A new composite decision support framework for strategic and sustainable transport appraisals

This paper concerns the development of a new decision support framework for the appraisal of transport infrastructure projects. In such appraisals there will often be a need for including both conventional transport impacts as well as criteria of a more strategic and/or sustainable character. The proposed framework is based on the use of cost-benefit analysis featuring feasibility risk assessment in combination with multi-criteria decision analysis and is supported by the concept of decision conferencing. The framework is applied for a transport related case study dealing with the complex decision problem of determining the most attractive alternative for a new fixed link between Denmark and Sweden – the so-called HH-connection. Applying the framework to the case study made it possible to address the decision problem from an economic, a strategic, and a sustainable point of view simultaneously. The outcome of the case study demonstrates the decision making framework as a valuable decision support system (DSS), and it is concluded that appraisals of transport projects can be effectively supported by the use of the DSS. Finally, perspectives of the future modelling work are given.

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