Development of a Platform for Global Road Safety Data Analysis

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George Yannis\textsuperscript{a}, Katerina Folla\textsuperscript{a}, Dimitrios Nikolaou\textsuperscript{a}, Anastasios Dragomanovits\textsuperscript{a}, Xuesong Wang\textsuperscript{b}

\textsuperscript{a}National Technical University of Athens, Greece
\textsuperscript{b}Tongji University, China
Road Safety Worldwide

- **1.35 million people** are killed in road accidents worldwide.

- Road accidents constitute the 8th cause of death and the 1st cause of death among people aged 5-29 years old.

- **Europe** presents the lowest traffic fatality rate per population globally.

- **Africa** has the worst road safety performance (up to 10 times more fatalities per population compared to the best performing European countries).

Source: WHO, 2018
The i-safemodels project

- **Project partners:**
  - National Technical University of Athens (www.nrso.ntua.gr)
  - OSeven Telematics (www.oseven.io)
  - Tongji University (https://en.tongji.edu.cn)
  - Third country partners:
    - University of Central Florida, US
    - Purdue University, US.
    - Loughborough University, UK
    - German Aerospace Center, DE

- **Duration of the project:** 36 months (2019 – 2022)

- **Operational Program:** "Competitiveness, Entrepreneurship and Innovation" (EPAnEK) of the National Strategic Reference Framework (NSRF): Greece - China Joint R&D Projects

- **Objective:** to propose international comparative analyses of road traffic safety statistics at macroscopic and microscopic level.
Objectives and Methodology

Objective:
• To present the methodological approach for the development of a platform for global road safety data to support macroscopic road safety modelling and international comparative analyses

Methodology:
• Identification of the necessary road safety indicators
• Development of the methodological framework
• Data collection from international road safety databases
• Exploration of new emerging technologies as an alternative data source
Why road safety data?

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

• Absence of **monitoring** and accountability limits seriously road safety performance

• Decision making in road safety management is highly dependent on appropriate and **quality data**

• Very often we look where the data are and **not** where the problems and solutions are
Needs for Road Safety Indicators

• The **SUNflower approach** uses a target hierarchy which is comprised by five layers: Structure and culture, Safety measures and programmes, Safety performance indicators (SPIs), Number of killed and injured and Social costs

• Within the **DaCoTA project** (2010-2012) data on road accidents, risk exposure, SPIs, under-reporting of crashes, country characteristics, social costs and traffic laws and measures were collected

• The **UN Global Plan of Action** proposed several road safety activities categorized in five pillars: Road Safety Management, Road Infrastructure, Vehicle, Road User and Post-Crash Services

• **WHO** collects data on road traffic deaths, post-crash response, speed, drink-driving, protective systems use, mobile phone use, road safety management and safer mobility

• In the **SafeFITS project**, a methodological framework was designed combining the five road safety pillars of Global Plan of Action with the concept of the SUNflower pyramid
Database Overview

- Economy and Management
  - Demographics
  - Economy
  - Management
- Transport Demand and Exposure
  - Roads
  - Vehicles
  - Road Users
- Measures
  - Vehicles
  - Road Users
  - Roads
  - Post Impact Care
- Safety Performance Indicators
  - Roads
  - Road Users
  - Vehicles
  - Post Impact Care
- Road Safety Outcomes
  - Fatalities and Injuries
  - Costs
Data Collection Methodology

• **International Road Safety Databases**
  - United Nations Economic Commission for Europe (UNECE)
  - World Health Organisation (WHO)
  - International Road Federation (IRF)
  - Organisation for Economic Co-operation and Development (OECD)
  - European Commission (EC)

• **Collaboration with national authorities and private companies**
  - questionnaires to be distributed to national representatives
  - new emerging technologies (i.e. telematics data) for the estimation of specific exposure and safety performance indicators
The data platform proposed within this research will be established for the convenience of model development and comparative analyses within the i-Safemodels project.

A decision making supportive database will be formulated from all the aspects of safety management strategies, roadway infrastructure design and policy measures based on:
- Macroscopic analyses, providing a broader spectrum for long-term policy-based measures
- Statistical methodologies for making country or region comparisons and test model transferability

A powerful tool for road safety analysis and decision support at global level, which will be open and available for the research and policy-making community.
Conclusions

• The development of an integrated international road safety management system could be beneficial to policy makers by providing solutions for road safety issues with much less effort and cost.

• This could be achieved if research results and road safety models were transferable among the different countries and regions.

• The collection of the proper road safety indicators could support more sophisticated macroscopic road safety analyses.

• The combination of transport related data collected through new technologies with the traditional road safety indicators could better support decision making process.
Thank you!