

# POWERED TWO WHEELERS SAFETY MEASURES: RECOMMENDATIONS AND PRIORITIES

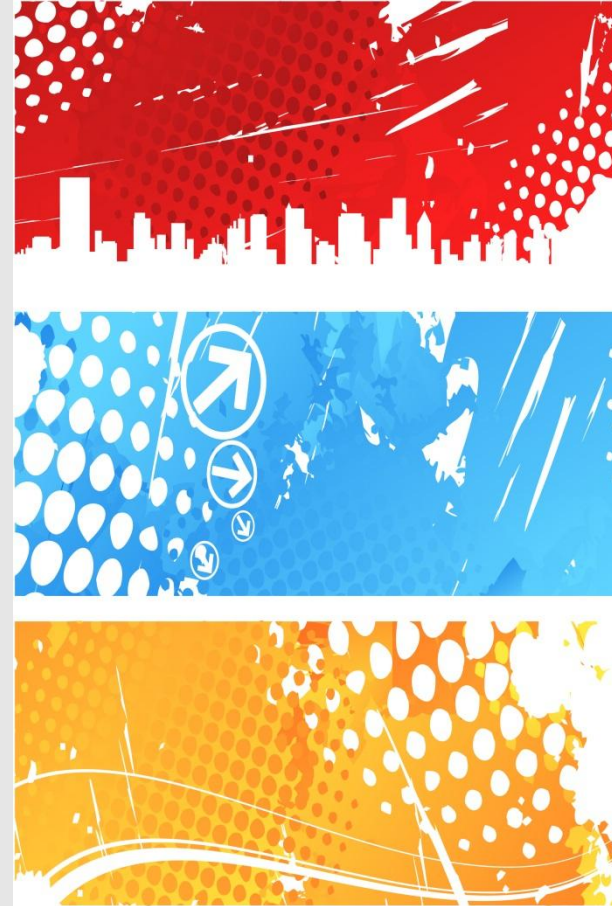


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*Ioanna Spyropoulou, NTUA  
George Yannis, NTUA  
John Golias, NTUA  
Martin Winkelbauer, KfV*

# Background

- Number of PTW traffic increased due to:
  - Re-use of the urban space;
  - In dense urban areas, offer low travel times and easier parking;
  - Exemption from toll charges in several countries in Europe;
  - Increase of “returning” drivers;
  - Low cost of purchase, use and maintenance.
- Observed shift concerning transport modes resulted in:
  - Increase in accidents involving PTWs;
  - Increase severity in accidents with PTW riders.
- During the last decade in the EU, the total number of PTW road fatalities has decreased much less than all other road fatalities.



# Background

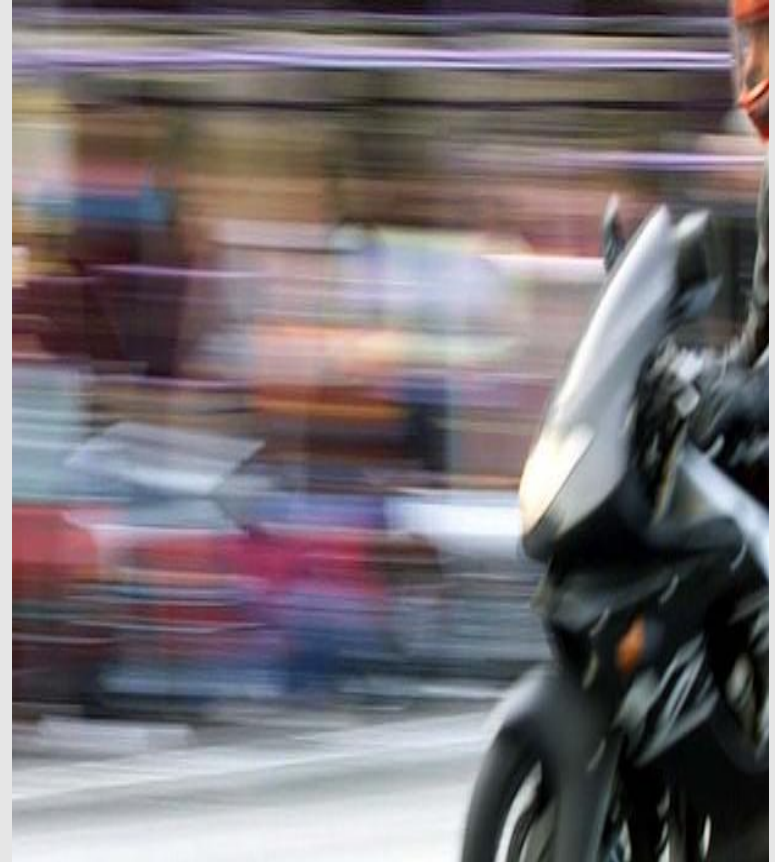
Road Safety is a typical field  
with high risk of important  
investments  
not bringing results



# Objective

## Results from the 2BSAFE research project.

- Collection and analysis information on 104 countermeasures from all relevant fields:
  - Driver;
  - Environment;
  - PTW.
- Two fold objective:
  - Design and testing of a measures assessment methodology;
  - Subsequent evaluation of the existing PTW road safety measures.



# Methodology

## Structure of the road safety measures template

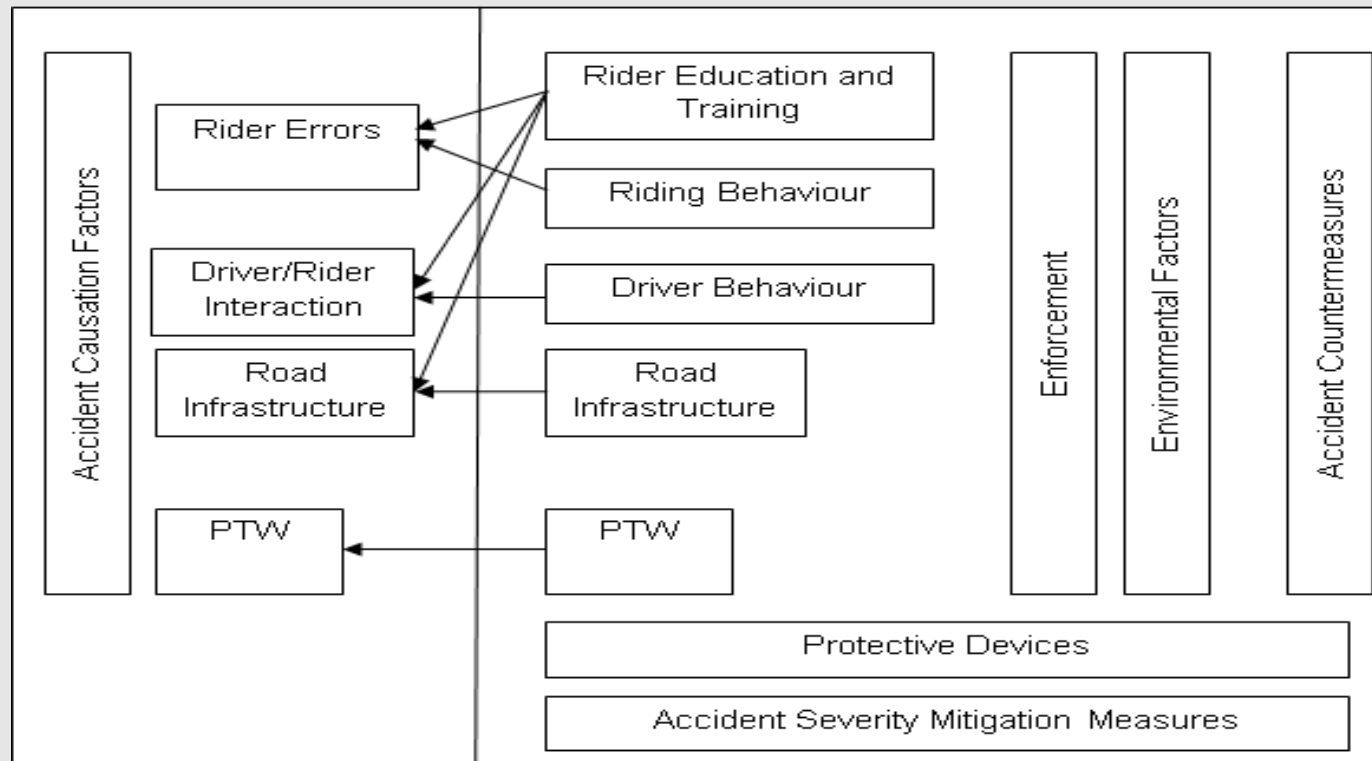
- 1<sup>st</sup> section: General information on the measures template.
- 2<sup>nd</sup> section: linking accident risk factors and targeted countermeasures
- 3<sup>rd</sup> section: collection of information on road safety specific attributes (number of accidents, crash severity, rider severity).
- 4<sup>th</sup> section: collection of the measure abstract as an opportunity to validate the provided information.



# Methodology

## ➤ 2<sup>nd</sup> section:

- focus on the specific characteristics of the measure.
- measure classification according to the PTW type; road category type; rider category.

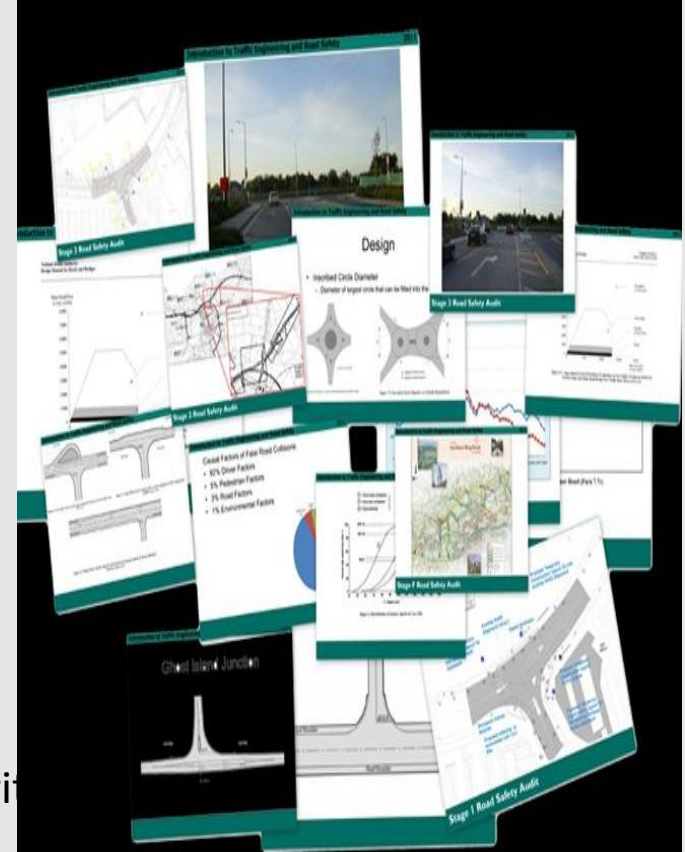




# Methodology

## Assessment and prioritisation methodology

- Beneficiaries
- Clear definition of the problem and of its size
- Scientific background - evidence
- Implementation issues
- Expected impact (quantified)
- Acceptance by the relevant actors
- Sustainability - behavioural adaptation and risk compensation issues.
- Transferability
- Costs and benefits
- Priority: priority scores (0-low priority, 10-high priority)



# Assessment of PTW Road Safety Measures

## Analysis of existing measures

- Classification of measures under more specific categories.

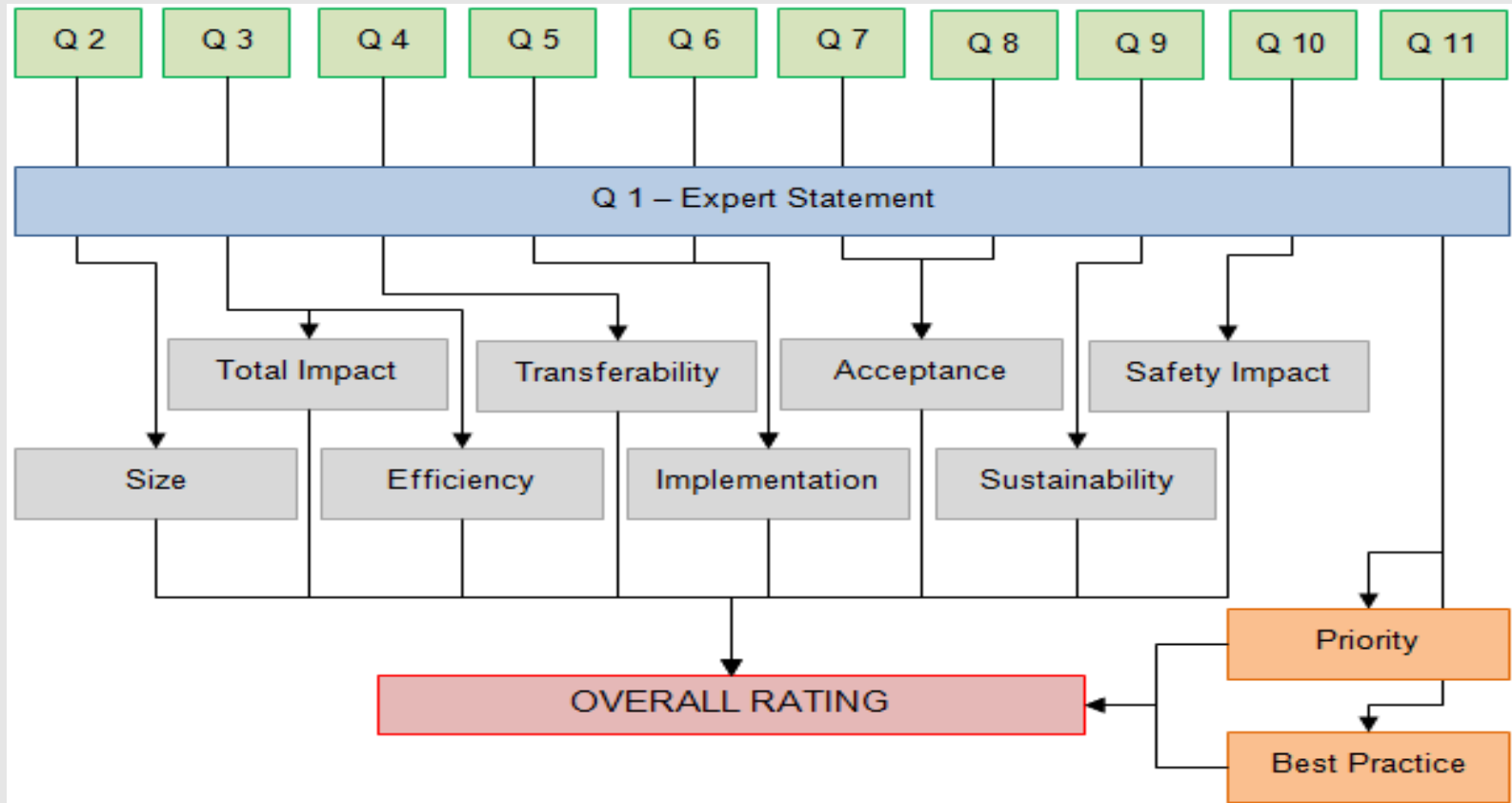
Actor	Domain	Specific Topics	%
Rider	Education, Licensing and Testing	Licensing, basic training Post licensing training Behaviour	14
Rider (could also involve drivers)	Road Safety Education and Campaigns	Ways to promote motorcycle safety Improvement awareness	7
Rider	Rehabilitation and Diagnostics	Rehabilitation of severe/young violators Traffic psychological assessment	2
Other Road Users	Other Road Users	Other road users responsibilities to riders Intelligent Transport Systems	3



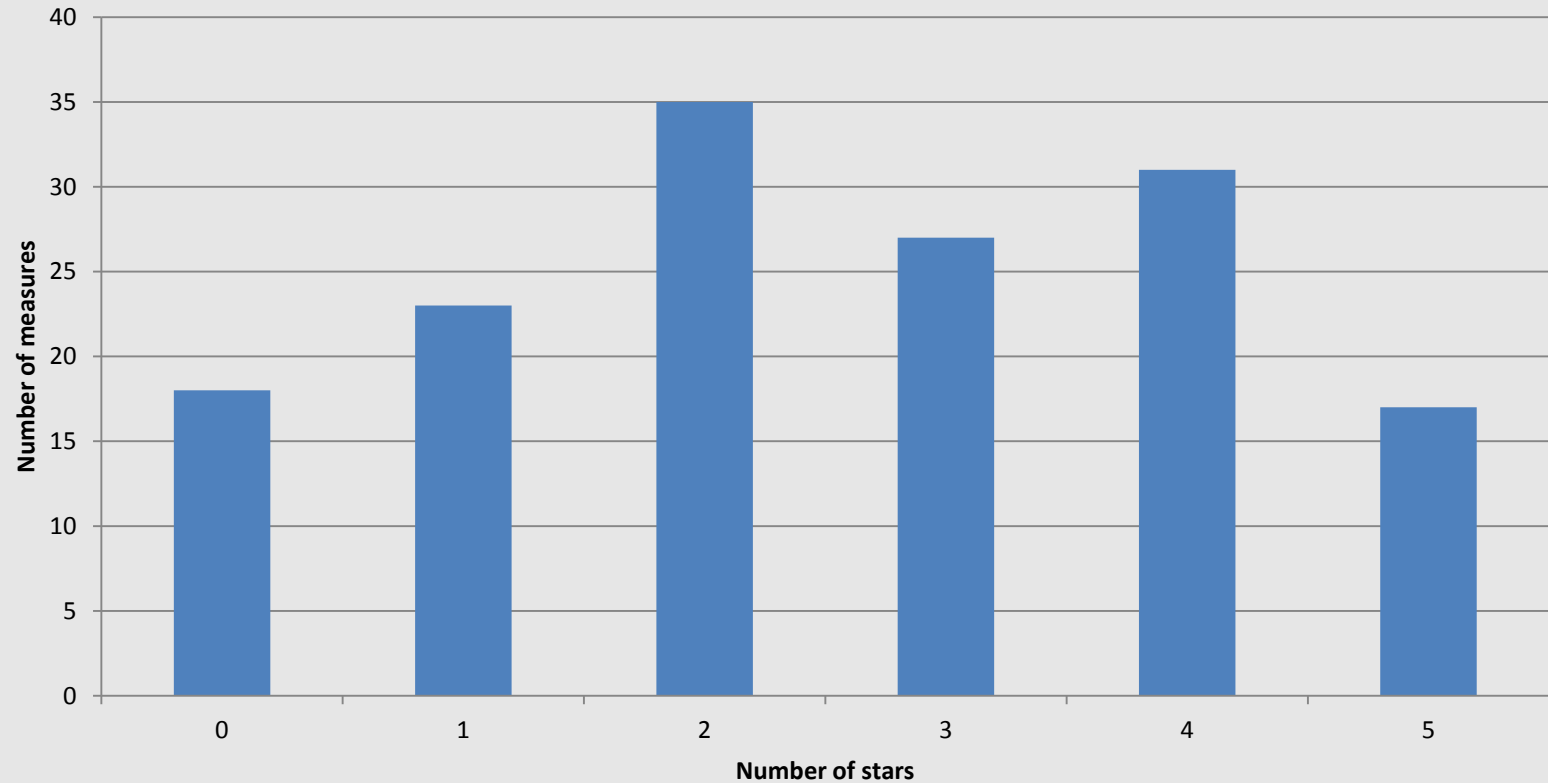
# Assessment of PTW Road Safety Measures

Infrastructure	Road Infrastructure & Pavement	Self-explaining/Forgiving roads Modification of design standards Measures for urban traffic Pavement	24
Vehicle	Standard and Safety Devices	Brakes Passive Safety Devices Advanced Rider Assistance Systems	21
Vehicle & Associated Equipment	Conspicuity and Lights	Improvement of conspicuity Installation and type approval of lights	6
Associated Equipment	Protective Equipment	Standards Various components of protective equipment	7
All domains (horizontal action)	Traffic Law and Enforcement	Enforcement (strategies) Regulations concerning driving manoeuvres	7

# Assessment of PTW Road Safety Measures



# Assessment of PTW Road Safety Measures



# Assessment of PTW Road Safety Measures

## Results of the measures' assessment (by the experts and the riders)

- Measures that involve road infrastructure received highest score from road safety experts and rider representatives (road design, maintenance and operation are contributing accident factors for PTW than other types of vehicles).
- Measures that involve post accident care got high score.
- All measures related to road safety data and data collection (improvement of data collection, road conflict investigation, in-depth analysis of PTW accidents, identification of black spots, etc.
- For several types of measures diverse evaluations between Experts and Riders:
  - PTW conspicuity;
  - Traffic in urban areas and the respective regulations such as filtering and lane splitting;
  - Education and campaigns.



# Priorities and Recommendations`

## Designing a “new” measure

- Several factors need to be considered when designing measures targeting road safety:
  - Focus of the measure;
  - Impact and size of the measure.
- Acceptance issues are of high importance if a measure is theoretically effective.
- Sustainability (illustrates its effectiveness through time) and transferability (same success in different places) are also important.
- Estimation of measure’s success is of crucial importance (a method should be designed prior to implementation).
- Previous experience is vital (already having answers to at least some of the aforementioned elements and not starting from scratch).
- Design of a potential successful “new” measure involve best practices from other countries.
- Careful modification of successful road safety measures for other types of vehicles.



# Priorities and Recommendations

## Research priorities

- Collection of reliable PTW exposure data for the calculation of risk rates.
- More in-depth accident studies for identification of contributing factors leading to an accident.
- More behavioural studies on PTW riders using:
  - Driving simulators (environment includes PTWs);
  - Riding simulators;
  - Naturalistic Riding Studies;
  - Verbal methods (questionnaires).
- Knowledge on riders' aim, motives, risk attitudes with microscopic analysis.





# Conclusions

- Need for design and testing of a measures assessment methodology to improve road safety measures.
- Closer cooperation between road safety experts and rider representatives.
- Collection of PTW exposure data from in-depth accident studies and behavioural studies are research priorities.
- Design of PTW road safety measures must have two points of view, both the rider and the other road users.
- Prior to design of a “new” measure several factors must be evaluated.



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## Apoio



## Patrocinadores

