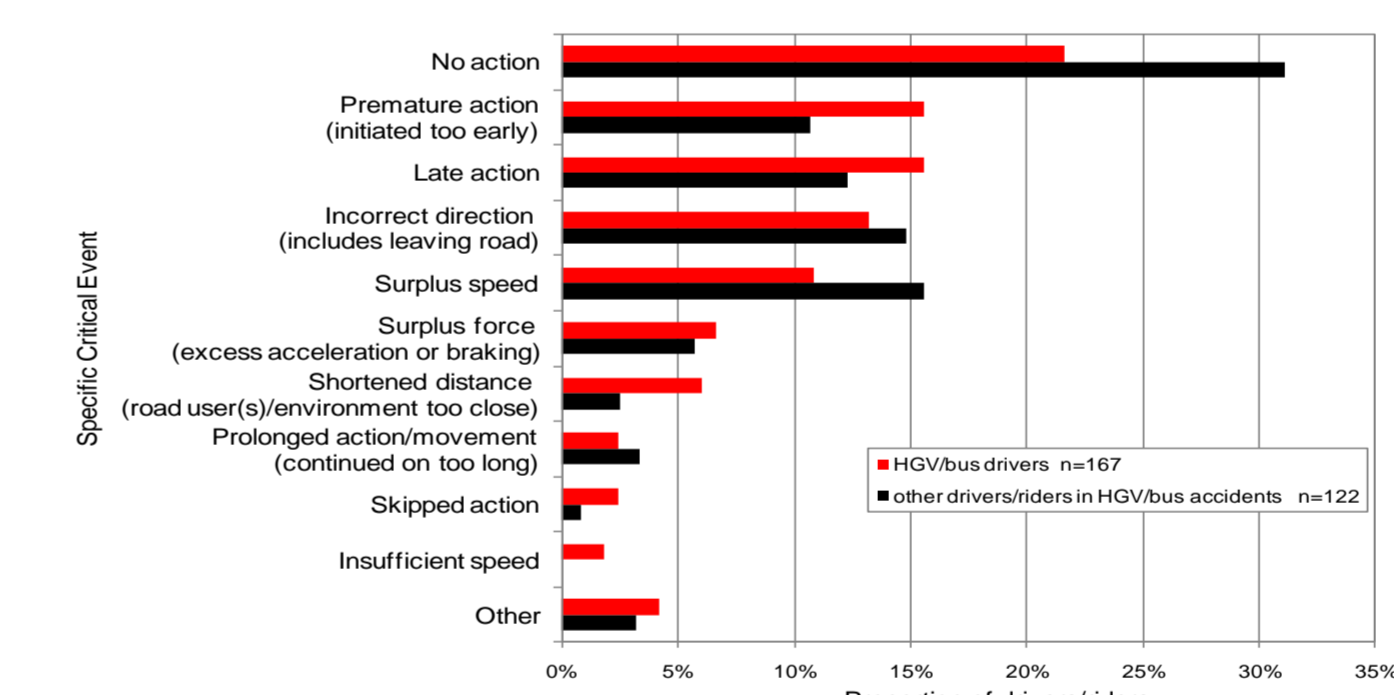
- ❖ The number of fatalities in accidents involving HGVs, buses or coaches has fallen by nearly 50% over the period 2004-2013 in the 27 EU countries.
- ❖ A considerable decrease of 19% was noted between 2008 and 2009 for HGV related fatalities.
- ❖ EU-average fatality rate in accidents involving HGVs is about 8 per million population, whereas the respective for accidents involving buses or coaches is 1,4.



- ❖ More than 15% of people killed in road accidents in 2013 died in accidents involving HGVs and almost 3% in accidents involving buses or coaches.
- ❖ Considerable variation around these averages are recorded in individual countries.
- ❖ The decreasing trend of fatal road accidents involving HGVs during the last years has been inverted in 2009 continuing ever since.



## ACCIDENT CAUSATION ANALYSIS



Links between causes	Frequency
Faulty diagnosis - Information failure (driver/environment or driver/vehicle)	43
Observation missed - Permanent sight obstruction	23
Observation missed - Distraction	13
Equipment failure - Unpredictable system functions/characteristics	10
Observation missed - Faulty diagnosis	8
Observation missed - Permanent obstruction to view	7
Observation missed - Inadequate plan	6
Equipment failure - Maintenance failure - condition of vehicle	6
Observation missed - Inattention	5
Observation missed - Temporary obstruction to view	5
Others	69
<b>Total</b>	<b>195</b>

- ❖ Specific critical events were related to 'timing' for more than 50% of HGV or bus drivers involved in road accidents.
- ❖ 'Faulty diagnosis' and 'observation missed' are the two dominant causes for injury accidents involving HGV or bus drivers/riders.

## DISCUSSION

- ❖ The occupants of HGVs and buses/coaches are a special group of road users, mainly due to specificities and different mobility behaviour.
- ❖ Safety problem of HGVs and buses/coaches varies systematically by region, reflecting different climates, cultures and behavioural characteristics, intensity of traffic, modal shares, regulations and policies applied, and vehicle technology readiness levels.
- ❖ The results of the analysis allow for an overall assessment of the HGVs and buses/coaches safety level in the European road network relative to other modes of transport.

## ACKNOWLEDGEMENTS

This paper is based on work carried out by the National Technical University of Athens (NTUA), the Austrian Road Safety Board (KFV) and the European Union Road Federation (ERF) for the European Commission DG Mobility and Transport, updating work carried out within the SafetyNet and DaCoTA projects of the 6th and 7th Framework Programs for Research, Technological Development and Demonstration of the European Commission.