Pedestrians' attitudes and behaviour in Europe

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Background & Objectives

- Pedestrians are the most vulnerable users of transport networks
  - Different speed & mass, lack of protection
  - particular characteristics and behaviour, interaction with motorized traffic
- Existing studies on pedestrian attitudes, perceptions and behaviour
  - mostly focus on particular aspects and on particular populations
  - the samples examined are small
  - no results comparing different countries
- The objective of this research is the analysis of pedestrians' attitudes and behaviour in Europe, on the basis of selected pedestrians' responses to the SARTRE 4 questionnaire

Definitions & data

- In each country, a minimum of 200 ORU were interviewed, based on simple random sampling at national level.

- Pedestrians were selected as those respondents:
  - who reported that their most frequent transport mode in the last 12 months was neither passenger car nor motorcycle
  - and who reported non-zero daily walking distance travelled

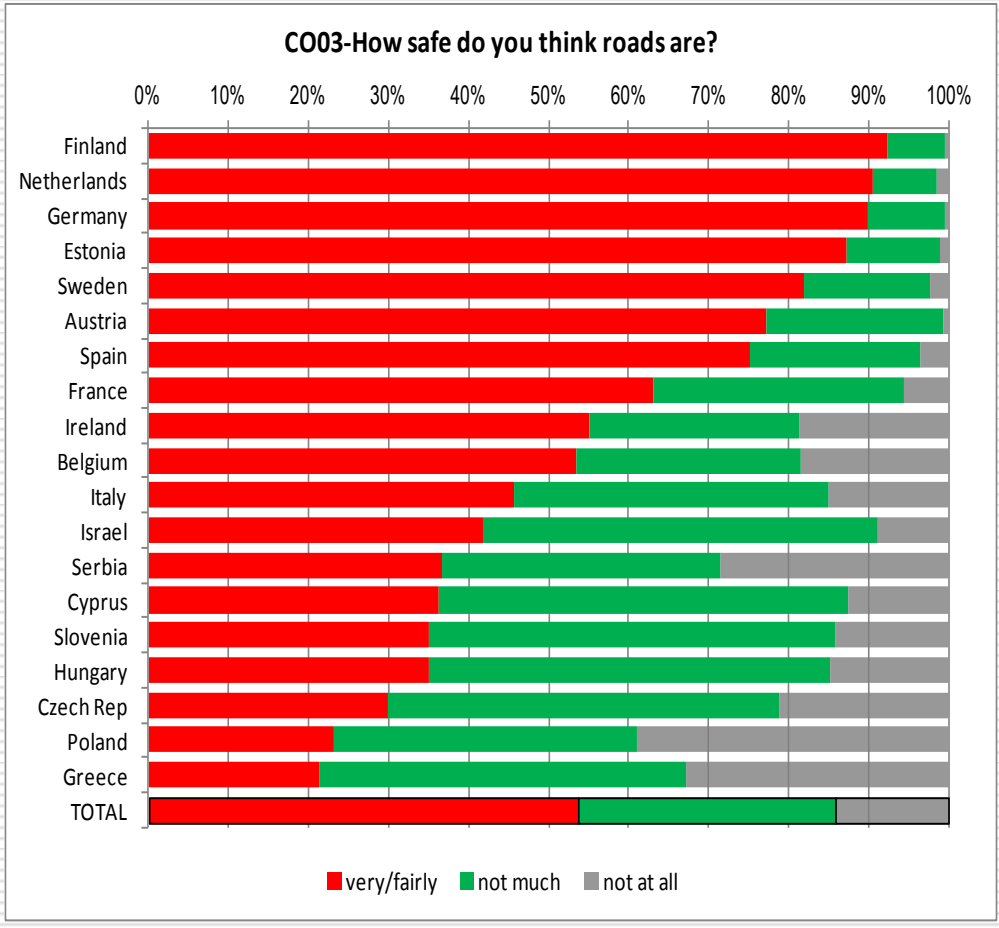
Methods

1. Descriptive analysis:
   - frequencies, percentages and country comparisons on pedestrians' road safety attitudes and behaviour *(NTUA)*
   - analyses per age, gender, town size and area type *(CDV, VTT)*

2. In-depth statistical analysis and modeling:
   - Pedestrians' travel habits (cluster analysis) *(KFV)*
   - Components of pedestrians' road safety attitudes and behaviour (Principal Component Analysis) *(NTUA)*
   - Pedestrians' attitudes and behaviour (cluster analysis) *(NTUA)*

Descriptive analysis
General questions

- Pedestrians seem to be very concerned about several socioeconomic issues (pollution, unemployment, health care).
- Only in a few countries pedestrians are worried about congestion. The responses are clearly affected by the degree to which these issues are present in the different countries.
- Pedestrians find that roads have become safer in northern and western European countries, while the opposite is the case for southern and central European countries.

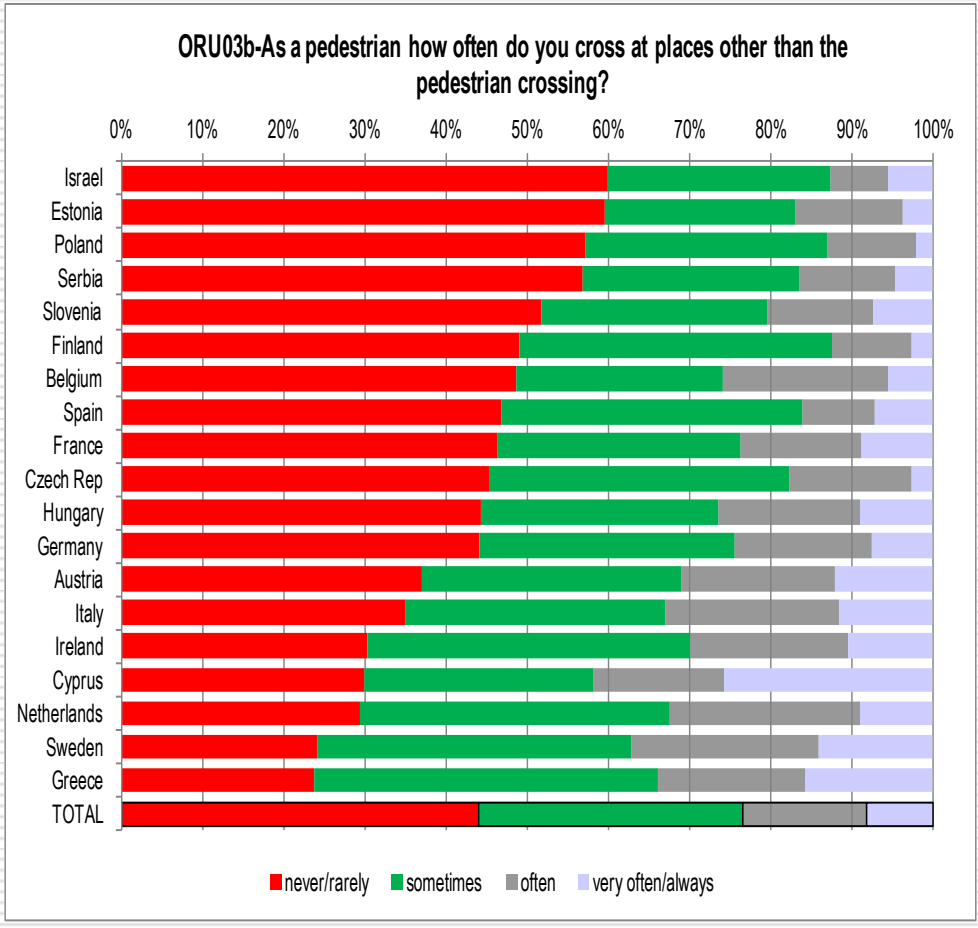


Descriptive analysis
Attitudes towards measures & penalties

- "Very" or "fairly" in favor of using speed limit devices cars (78%), black boxes (80%), fatigue detection devices (84%), and alcolocks in cars (87%).
- "Very" or "fairly" in favor of using cameras for red light surveillance (83%), surveillance of speeding (83%).
- "Strongly agree" or "agree" with more severe penalties for speeding offences (~70%), for drink-driving offences (~90%), for not wearing helmets on motorcycles (~90%) and for using handheld phones while driving (76%).
- The percentage of pedestrians who strongly support more '30 km/h' zones is much lower (37%) compared to the other measures

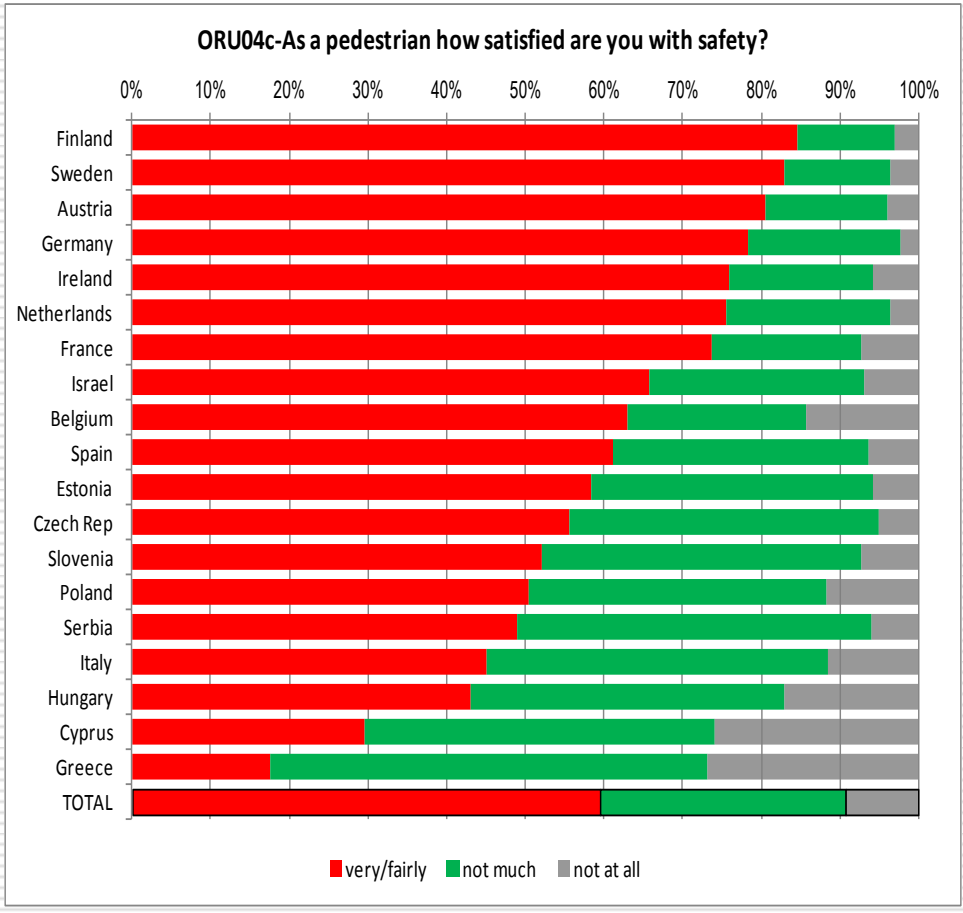
Descriptive analysis
Walking behaviour and interaction with motorists

- Greece, Cyprus, Sweden and Belgium present increased share of "more than often" crossing outside pedestrian crossings.
- The highest rates of red light violations can be found in Poland (88%), Slovenia (87%), Hungary (85%) and the Czech Republic (77%).
- Pedestrians are quite annoyed with car drivers, less annoyed with motorcyclists and even less annoyed with bicyclists.



Descriptive analysis
Satisfaction with the walking environment

- The highest share of pedestrians "not at all" satisfied with street lighting can be found in Greece (79%) and Cyprus (55%) - overall mean is 37%.
- The majority of pedestrians are "very" or "fairly" satisfied with the number of crossing points - highest in France, Finland (76%) and Netherlands (74%).
- The highest share of pedestrians "not much" or "not at all" satisfied with the number of crossing points is in Greece (79%) and Cyprus (78%).



Descriptive analysis
Area type and town size effects

- Unsafe behaviours are more frequent in urban areas, especially in increased town size, than in rural areas.
- Avoidance of certain streets or intersections is more widespread in rural areas.
- The satisfaction of pedestrians with the road infrastructure increases with town size
  - possibly due to better pedestrian facilities in bigger cities.
- Annoyance with motorcyclists appears to increase with town size
  - possibly due to increased mobility of motorcycles in big cities.

Descriptive analysis
Age and gender effects

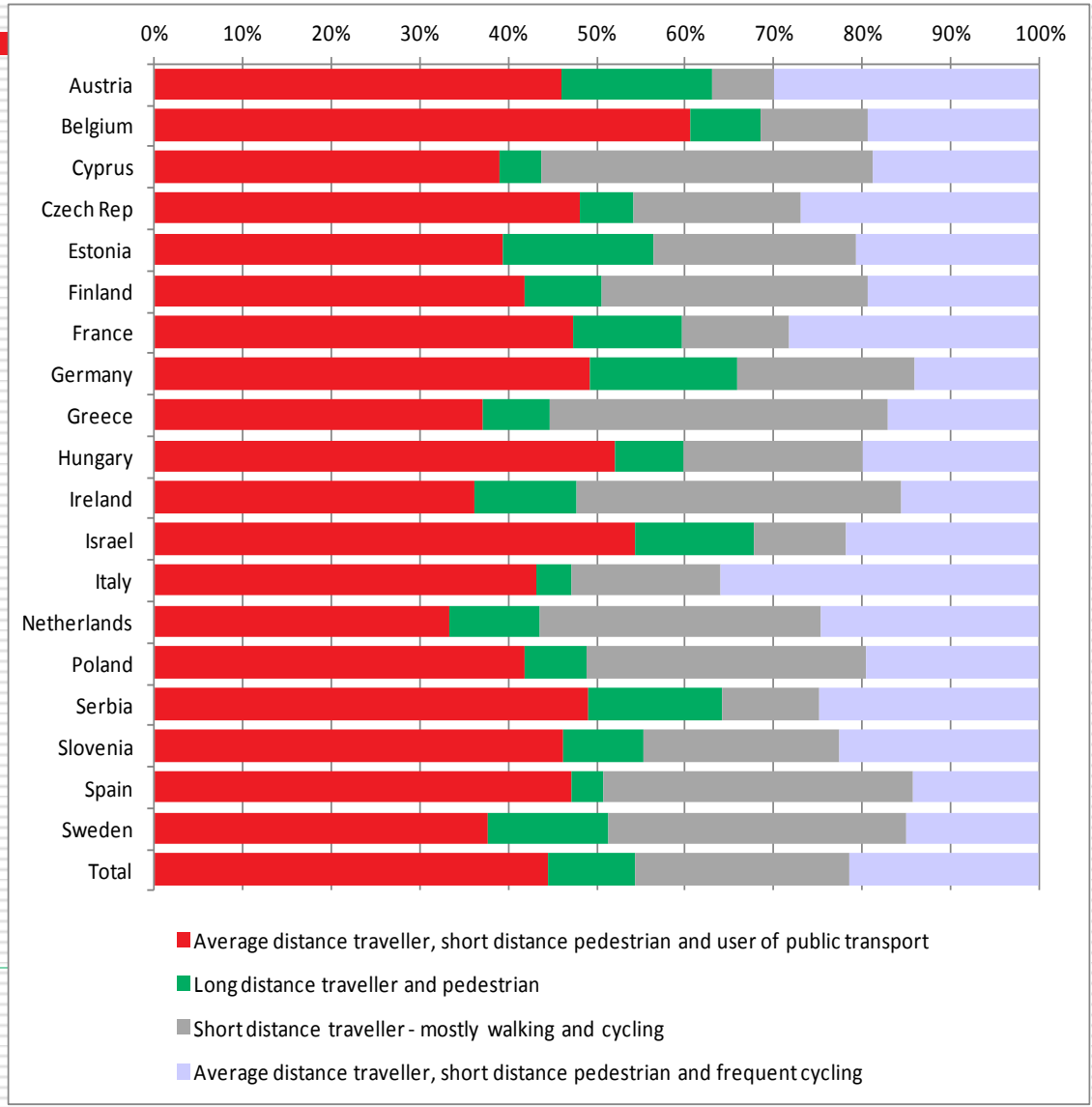
- Men cross streets on red light or wrong places more often than women.
- Women and the elderly avoid dangerous streets or intersections more often than men.
- The youngest and oldest age groups are more often satisfied with the road infrastructure. On the contrary, older people were found to be less satisfied with the speed and volume of traffic.

In-depth analysis
Motivations & travelling styles

	Type 1	Type 2	Type 3	Type 4
	Average distance traveller, short distance pedestrian and use of public transport	Long distance traveller and pedestrian	Short distance traveller mostly walking and cycling	Average distance traveller, short distance pedestrian and frequent cycling
Cluster size	44.5%	9.9%	24.1%	21.5%
percentage of walking kilometers	17%	19%	67%	23%
total daily travel distance	22.03	79.93	9.05	21.18
walking frequency nearly daily	100%	93%	100%	64%
walking distance	2.83	8.63	4.45	2.48
percentage of public transport kilometrs	44%	46%	4%	31%
percentage of car passenger kilometrs	31%	27%	5%	28%
Percentage of cycling kilometers	6%	6%	24%	14%

In-depth analysis
Motivations & travelling styles per country

- The four types of pedestrians resulting from the cluster analysis are present in various proportions in the participating countries.
- The proportion of Type 3 (the "typical pedestrian") differs most strongly among the countries.
- It lies significantly above the mean (24.1%) in Cyprus Poland and Ireland. It is significantly lower represented in Austria, Israel, Belgium, France and Serbia.



In-depth analysis
Components of pedestrian attitudes and behaviour

- The 33 variables of the study can be optimally clustered together in 8 Components.
- Those Components can be broadly classified into two sub-groups, one group associated with attitudes and one with behaviour.
  - Component 1: Satisfaction with the pedestrian environment
  - Component 2: Attitude towards penalties
  - Component 3: Attitude towards electronic in-vehicle devices
  - Component 4: Attitude towards speed limitations and surveillance
  - Component 5: Pedestrian behaviour and distraction
  - Component 6: Attitude towards pedestrian safety measures
  - Component 7: Annoyance with other road users
  - Component 8: Changing behaviour

In-depth analysis
Pedestrians' profiles (attitudes and behaviour)

CLUSTER 1: **"Positive attitudes, positive behaviour"**

- Satisfied with road environment
- Agree with and penalties
- Agree with devices
- Agree with speed limitations and surveillance
- Accept pedestrian measures

CLUSTER 2: **"Negative attitudes, negative behaviour"**

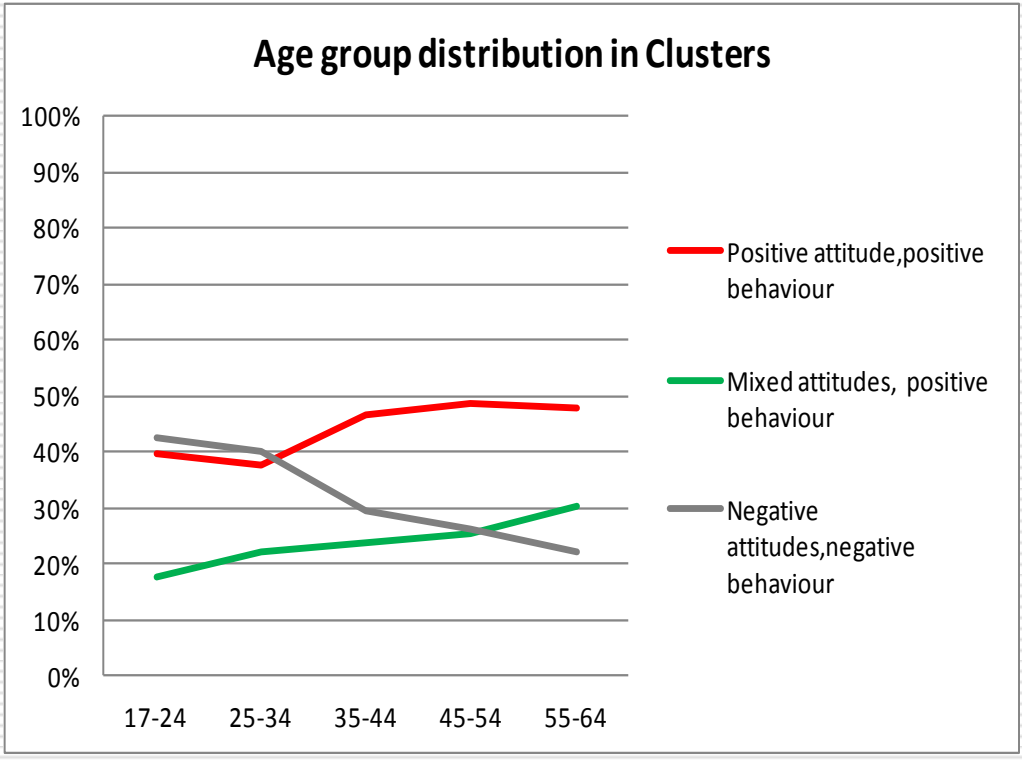
- Not satisfied with road environment
- Disagree with measures and penalties
- Disagree with devices
- Disagree with speed limitations and surveillance
- High risk-taking and distraction
- High changing behaviour

CLUSTER 3: **"Mixed attitudes, positive behaviour"**

- Agree with penalties
- Low risk-taking and distraction
- Disagree with pedestrian measures
- Not annoyed by other road users
- Not changing behaviour

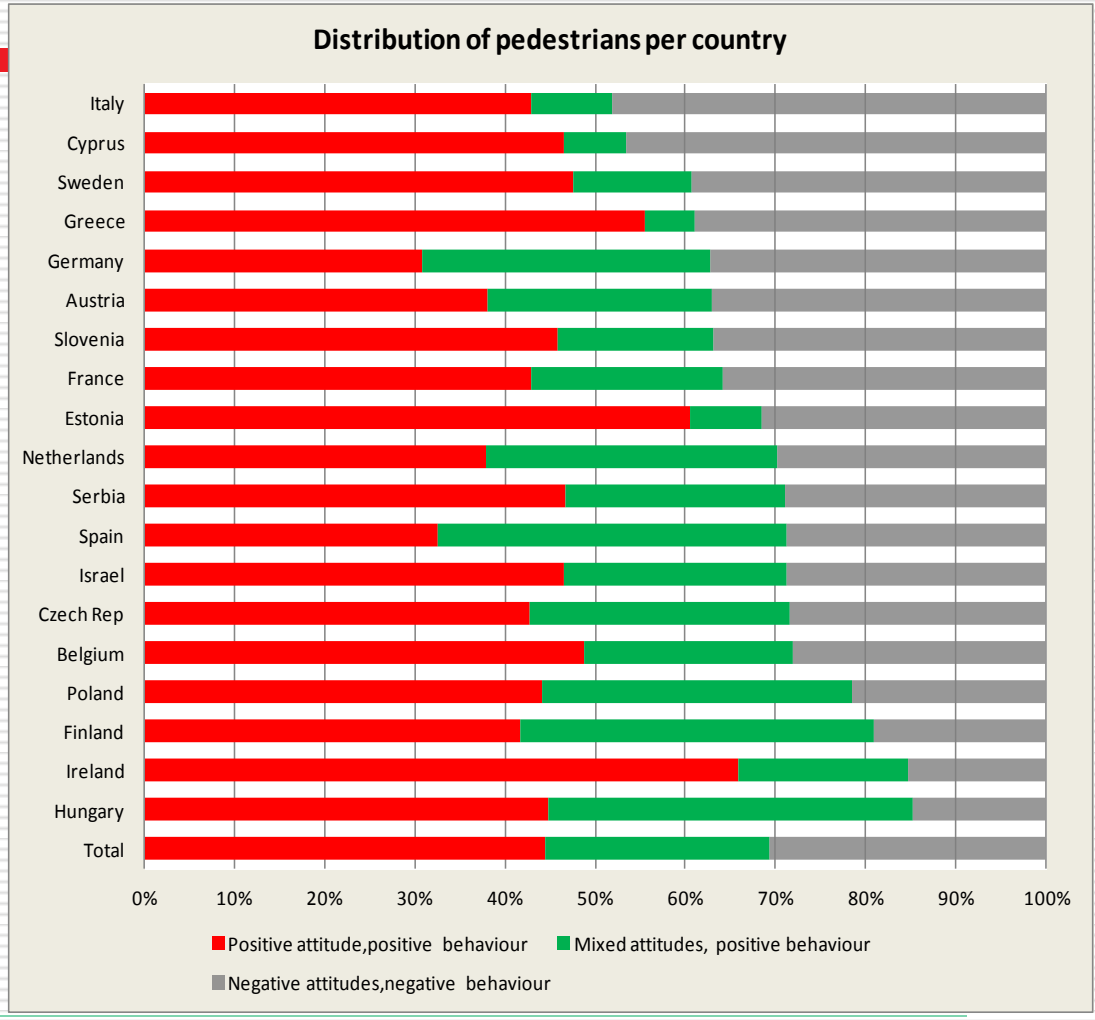
In-depth analysis
Pedestrians' profiles per gender and age group

- Female pedestrians have slightly more "positive attitudes and positive behaviour" than males.
- Overall most pedestrians have "positive attitudes and positive behaviour" and few pedestrians have "negative attitudes and negative behaviour"
- This trend is reversed for pedestrians younger than 34 years old, who have "negative attitudes and behaviour".



In-depth analysis
Pedestrians' profiles per country

- The percentage "positive attitudes and positive behaviour" is higher than 40% in almost all the countries
- The highest percentages of "negative attitudes and negative behaviour" can be found in Italy, Cyprus, Sweden and Greece.
- The most dispersed cluster is "mixed attitudes, positive behaviour", which has some notably low percentages (Greece, Cyprus, Estonia), as well as some high percentages (Hungary, Finland, Spain)



Conclusions (1/2)

- Pedestrians support safety measures for speeding, drink-driving and fatigue, especially for recidivist drivers.
- They seem to support somewhat less the establishment of more '30km/h' zones.
- An important share of pedestrians often cross roads despite a red light display.
- Crossing at non-designated locations is a very widespread behaviour.

- Overall responses are clearly affected by the situation in each country (e.g. pedestrian mobility, infrastructure, road safety level etc.)
- A regional pattern is also identified: Northern & Western countries, Eastern countries, Southern countries.

Conclusions (2/2)

- Aside from walking, pedestrians travel frequently as car passengers and as public transport passengers, and less as motorcycle passengers.
- Almost 70% of pedestrians have neutral to positive behaviour and attitudes while a non negligible 30% are expressing negative attitudes towards measures and interventions as well as towards existing pedestrian environment and safety
- In very few countries is one of the three types of pedestrians dominant; in most countries, a non-negligible proportion of 'negative' pedestrians is observed.

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