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Sustainable, Participatory and Practical: the NISTO evaluation framework for urban and regional mobility projects

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Abstract

This paper proposes the NISTO evaluation framework to appraise small-scale mobility projects. The framework consists of three evaluation tools and a set of evaluation criteria and indicators that are linked to the tools. The appraisal of the sustainability of project alternatives is carried out by multi-criteria analysis using 16 criteria grouped under the three pillars of sustainability that were selected by an in-depth analysis of current practice in North-West Europe. The performance of these criteria is measured through a set of core and optional indicators. Stakeholders are involved in the appraisal through the multi-actor multi-criteria analysis (MAMCA), which allows the consideration of conflicting stakeholder objectives and helps to identify synergies and disagreement between different stakeholder groups. The methodology is based on assessing the evaluation criteria of the different stakeholder groups. Target monitoring is carried out by setting SMART (specific, measurable, ambitious and accepted, realistic and time-bound) targets which are forecast in an ex-ante appraisal or monitored during implementation. We demonstrate the framework through the evaluation of a combined tourist travel card (MeineCardPlus) in the Nordhessen region of Germany, which provides free use of public transport and free entry to leisure facilities in and around Kassel. By considering the results of the evaluation tools side-by-side, it is possible to choose an alternative that is supported by the majority of stakeholders, performs well in the sustainability assessment and realistic in terms of policy targets.

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1. Introduction

Several methods for the evaluation of mobility projects are used by transport planners and authorities across Europe. The existing tools demonstrate a wide variety in approaches, coverage of transport modes, comprehensiveness, ease-of-use and flexibility. Our review of current practice revealed that small-scale mobility projects that aim to change travel behaviour are often not or only partially appraised due to the lack of simple evaluation tools or budgetary constraints (Donovan et al., 2014). A full-scale cost-benefit analysis, for instance, is often not an option due to the cost and time required.

In the framework of the NISTO project (New Integrated Smart Transport Options), which is co-financed by the Interreg IVB programme, a new easy-to-use, flexible and integrated evaluation toolkit has been developed specifically for small-scale mobility projects to overcome these deficiencies.

The NISTO evaluation framework is based on the assessment of sustainability of projects keeping a balance between the three pillars of sustainability (economy, society, environment), a close integration of stakeholders into the evaluation process and monitoring of targets to establish a link to policy. In addition, it provides an easy-to-use online tool for practitioners.

This paper aims to demonstrate how project alternatives can be evaluated with the NISTO framework. We evaluated alternatives to promote sustainable travel of tourists through a tourist travel card in the Nordhessen region of Germany. In section 2, we introduce the NISTO evaluation framework. In section 3, we illustrate how the three evaluation modules work with results from the evaluation of the above-mentioned demonstration project. Then we conclude the paper with recommendations for further research.

2. The NISTO evaluation framework

The NISTO evaluation framework consists of two main elements (figure 1). On the one hand, there is a set of evaluation tools to assess projects based on the objectives of sustainable urban and regional transport. On the other hand, there is a set of evaluation criteria and indicators that are used by the evaluation tools.

The framework offers three evaluation tools which can be used before and after project implementation: the assessment of sustainability by multi-criteria analysis (MCA), the assessment of stakeholder preferences by multi-actor, multi-criteria analysis (MAMCA) and the assessment of policy success by target monitoring (Donovan et al., 2014). MCA rather than cost-benefit analysis (CBA) has been selected for the evaluation of sustainability. It is well suited for a multi-dimensional evaluation of several project alternatives as it can consider conflictual, incommensurable and uncertain effects of decision making (Martinez-Alier et al., 1998; Vincke, 1992). In addition, MCA is more suitable if evaluation criteria are considered that are not possible to monetize (e.g. socio-political acceptance, security, livability) and the availability of quantitative data for the evaluation is limited.

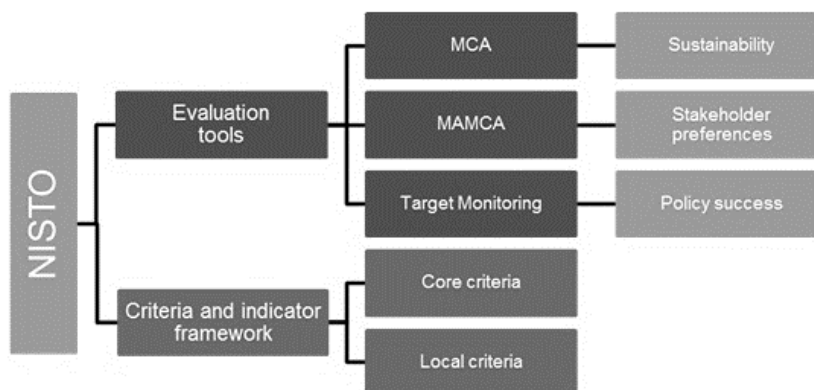


Fig. 1. Overview of the NISTO framework which consists two main elements: three evaluation tools and a set of evaluation criteria and indicators.

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