



Effective, cheap and widely accepted? Balancing impact, costs and public support for road safety measures for cyclists

Stijn Daniels^{1,2*}, Greet Kayaert¹, Eef Delhaye¹
*presenter, stijn.daniels@tmleuven.be

¹Transport & Mobility Leuven, Belgium

²KU Leuven, Institute for Mobility, Belgium

Introduction

An ideal road safety measure ranks well on three criteria: 1) it is effective, 2) it is cheap and 3) it gets a large public support.

In this study, we have explored how five typical measures to improve road safety for bicyclists rank on these criteria. The five measures selected are: zone 30 in built-up areas, traffic circulation plans, speed limit reduction from 70 to 50 km/h on roads without separate cycle paths, conflict-free traffic light control and construction of separate cycle paths. The final objective is to demonstrate how choice problems between objectives can be present in real-world policy decisions.

Research methodology

We evaluated each measure based on **three dimensions**: the effect on road safety, the cost of the measure and the public acceptance of the measure.

The **effects** presented are best estimates of effects as they have been revealed by previous studies, preferably through meta-analyses. We collected information on the **costs** of these measures through desktop research and through direct contacts with public authorities. We measured **public support** for each measure through an online questionnaire for citizens that was distributed through social media channels of Flemish cities and municipalities in autumn 2023. 3873 complete responses were collected. This questionnaire asked citizens about their travel behaviour (bicycle use and use of person cars) and their rating on five criteria for each of the measures presented. We then investigated how well each of the 5 proposed measures scored according to the three different dimensions and the implications for public policy.

Results

Figure 1 below summarises the costs, impacts and the public support for each of the measures. Support (x-axis) is the percentage of respondents stating they 'totally agree' or 'fairly agree' with the statement "This is a good measure". Effect (y-axis) of the measure is the average reduction rate found in the scientific literature. The cost is represented by the size of the coin symbol.

The measures are applied in practice at different scales and in different environments; they are therefore not fully comparable. We assume an imaginary unit of 1 area = 5 km road = 5 intersections.

The figure shows that among the selected measures, the more expensive ones are associated with greater impacts. The construction of separate cycle paths is at the same time the most expensive and the most effective measure. It also gets the highest support. But even for some



of the less expensive measures, there is still a pronounced effect. Reducing the permitted speed from 70 to 50 km/h on roads where currently no good cycling facilities are present, is an example of a cheap measure that still has a strong effect.

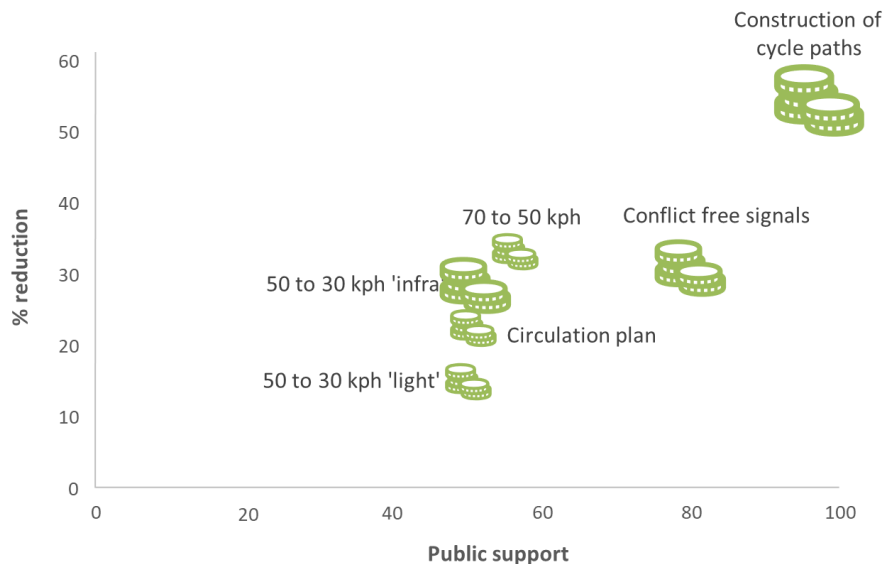


Figure 2 - Impact versus cost and public support for 5 road safety measures for cyclists (with 2 variants for the 30 zone).

Discussion and conclusions

The aim of this study was to show how some possible road safety measures score on three dimensions that together determine their ‘amenability to treatment’, in other words: how well they are attractive to public policy. The measures themselves were chosen arbitrarily, and they serve mainly to illustrate the concept. Most of these measures are already applied in practice to some extent, so most questionnaire respondents should be familiar with these measures in one way or another.

We conclude that there is likely to be some trade-off between costs, effects and public support for measures. Few measures will at the same time be effective, cheap and welcomed by all. If they were, they would probably have already been taken. In that sense, there is unlikely to be much low-hanging fruit left in societies where this problem has been the subject of public debate for decades. Improving road safety is therefore likely to require clear policy choices.
