

Summary:

Barriers to the use of efficiency assessment tools in road safety policy

Searching for an efficient path to accident reduction in Europe

Many European countries have set ambitious targets for reducing the number of road accident fatalities. The European Union has a target of reducing the number of road accident fatalities from 40,000 in 2000 to 20,000 in 2010. Efficiency Assessment Tools (EAT) can help policy makers identify the most cost-effective or profitable road safety measures. It is reasonable to assume that more fatalities and injuries could be prevented if road safety policy priorities were based on well-performed efficiency analyses. EAT comprise cost-benefit analysis (CBA) and cost-effectiveness analysis (CEA). CEA sets out from given road safety targets or road safety budgets and rank measures according to lowest monetary costs. It is a method for estimating the € cost of, e.g., one life saved, for a given road safety measure. CBA involves monetary assessment of both costs and benefits of a measure. CBA enables efficiency assessment of both road safety measures and infrastructure investments in which road safety compete with other goals, like mobility and environment. It can thus handle monetary comparison of safety goals with other societal goals. Comparable to the market place CBA provides a weighting of allocations according to “one euro one vote”.

There exist a lot of cases of both CBA and CEA of road safety measures from European countries. However, in most EU/EEA countries EAT are not regularly used in the assessment of road safety priorities. CBA is applied primarily when larger infrastructure investments are considered, but that does not necessarily imply that the safety effects of such projects are assessed monetarily. Countries of the Northern (or North-Western) part of Europe have gone furthest in using CBA as an integrated tool in the decision-making process of the transport sector, especially at the national/state level, also including the monetary assessment of safety effects. For designated road safety measures CBA is relatively less used than CEA. This also applies to lower decision levels, i.e., local/regional levels. In countries of the Southern/Central part of Europe, EAT are generally not applied for the assessment of road safety measures. However, although EAT are more used in the early stage of the decision-making process in the Northern part of Europe, that does not imply that the priorities from the EAT are implemented at the political level.

Identification of barriers

Some of the barriers that may prevent the use of EAT in road safety policy, or prevent the implementation of priorities given from EAT, are identified and analysed in this report. There is an underlying assumption that barriers generally are stronger against CBA than against CEA, although there also exist common barriers against both methods. Thus, although the term EAT is applied, in many cases barriers will relate particularly to CBA. The barriers may be philosophically based, e.g., such that they involve a *fundamental* rejection of the principles of EAT. The barriers may also be related to *institutional* settings, e.g., that existing laws, directives or traditions rule out the use of EAT in decision-making involving road safety. Further, barriers may be related to *technical*, or methodological, aspects of EAT, e.g., that decisive inputs for applying EAT or knowledge about the use of EAT are lacking. Finally, some barriers may be related to the *implementation* of policies, such that even if EAT-based priorities are given from the earlier stage of the decision-making process these may be partly or fully set aside when the final decisions are made. Another distinction can be drawn between *absolute* and *relative* barriers. Absolute barriers are barriers that cannot be expected to disappear as a result of information from the Thematic Network ROSEBUD or other joint efforts of the European research community. These barriers are fundamental and institutional barriers to the use of EAT in planning, in addition to barriers to the implementation of policies based on efficiency analyses. Relative barriers are those that the ROSEBUD project can attempt to influence. These consist primarily of technical barriers and, possibly, some institutional barriers to the use of EAT.

Shedding a theoretical and empirical light on barriers

The identification and analysis of barriers are based on a triple approach. Firstly, existing road safety priorities and decision-making procedures are reviewed for six European countries plus Israel. Three of the countries are situated in the Northern (or North-Western) area of Europe, i.e., Germany, Netherlands and Norway. Four are situated in the Southern/Central (or South-Eastern) area, i.e., Italy, Hungary, Czech Republic plus Israel. These are the countries of the Partner institutions in Work Package 2 of the Thematic Network ROSEBUD. Secondly, a theoretical model of actual policy making and a detailed classification of barriers and sub-barriers is developed. And, thirdly, the results of a survey of decision makers concerning barriers, carried out at both the national and regional/local levels in the seven participating countries, are presented.

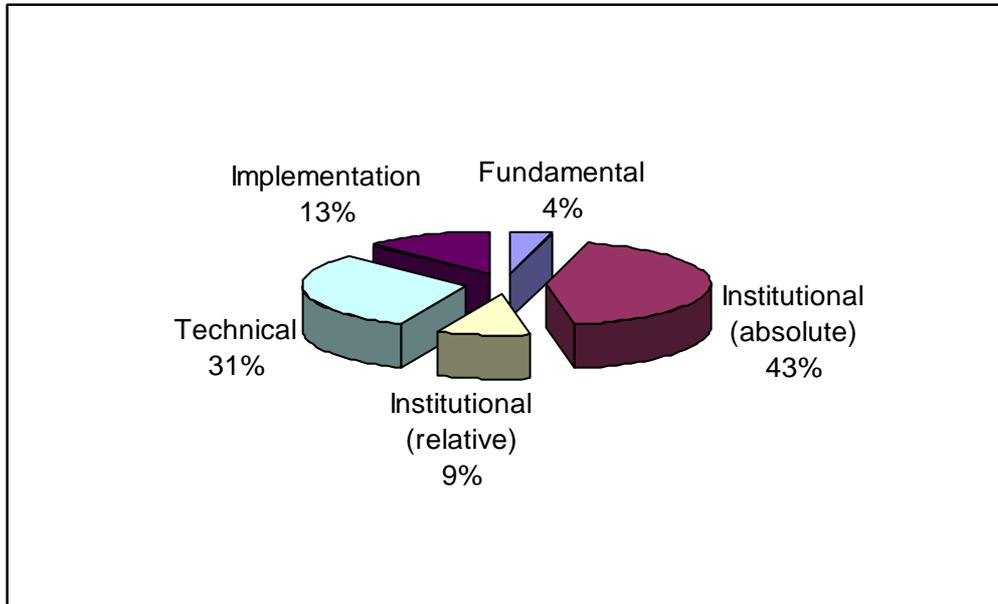
83 European decision makers surveyed

A total of 83 persons responded to the questionnaire, nearly $\frac{2}{3}$ of these representing the national (state) level, about $\frac{1}{3}$ the local/regional level, and some few representing the common EU decision-making level. Half of the respondents were leading their transportation or road safety department, while the others were

mostly middle managers and senior consultants/researchers. Nearly all of them were either making decisions on the priorities of road safety measures or developing methodologies for road safety assessment. About $\frac{1}{3}$ based these priorities or methodologies on EAT. It seems reasonable to state that the sampled individuals are influential in road safety policy formulation and initial prioritisation and decision-making. Only a couple of those surveyed were politicians – involved in the final decision stage, the decision about eventual implementations. It should also be stressed that only 14% were economists – half of the sample were engineers and the rest represented other social sciences, law and planning.

The decision makers pointed primarily to institutional and technical barriers

Based on responses given to a question about the major reasons why CBA or CEA are not always performed for road safety measures, the larger share of stated reasons could be classified as institutional barriers – all together 56%. Most of these are *absolute* institutional barriers. Approximately $\frac{1}{3}$ of the reasons could be classified as technical (methodological) barriers – pointing primarily to the lack of knowledge of the impacts of measures, and, to a lesser extent, lack of monetary valuation of impacts. When we add the small share of *relative* institutional barriers – the lack of workable EAT know how (in the institution), the responses indicating relative barriers sum to nearly 40% (see figure below).



Source: TØI report 785/2005

Figure 1: Distribution of responses to direct question about main barriers to the use of efficiency assessment tools.

Differences between North and South

The clearest difference between Northern Europe and Southern/Central Europe relates to the absolute barriers. In Southern/Central countries there are stronger institutional barriers to the use of EAT in the very initial parts of the decision-making process, i.e., non-recommendation or obscured responsibility related to application of EAT, in addition to lack of resources/tools. In Northern countries the main absolute barriers materialise mostly at the stage between the institutional phase and the implementation phase (political opportunism and conflicts of interest).

The differences between the national and local/regional decision levels are less pronounced, except that political opportunism and conflicts of interest seem to constitute stronger barriers at the local/regional level. The responses indicate that the share of CBA, versus CEA, is lower at the local/regional level. And many respondents indicated that cost assessment at the local/regional level was applied together with purely qualitative judgments of the road safety measures.

There is a need for better knowledge about the effects of road safety measures and their valuation

Application of EAT presupposes knowledge of impacts of the measures that are to be assessed economically. A large part of the interviewees found such a technical barrier to the use of EAT. Where such impact knowledge is lacking, on a global scale or in a specific country (or needs to be adapted to a specific locality), it constitutes a (relative) barrier that road safety researchers can contribute to reduce through their work and cooperation. Responses to other questions in the survey, yielding what we may term *underlying* indications of barriers, support and detail some of the main indications, especially that there is still a large room for improved knowledge about the impacts of road safety measures.

Also the economic methodology (valuation) needs to be enhanced and standardised, according to the respondents' indications of unsuitability, uncertainty and unreliability related to impacts and to the methodology *per se*. A wide range of monetary approaches to transport and road safety assessment are currently applied. While specific value components may very well differ between European countries, due to differences in income or preferences, the methodology as such should not. It is important to clarify what economics is and what it is not. Such recognition will basically help standardise the procedures across Europe. Economics is limited to monetised values, but the extent of such valuations is far broader than what the layman would believe. Some responses could indicate that road safety decision makers lack important knowledge of economic theory, e.g., the normative principles that economic values are based on individual preferences and willingness to pay, hence that monetary values should be applied also to public goods.

The timing of efficiency analysis in the decision making process and the presentation of results may matter

An interesting feature is also the possible (relative) barrier related to the institutional timing of EAT in the decision-making process. We point out that there are two opposite considerations about timing. EAT should not be initiated until a broad survey of potentially effective road safety measures has been performed, so as to ensure that every relevant measure is included. However, what has been indicated by the majority of respondents is the second consideration – that EAT should be initiated as early as possible so as to carry more weight in the final stages of the decision-making. This institutional barrier should be regarded in connection with another (relative) barrier at the implementation phase – the presentation of the efficiency assessment results.

Half of the respondents found it possible (or sure) that results from CBA would be given more weight in prioritising if presented in another manner. Improved marketing/pedagogy was proposed, emphasising especially the number of lives saved by means of profitable measures. Although the CBA result, the benefit-cost ratio, does not display the lives and limbs saved, it is important to clarify that the monetary benefits of road safety measures actually mirror an expected reduction of grief and pain. *Marketing* of efficiency analysis results is not a specific task of road safety researchers (or transport/safety economists), but *dissemination* of research results is such a task. It is important to present the results in a comprehensible way for both laymen and politicians. This will imply both popularisation and plain-dealing. There is no reason to hide the fact that economic efficiency is measured in €. Yet, if a road safety measure or a policy is assessed as economically efficient, it is so precisely because it saves lives and limbs at a reasonable cost.

More efficiency analysis does not imply technocratic institutions

It is important to point out that the institutional barriers, generally deemed to be absolute and more predominant in southern/central countries, may after all not be that absolute. Analogous to other standardisation of product and procedures in the EU one may also imagine a standardisation of the foundation for decision-making of road safety policy in a direction towards more routine use of EAT in road safety policy. Notwithstanding this, the experience in the Northern countries is that use of EAT does not necessarily imply implementation of economically efficient policies.

Aiming at reducing or removing barriers to the use of EAT in road safety policy does not imply a technocratic position that CBA and CEA should dictate public policy (with the politicians as superfluous masters of ceremonies executing the rubber-stamping of the irrefutable truths from the economist clergy). In democratic systems politicians are elected to represent peoples' will, thus being entitled either to follow the priority result from EAT or to come up with something else. Moreover, the alternative to the representative rule would not in

any case be CBA, giving a monetary expression of individuals'/households' will (with "one € one vote"), but referenda – "one man one vote".

The raison d'être of ROSEBUD

The raison d'être of ROSEBUD was a recognition of too little use of EAT in European road safety policy. This comprised some implicit supposition. It was expected that if decision-makers knew more about EAT, about how these methods can/should be applied and about what policy recommendations these analyses yield, the decision-makers would also become more positive towards this approach. This supposition is at least partly supported by the survey results, that indicated both lack of knowledge about EAT and about economics in general – a lack of knowledge that also may be a foundation for a more fundamental barrier. E.g., a substantial part of the decision makers did *not* believe that implementing safety measures based on economic efficiency would reduce the numbers of fatalities and injuries, which is contrary to research results.

This is probably due to a mistaken view of economics as something that is limited to business, budgeting and macro numbers. Such a narrow view of economics makes it difficult to imagine that costly road safety measures could be economically profitable. Even if individuals/households actually trade-off both risk, health and environment against market goods (money) and time use, also through their transport choices, most of them seemingly believe that this has nothing to do with "real economics". Economists regard this differently. They generally recognise that the value of (benefit from) preventing fatalities and injuries, based in large part on individual willingness to pay to reduce risk, will carry such a heavy weight as to render several (but not all) new road safety measures economically efficient. There are not only moral arguments for increased efforts on road safety, but also economic arguments. So far decision-makers have probably been reflecting on the moral problem of the traffic death toll rather than on the economic problem. And then, at the end of the day, they have too often yielded to other transport concerns that are less economically profitable than improved road safety.