

Cost-Benefit Analysis of Applying UN Vehicle Regulations for Road Safety

1. The aim of this study is to introduce and demonstrate methodologies that are available and used by governments and other vehicle sector stakeholders to project the economic utility of applying UN Vehicle Regulations that have been identified in a series of strategic documents, such as the Global Plan for the UN Decade of Action on Road Safety, as key for the improvement of national road safety performance.
2. The publication will cover most important aspects related to the subject matter, from setting the stage by presenting an overview of current global state of road safety performance to ultimately laying out the road safety impact assessment of vehicle regulations and its benefit cost methodology, showing benchmarks of these methodologies. As a result, the reader will benefit from a holistic overview of the importance of conducting vehicle regulation impact assessment and cost benefit analysis. This publication is particularly addressing those countries or regions that have not yet implemented these methodologies in exercises for prioritizing road safety measures. Thus, it is aiming to support in the future a more inclusive evidence-based approach of the needs related to vehicle safety of emerging economies worldwide.
3. The study will be structured as follows:
 - a) The introduction of the publication will elaborate the rationale for its production and will define the target audience.
 - b) The first section will showcase global, regional and national road traffic safety statistics, examples of best performance records in road safety and of countries where improvement is urgently needed. The chapter will briefly introduce the UN Vehicle Regulations and UN Global Technical Regulations (UN GTRs) that are identified in strategic documents (UN Decade of Action) as key for improving road safety.
 - c) Section two will introduce the UNECE World Forum for Harmonization of Vehicle Regulations (WP.29) and the UN Agreements that it administers, under the umbrella of which key UN Regulations and UN GTRs for road safety are developed and adopted. It will describe the international regulatory process, national implementation and enforcement experiences and provide guidance for accession to the agreements and participation in WP.29.
 - d) A literature review and meta-analysis of vehicle safety regulation impact assessment studies will be presented in section three.
 - e) Section four will introduce the methodologies and their respective sequences of steps for carrying out an impact assessment and cost-benefit analysis of applying vehicle regulations. It will, introduce the state of the art in valuation approaches used in road safety science – the “human capital” and the “willingness-to-pay” approaches, describe concepts such as the statistical value of life and the MAIS in detail and explain how these are integrated into valuation models.
 - f) The penultimate section will provide examples of how the “human capital” valuation model can be used for calculating the benefit-cost ratios of applying specific UN Vehicle Regulations, or groups of complementary regulations,

based on existing data about their projected effect on the volume of road traffic crashes and the severity of their impact on human health. Three to four case studies – using the “human capital approach” – will be presented: a number of Low-income¹ and Middle-income country (Asia, Africa, Europe and Latin America).

- g) The final chapter will recap the most important elements of the study. It will highlight the advantages of applying the proposed methodology for assessing the impact and determining benefit-cost ratios of applying UN Vehicle Regulations for Road Safety, and draw attention to the limitations of the methodology, i.e. some elements that are overlooked by design in current state of the art.

4. Through presenting the methodologies used for policy making in the sector and respective results achieved in countries pioneers in road safety science, this study will in no uncertain terms demonstrate the positive socioeconomic impact that UN Vehicle Regulations can deliver in societies that may choose to apply them in the future.

5. The UN Decade of Action on Road Safety is coming to an end in 2020. The expected output of these activities targets the follow-ups of the Decade for the period 2020-2030, namely facilitating a process to develop voluntary global performance targets and corresponding indicators for road safety, - which was commended in the General Assembly Resolution that was adopted on 12 April 2018² - particularly target 5: "by 2030, 100% of new and used vehicles meet high quality safety standards, such as the recommended priority UN Regulations, Global Technical Regulations, or equivalent recognized national performance requirements.

6. The outputs of proposed activities can be used in the future 2020-2030 decade as a support tool for achieving road safety performance targets. In all likelihood, they will draw attention to the need for the creation of Road Safety Observatories, collecting relevant data and information to provide an efficient and reusable resource for international society. This publication will demonstrate the commitment of WP.29 towards a participative and inclusive approach in road vehicle safety policy development, reaffirming the World Forum’s mandate and its role in future international discussions on road safety.

¹ World Bank country income classifications

² UN General Assembly Resolution A/RES/72/271