

## NTUA Road Safety Update - November 2015

National Technical University of Athens  
**Road Safety Update**  
November 2015

### Akis Theofilatos defended his PhD thesis on accident probability and severity 2015



Akis Theofilatos has successfully defended his PhD thesis titled: **An advanced multi-faceted statistical analysis of accident probability and severity exploiting high resolution traffic and weather data**. This PhD thesis was carried out at the Department of Transportation Planning and Engineering at the School of Civil Engineering of the National Technical University of Athens under the supervision of Prof. George Yannis.

The objective of this PhD thesis is the investigation of accident probability and severity exploiting high resolution traffic and weather data from urban roads and motorways, collected on a real-time basis, with specific focus on Powered-Two-Wheelers. For that purpose, an advanced mesoscopic multi-faceted statistical analysis was conducted in order to expand previous road safety work and contribute to the further understanding of the complexity of accident probability and severity. Linear and non-linear models were developed on the basis of 6-year accident data from urban roads as well as an urban motorway in Greater Athens area (Attica Tollway). Empirical findings indicate that high resolution traffic and weather data are capable of opening new dimensions in accident analysis in urban roads and urban motorways. The multi-faceted statistical analysis conducted in the thesis has revealed a consistent and strong impact of traffic parameters on accident probability and severity. It is interesting that weather parameters were not found to influence accident probability and severity when linear relationships are considered, however, the **application of cusp catastrophe models** demonstrated that it is likely that even small traffic and weather changes may have a critical impact on road safety in urban roads as sudden transitions from safe to unsafe conditions (and vice versa) may occur, especially for PTW traffic. [LINK](#)

### Together for Safer Roads Global Coalition - White Paper 2015



The Private Sector Global Coalition Together for Safer Roads (TSR) composed by 11 leading global companies has recently published a White Paper titled **"Investing in Road Safety - A global imperative for the private sector"**, setting the orientations and priorities of the TSR Coalition for advancing road safety in the world. This White Paper was prepared by the TSR's Expert Panel composed by international road safety experts, with the active participation of NTUA Prof. George Yannis.

In this White Paper, TSR's Expert Panel assesses progress since the United Nations General Assembly established the United Nations Decade of Action for Road Safety in 2010, **identifies gaps, and discusses the role of the private sector in advancing road safety**. The role of the Global private sector Coalition is seen under three perspectives: as collaborators with the public sector and NGOs in demonstration projects; as managers of vehicle fleets traversing the world's roads; and as participants in specific industries that have unique opportunities to improve road safety. With the United Nations Decade of Action for Road Safety at its midpoint, business has an opportunity to drive a groundswell of meaningful cross-sector action and help save millions of lives. [LINK](#)

### IRTAD - Why Does Road Safety Improve When Economic Times Are Hard? 2015



The International Road Traffic and Accident Database Group (IRTAD) of the International Transport Forum (ITF/OECD) published a Report on **Why Does Road Safety Improve When Economic Times Are Hard?**. In this Report previous studies were reviewed and new ones are presented demonstrating that there is clear evidence that when economic growth declines, and particularly **when unemployment increases, road safety improves**, particularly among young people.

Furthermore it was found that **the economic downturn in 2009-10 may well have contributed to about two-thirds of the decrease in road fatalities since 2008**. It is suggested that policy makers need to take careful account of these results when setting up road safety targets and when designing road safety strategies for the future. NTUA has contributed actively to the preparation of this Report. [LINK](#)

### European Commission - Good practices for road user distraction risk 2015



The Road Safety Unit of DG Move of the European Commission has recently released a Report titled **"Study on good practices for reducing road safety risks caused by road user distractions"** prepared by TRL, TNO and RAPTRANS. The study concluded that **10-30% of road accidents in the EU could have distraction as a contributory factor**, although limitations of both data and their definitions mean that this figure requires further validation.

The Study identified a series of countermeasures that can be used to address driver distraction, including non-technology-based approaches [legislation, certification, public awareness campaigns and education during the licensing acquisition process (as well as for professional drivers)] and **the most promising technologies** [collision warning systems (forward collision warning and lane departure warning), voice recognition, biometry, head up displays, artificial intelligence, and vehicle automation]. Standardised Human-Machine Interface design should also be an important component of an EU-wide approach to distraction. The Study concluded with nine key cost beneficial recommendations related to data, technologies, awareness & education, and standards addressed to the European Commission but also to all national and international road safety stakeholders (Authorities, Industry, Research, Interest groups). [LINK](#)

### European Commission - Main Road Safety Facts & Figures 2015



The Main Road Safety Facts and Figures in the EU are highlighted at the respective Traffic Safety Basic Facts 2015 available at the European Road Safety Observatory of the European Commission. These Traffic Safety Basic Facts contain a comprehensive series of statistical tables with the latest available data from the CARE database of the European Commission.

Road fatalities in the EU countries fell by 45% between 2004 and 2013, however **fatality rates show both a north-south divide and an east-west divide across Europe**. The fatality rate for males in the EU is over three times the rate for females and road fatalities decreased by more than half among children between 2004 and 2013, but by less than one tenth among those at least 80 years old. In the EU, more than half of all fatalities occurred on rural non-motorway roads. [LINK](#)

### 2nd Global High-Level Conference on Road Safety, Brasilia 2015



The Second Global High-Level Conference on Road Safety: Time for Results, hosted by the Government of Brazil took place with great success in Brasilia, on 18-19 November 2015 with the active participation of more than 1.500 high level road safety decision makers and stakeholders from 150 countries. [LINK](#)

The 2nd Global High-Level Conference on Road Safety defined the urgent measures needed to achieve the 2030 Agenda for Sustainable Development's ambitious target to halve road traffic deaths by the end of this decade. The Conference adopted the **"Brasilia Declaration on Road Safety"**, which will guide action through the end of the UN's Decade of Action for Road Safety 2011-2020 and beyond. [LINK](#)

### Annual POLIS Conference - Brussels 2015



POLIS, the European cities and regions networking for innovative transport solutions has organised its Annual Conference on "Transport Innovation for sustainable cities and regions", which took place with great success in Brussels, on 19-20 November 2015. More than 400 mobility professionals and experts from across Europe and beyond have come together to debate on urban and regional mobility. At the conference, POLIS also launched its new policy paper **"Sustainable Urban Mobility and the Smart City"**, stating that the role and potential of urban mobility in making the city smarter is currently not sufficiently recognised. [LINK](#) All presentations are now available. [LINK](#)

A special workshop of road safety data in the cities took place with great success, with the active contribution of NTUA. This workshop aimed at **"Translating road safety data into policies and measures"** with focus on two approaches for local road safety policy: one on accident databases including data collection and how to identify measures and the second addressing the potential of road safety performance indicators (SPIs).

### 24th World ITMA Congress, Doha 2015



The 24th World ITMA Congress took place with great success in Doha, on 16-18 November 2015, covering all areas of Traffic Medicine and its associated disciplines. The motto of the 24th World ITMA Congress was **Traffic Medicine and Road Safety in Fast Developing Countries**.

The Congress focussed on the progress in traffic safety and traffic injury prevention and treatment in recent years, and brought together more than 400 traffic medicine experts who shared the most advanced traffic medicine concepts, theories and techniques in order to promote traffic crash prevention, traffic safety, first-aid, medical treatment, and accordingly reduce the mortality and disability resulting from traffic injury in the world, to raise the road user's health standard and the quality of life. [LINK](#)

NTUA presentation concerned: 'Developing efficient traffic safety law enforcement programmes in rapidly developing countries' [LINK](#)

### HIT/HITE - 7th International Congress on Transportation Research, Athens 2015



The 7th International Congress on Transportation Research, organised by the Hellenic Institute of Transport and the Hellenic Institute of Transportation Engineers took place in Athens, on 5-6 November 2015. The main topic of the Congress was: **"From basic research to innovative application"**. This Conference series on Transport Research (ICTR), is considered a well established event in the transport sector in Greece in which more than 250 transport experts, decision makers and stakeholders contributed and discussed state of the art research findings and challenges ahead for more efficient, safer, and environmental and energy friendly transportation systems, with focus on the design, development and implementation of innovative new applications. [LINK](#)

- NTUA road safety presentations concerned:
- 📄 Multivariate Statistical Methods for explaining Powered Two Wheelers' Traffic in Urban Arterials
  - 📄 Road Safety Training through a Master Course in Belarus
  - 📄 Road accident type influence on Accident severity in Greece
  - 📄 How does socio-economic status affect the use of CRS and seat belts? Preliminary results from a study in Athens
  - 📄 Development of an Educational Scheme for Road Safety Auditors in Greece

### World Day of Remembrance for Road Traffic Victims 2015



The World Day of Remembrance for Road Traffic Victims is observed on the third Sunday of November each year (this year on 15 November 2015) by an increasing number of countries on every continent around the world. This day adopted by the UN in 2005, was **dedicated to remembering the many millions killed or injured in road crashes** and their families and communities, as well as to pay tribute to the dedicated emergency crews, police and medical professionals who daily deal with the traumatic aftermath of road death and injury.

In Greece this year, Elthita Rhodes, member of FEVR (European Federation of Road Traffic Victims) and the Global Alliance of NGOs for Road Safety organised a series of events to commemorate this day [LINK](#), including the promotion of the special video translated in several languages [LINK](#). Furthermore, on the occasion of this day, the Road Safety Institute Panos Mylonas (IOAS) has released the results of the UN Millennium Development Campaign MY World. [LINK](#)

### Ministry of Transport - e-Drive Academy Workshop, Athens 2015



A workshop on the innovative internet platform e-Drive organised by the General Directorate for Road Safety of the Hellenic Ministry of Infrastructure, Transport and Networks and supported by the European Commission and Digital Greece, took place with great success in Athens, on November 2nd, 2015. e-Drive is expected to become **a central road safety web platform in Greece**, for developing and exchanging road safety knowledge and resources with final objective to gradually develop consciousness towards an ecological and safe driving behaviour in Greece. The e-Drive Academy platform contains currently a series of programmes, destined for training of young, novice, older and professional drivers. [LINK](#)

### ERF European Road Infrastructure Congress, Leeds 2016



The 1st edition of the European Road Infrastructure Congress organised by the European Union Road Federation, in partnership with the Road Safety Markings Association, will take place in **Leeds, on 18-20 October 2016**. The Congress will bring together policy makers, academics, research institutes, road authorities and industry representatives from across the continent to explore the following three overarching themes:

- Delivery of Road Infrastructure
- Road Safety
- Adaptation of road infrastructure in view of technological changes

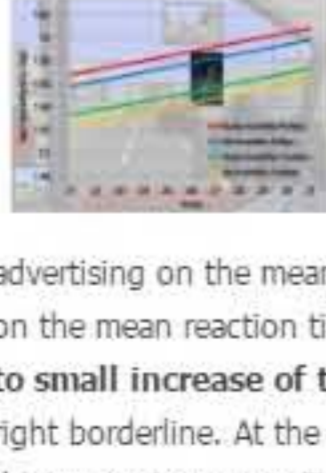
Abstract submission deadline is set for the end of December 2015. [LINK](#)

### Road fatalities by accident type, Greece 2013



According to the ELSTAT final road accidents data for 2013, collisions with stopped vehicle and when running off the road are the two most common accident types outside built-up areas. At angle collisions and pedestrian accidents, side impact and rear end collisions are the most common accident types inside built-up areas. **Accident severity is more than 4 times higher outside built-up areas.** [LINK](#)

### Impact of roadside advertising to driver behaviour and safety in cities 2015



A Diploma Thesis titled "Investigation of the impact of roadside advertising to driver behaviour and safety in cities with the use of driving simulator" was presented by Anastasia Gkouskou in July 2015. An experimental process on a driving simulator was carried out, in which all participants drove in specially selected driving scenarios. Regression statistical models were developed to investigate the impact of roadside advertising on the mean speed and the lateral position of the vehicle from the right borderline (lognormal) and on the mean reaction time (linear). The models' application demonstrated that **roadside advertising leads to small increase of the mean reaction time and the mean lateral speed** of the vehicle from the right borderline. At the same time, it leads to small decrease of the mean speed, perhaps due to overloaded driving environment. Finally, roadside advertising appears to have no effect on the headway distance and the probability of getting involved in an accident. [LINK](#)

### A review of Powered-Two-Wheeler behaviour and safety - 2014



A paper titled "A review of Powered-Two-Wheeler behaviour and safety" co-authored by Athanasios Theofilatos and George Yannis is now published in the International Journal of Injury Control and Safety Promotion. Current research on PTW safety is not as extensive as for other road users (passenger cars, etc.) and research provides a critical review of research on Power-Two-Wheeler behaviour and safety with regard to data collection, methods of analysis and contributory factors, and discuss the needs for further research. **Both macroscopic analyses (accident frequency, accident rates and severity) and microscopic analyses (PTW rider behaviour, interaction with other motorised traffic) are examined and discussed** in this paper. The research gaps and the needs for future research are identified, discussed and put in a broad framework. When the interactions between behaviour, accident frequency/rates and severity are co-considered and co-investigated with the various contributory factors (riders, other users, road and traffic environment, vehicles), the accident and injury causes as well as the related solutions are better identified. [LINK](#)

This Road Safety Update aims to support frequently the Greek and the International Road Safety Community with current key road safety knowledge and data, which is gathered, analysed and organised within the research activities of the Department of Transportation Planning and Engineering of the National Technical University of Athens.

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## About NRSO



The mission of the NTUA Road Safety Observatory ([www.nrso.ntua.gr](http://www.nrso.ntua.gr)) is to support the Greek and the International Road Safety Community with current key road safety knowledge and data, which are gathered, analysed and organised within the research activities of the Department of Transportation Planning and Engineering of the School of Civil Engineering of the National Technical University of Athens, as well as with co-operations with various national and international road safety organisations.

The NTUA Road Safety Observatory has been developed within the framework of two European Union co-funded research projects, namely SAFETYNET - Development of the European Road Safety Observatory (2004-2009) and DACOTA - Road Safety Data Collection, European Union co-funded research projects, namely Responsible for NTUA, Professor George Yannis.