

Challenges and opportunities for the assessment of the effectiveness of road safety measures



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Overview

The objective of this research is to develop a comprehensive synthesis on current challenges and opportunities for the assessment of the effectiveness of road safety measures worldwide, with focus on the potential for transferability.

This synthesis comprises the preliminary results of the work carried out in the framework of the on-going Working Group on the assessment of the effectiveness of road safety measures, of the Joint Transport Research Centre (JTRC) of the Organisation for Economic Cooperation and Development (OECD) and the International Transport Forum (ITF).

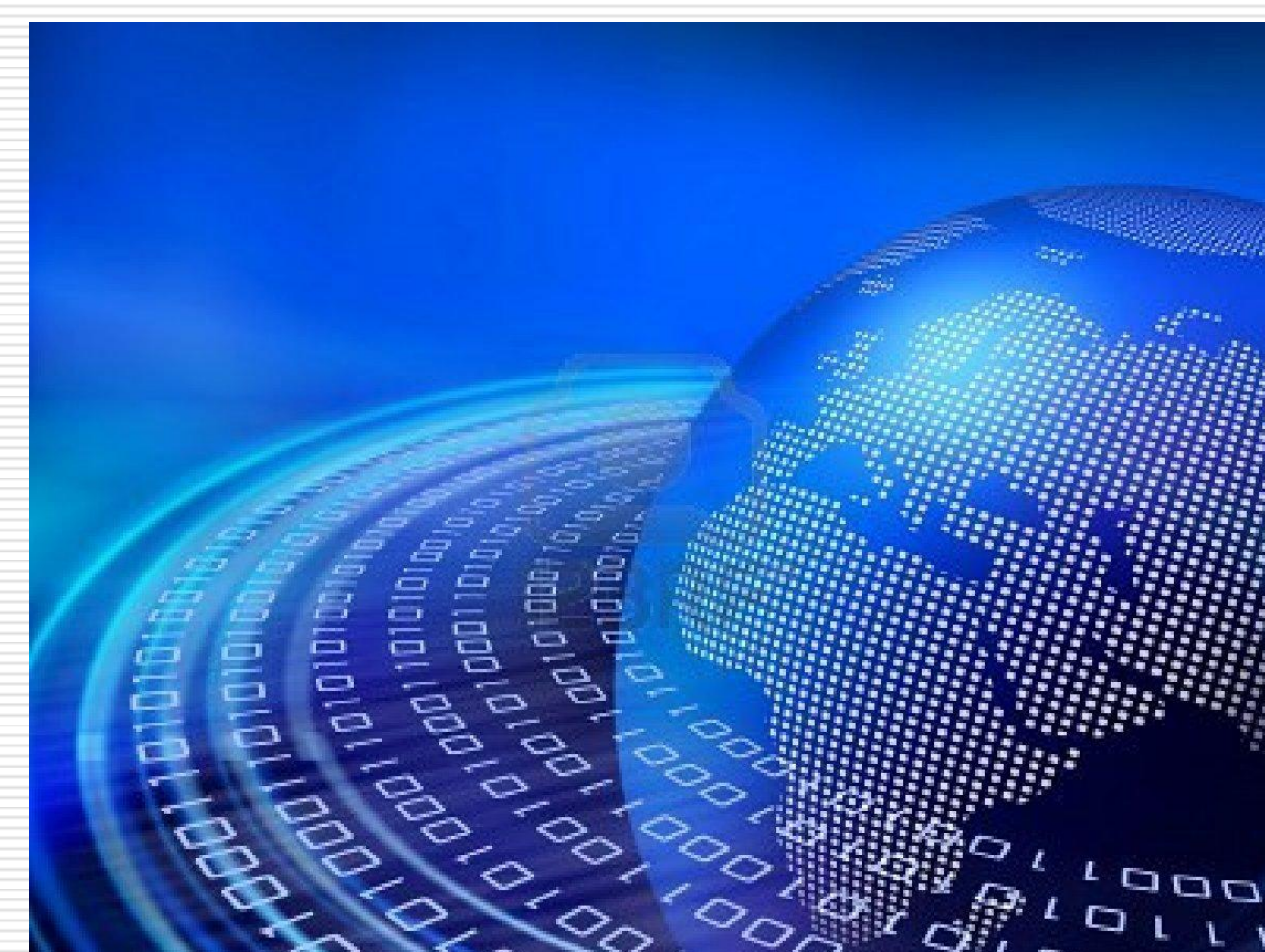
Appropriate data and statistical evaluation methodologies together with systematic procedures and exchange of assessment results are considered as the prerequisites for acquiring the necessary knowledge, on which decision makers could rely for their decisions.

An opportunity for producing more reliable efficiency assessment results is the intensification of international cooperation both at the methodology and at the results level allowing to maximize research investments among countries and more rapid global dissemination and use of life saving countermeasures.

Governments are therefore challenged to set policies or establish guidelines that will help improve the overall quality of effectiveness assessment research and results.

CMFs transfer obstacles

Critically, in this era of economic crisis, the justification of investments in a field such as road safety, where large investments can potentially bring little or no results (and on rare occasions negative results), is more than necessary.



Crash Modification Functions (CMFs) facilitate the prediction of safety effect and allow a synthesis of diverse evaluation results that in turn allows for more universal understanding of safety effectiveness measures.

One of the primary obstacles to international cooperation in the sharing of CMFs is the lack of a uniform understanding of the value, importance and usage of CMFs in road safety decision making

A fundamental obstacle to CMF transferability is the nature of the road safety system, which is determined by a variety of interrelations between driver behaviour, road infrastructure and vehicle characteristics that make every road traffic system unique and necessitates a specific mix of road safety measures

Fundamental to the development of accurate CMFs is access to reliable crash data. Most countries have established crash database systems to record the location and circumstances of crashes.

Challenges

National Authorities

Road authorities may fear that ex-post evaluation of measures may prove that important road safety investments had little or limited impact with potential consequences for both the political and administrative authorities responsible for the programs.



In addition, the comparison of a measure's cost effectiveness between different regions and between different countries may reveal high discrepancies not only in the unit cost of the measure but also in the implementation effort, thus generating questions about the practices used not only by the authorities but also by the industry.

While these concerns may exist, they are natural outcomes of our increased knowledge of and approach to estimating effectiveness. As a result, such concerns must be overcome.

International Cooperation

The overarching challenge presented by the interest in international sharing of CMFs is to determine what government agencies in OECD countries can do to make assessments of road safety measures systematically transferable and their results internationally acceptable

A challenging role for Government would likely be to develop and disseminate policies and guidelines that would influence the conduct of research and appropriate documentation of results.

Communicating the value of certain countermeasures across international boundaries and seeking their rapid adoption is a challenging prospect if certain specific information is not presented



International recommendations and guidelines for the necessity and the procedures of CMF analyses may prove to be very beneficial to countries with high inertia to change current practices that involve no evaluation and no accountability of road safety investment efficacy

Cost - Effectiveness and Cost - Benefit

An unwanted consequence of these discrepancies is that measures regarded internationally as cost-effective and best practices may in some countries appear as having costs greater than benefits.

Two possible ways of handling this is by

- revising the monetary valuation of crashes
- favouring cost-effectiveness analysis, instead of cost-benefit analysis.



Opportunities for International Cooperation and Transferability

This research in its entirety is designed to identify these opportunities and encourage positive action to support transferability.



There is a foundation of cooperation among some select and respected researchers that can be drawn upon to involve others and expand the cooperation

The advancement of thinking about what research produces a good CMF

Most European countries set specific quantitative road safety targets and adopt related road safety strategies towards these targets, within the established priorities and the resources available

In the recent years, important research efforts have been made towards the standardization of the methods for estimating the safety effects of road safety measures

- The first issue examined concerns the accuracy of the estimation, so that potential bias or other confounders are eliminated
- The second critical issue concerns the conditions and necessary adjustments required to allow the transferability of the safety effect estimates to different settings or countries

Although the knowledge obtained from the international literature may prove very useful in the identification of several good practices of cost-effective measures, thorough analysis on a case-specific basis is always necessary in order to optimise the effects of a measure in different countries

Discussion

The demand for safety effectiveness measures – i.e. CMFs – is increasing both regionally and country due to increased demand for cost-effectiveness and cost-benefit assessments

There are several possible ways to begin to address the challenges and opportunities for the assessment of the effectiveness of road safety measures:

Research conducted to develop Crash Modification Functions should follow good international practices, like those treated in the OECD/ITF WG

Road safety policies should generally undergo economic evaluation using CMFs through properly documented processes to ensure transparency.

International dialogue and leadership is necessary to advance a broader global effort on research programs and international cooperation is needed in the field of progressive standardization of CMFs



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