Selecting KPIs on enforcement of traffic regulations

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Introduction

Enforcement of traffic regulations is an effective intervention to achieve a substantial improvement in road safety in a relatively short period of time, especially in relation to key dangerous behaviours.

Key Performance Indicators (KPIs) may concern any of the steps of the penal procedure that constitutes enforcement of traffic regulations. However, enforcement methods and procedures vary widely among countries. Subsequently, available data on relevant procedures and results may also vary. Key road safety problems in each country should be considered and focus should be on KPIs related to particular road safety offences, groups of road users or types of roads that relate to these key problems. The most appropriate and useful KPI is calculated based on applicability and availability of data as well as on the particular needs in the respective country. This paper describes the framework for the selection of the appropriate KPIs related to the enforcement of traffic regulations.

Research methodology

The intensification of road safety enforcement is proven to be the primary measure worldwide which can lead to an immediate improvement of the behaviour of road users and to the subsequent significant reduction of road crashes. In order to identify meaningful and useful enforcement related KPIs, a literature review of the effect of different enforcement aspects on key road safety issues was conducted and a list of suggested KPIs on enforcement of traffic regulations was formed.

Methods and procedures for the enforcement of traffic regulations as well as traffic regulations themselves vary widely among the Member States. Subsequently available data on relevant procedures and results may be substantially different in different countries. Thus, aspects of the calculation of the identified KPIs were also discussed.

Results

The following alternative options for a KPI enforcement of traffic regulations have been identified in the relevant international literature and relate to different aspects of enforcement:

- *Option 1: Number of police controls per infringement
  (per population)*
- *Option 2: Number of tickets per infringement
  (per population)*
- *Option 3: Number of red light cameras on the urban network
  (per km of network OR per population OR per population/km^2)*
- *Option 4: Number of fixed speed enforcement cameras
  (per km of rural and urban network OR per population OR per population/km^2)*

For all suggested KPIs additional measurement units e.g. per km of network, per population, per population/km^2, per traffic volume etc may be used based on the available data and particular conditions in each country.

In general, data availability per option differs. Option 1 is widely used, though not equally for all road infringements. Data on police controls for speeding, seat belt and helmet use as well as drink-driving are available in many countries worldwide. Then again, police controls for distracted driving are focussed on driving while using a mobile phone and all other distraction factors are less examined. Data on red light running controls are also limited.

Similarly, in most countries, the number of tickets (Option 2) are available for specific infringements. In this case too, data are limited concerning distraction factors other than driving while using a mobile phone and red light running. Concerning Option 3, apart from official sources, data on red light cameras are also available in open databases which are regularly updated by anonymous users. Similarly, for Option 4, data on the number of speed cameras are available from both official and non-official sources, covering both mobile speed cameras used by the police and the fixed speed cameras throughout the road infrastructure.

Data needed for the proposed KPIs are freely available either directly by the Traffic Police or by other public authorities (e.g. competent Ministry, statistical authority etc). In case the needed data are not freely available, they should be requested by the competent Authority using a comprehensive questionnaire to cover all aspects of the selected KPI.

Especially, for Option 3 and Option 4, data from official sources should be looked for. Data from non-official sources should be considered only in case of total lack of an official response to the relevant request and should be treated as approximate or indicative information.

Discussion and conclusions

Each of the proposed KPIs relates to a different road safety problem or is differently associated to crash risk. Option 1 provides a good measurement of the effort dedicated to enforcement generally and to specific infringements in particular. In combination with an analysis of key road safety problems, it can be very useful for the identification of enforcement gaps. Option 2 reflects the effectiveness of enforcement activities in terms of identifying violators. In combination with Option 1, it may provide useful insight on the effectiveness of enforcement as a preventive measure. Option 3 is a measure of the level of enforcement at sites where traffic violations might be frequent and indicates potential gaps. Option 4 is related to speeding which

has been highlighted as one of the key road safety issues worldwide. Therefore, the importance of this indicator is undoubtable.

Options 1 and 2 require a well organised enforcement system in which all information about all stages of enforcement is properly recorded and followed and relevant data is accessible. Options 3 and 4 may be developed using information from various sources to fill in possible gaps in official information. Thus, they are perhaps easier to develop. Still, trustworthiness of non-official information sources must be checked.

In conclusion, countries should choose which KPI(s) to calculate based on the most crucial road safety problems that are facing and the targets set in the relevant national policies.

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