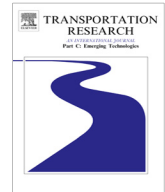




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Inter-national benchmarking of road safety: State of the art



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ABSTRACT

Road traffic injuries and fatalities have nowadays been recognized as one of the most important public health issues that requires concerted efforts for effective and sustainable prevention. Given the fact that more and more countries are taking steps to improve their road safety situation, there is a growing need for these countries to work together more closely, because there are quite a number of common problems that can be identified in close cooperation, and improvement can be expected by learning lessons from existing best practices in other countries. As a consequence, comparison between a range of countries in terms of their road safety performance and development or – using state-of-the-art terminology – inter-national benchmarking of road safety, is currently widely advocated by most countries and international bodies as an emerging methodology for road safety improvement. However, performing a successful road safety benchmarking practice is by no means easy. Challenges exist from the definition of benchmarking framework at the very beginning to the final decisions in terms of identification of best practices and establishment of a continuous process of mutual learning. In this paper, the theoretical background of the benchmarking approach is introduced, and a specific benchmarking cycle for road safety is established which consists of five core activities. Moreover, as a valuable benchmarking tool, the development of a road safety index is highlighted, and some theoretical and practical issues on this subject are discussed.

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1. Introduction

The transport sector is an important component of today's world economy directly impacting on the development of our present society and the welfare of human beings. As one of the most fast growing sectors in the post-crisis socioeconomic context, transport systems are expected to experience an accelerated expansion in the next decades due to ever increasing population, rapid motorization, and rising incomes. Projections indicate that by the year 2050, there will be around 3 to 4 times as much global passenger mobility as at the beginning of this new millennium and 2.5 to 3.5 as much freight activity ([Organization for Economic Cooperation and Development/International Transport Forum, 2011](#)). However, rapid growth of traffic volume, especially motorized road mobility, has also resulted in continuously increasing safety problems. Road safety is important not only because of the lost travel time or cost of property damage, but mainly because of the loss of human life and serious injuries sustained. Since the first death involving a motor vehicle which is said to have taken place in London in 1896, road traffic crashes have claimed an estimated 40 million lives up to now, and many more suffer non-fatal injuries

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(World Road Association, 2003). In most regions of the world, especially for those low- and middle-income countries, this hidden epidemic is still spreading. As for the high-income countries, despite the fact that the number of road fatalities keeps decreasing over the last several decades, they also suffer from the road crash problem. The huge costs in health services and the added burden on public finances due to road traffic injuries and fatalities have also become increasingly socially unacceptable and difficult to justify to citizens.

On the other hand, the road traffic crashes and consequent injuries and fatalities, traditionally regarded as random, unavoidable ‘accidents’, have been more and more recognized as a preventable public health problem due to a better understanding of the nature of crashes over the past decades. As a result of this shift in perception, road traffic crashes and their health implications have demanded the attention of decision-makers all over the world and safety policy has been firmly placed in the public health arena (Peden et al., 2002). Under these circumstances, a large number of road safety strategies and programmes have been launched and put into effect at either a regional, national, or even global level. For instance, the United Nations proclaimed the period 2011 to 2020 as the ‘Decade of Action for Road Safety’ in May 2011. International cooperation for making road safety a priority is advocated with the purpose of 50% reduction in road fatalities and injuries on the predicted global death toll by 2020 (http://www.who.int/roadsafety/decade_of_action/en/).

Although more and more countries are taking steps to improve their road safety situation, they work in most cases on their own to tackle their specific road safety problems (e.g., Aron et al., 2013; Dijkstra, 2013). This is right to a large extent because the socioeconomic conditions, the motorization levels, and the road safety experiences are different from country to country and from region to region. However, for those countries within the same region or that have already passed through similar stages of challenges and development, there are quite a number of common problems that can be identified in a close cooperation, and improvement can be expected by learning lessons from existing best practices in other countries (even if the final solutions or priorities could be different from one country to another in accordance with their own safety characteristics). Consequently, comparison between a range of countries in terms of their road safety performance and development or – using state-of-the-art terminology – *inter-national benchmarking of road safety*, is currently widely encouraged and advocated by governments, donors, practitioners, planners, and researchers for the purpose of better understanding each country’s relative safety situation, and moreover, trying to learn from those better-performing countries in terms of setting practical targets, designing effective strategies, determining intervention priorities, monitoring programme effectiveness, and ultimately, achieving its own safety objectives.

However, performing a successful road safety benchmarking practice is by no means easy. Challenges exist from the definition of benchmarking framework at the very beginning to the final decisions in terms of identification of best practices and establishment of a continuous process of mutual learning. In this paper, based on a brief review of the concept of benchmarking in Section 2, a specific benchmarking cycle for road safety is established in Section 3. Each of the core activities in the cycle is elaborated subsequently. Furthermore, as a valuable benchmarking tool, the development of a road safety index is highlighted in Section 4. A number of recent studies on this subject are presented and some theoretical and practical issues are discussed. The paper ends with concluding remarks in Section 5.

2. The concept of benchmarking

The term *benchmarking*, originally derived from the work of cobblers who would place someone’s foot on a ‘bench’ and mark it out to make the pattern for the shoes, was firstly invented in the private sector as a tool for improving various operations by establishing a point of reference by which it is possible to judge quality, value or other important factors. Now, the concept of benchmarking is further extended and widely adopted in both profit and non-profit organizations. One of the operational definitions of benchmarking is:

“the process of continuously measuring and comparing ones business processes against comparable processes in leading organizations to obtain information that will help the organization identify and implement improvements.” (American Productivity and Quality Center, 1993)

First and foremost, benchmarking is a systematic comparison of the process and performance of one production entity against other entities, which could be countries, organizations, firms, industries, divisions, projects, or individuals. Moreover, the essence of benchmarking is the process of identifying the highest standard of excellence for products, services, or processes, and then making the improvements necessary to reach those standards – commonly known as ‘best practice’ (Bhutta and Huq, 1999). In addition, benchmarking does not represent the end of the process, but is an ongoing diagnostic management tool focused on learning, collaboration and leadership to achieve continuous improvement in the organization over time (Garlick and Pryor, 2004).

In practice, benchmarking is a versatile tool that can be applied in a variety of ways to meet a range of requirements for improvement. It can firstly be used to make intra-organizational comparisons, which involves benchmarking against internal operations or standards, usually in a multidivision or multinational enterprise. Benchmarking can also be – and most frequently is – used to make inter-organizational comparisons. It deals with benchmarking against other entities in the same context, no matter whether they are direct competitors or not. In addition, benchmarking can also be used to make longitudinal comparisons, where the performance of one or more production entities in different time periods is compared.

Since the first successful application implemented by Xerox Corporation in the late 1970s, benchmarking quickly became one of the fastest growing techniques for quality and performance improvement and has been receiving significant attention

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