

Summary

Social benefit of digital transport infrastructure

The value of increased use and sharing of data

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Digitization of the transportation sector happens fast these days and generates extensive amounts of data. Improving availability of these data are considered to hold great potential for development of the transport system of the future. However, there is very limited experience with formalized appraisal of digital projects' economic viability. This report looks into how current economic appraisal methods for transport infrastructure projects should and could be developed to be applicable for valuating impacts of improved data and of better digital infrastructure. As for physical infrastructure, the foundation for economic appraisal of digital investments should be quantitative comparison of actual benefits and costs of the digital projects.

The continuing digitization of the transportation sector produces an exponentially growing amount of data. Data which are not exploited to its full potential today with regard to improving the transport system. Decisions to invest in digital projects is challenged by the fact that the benefit side is difficult to quantify. When the value of a digital infrastructure project is only described qualitatively, and not assessed in quantitative terms, it is often difficult to argue convincingly for the economic viability of the project. For physical projects there is a long tradition for cost-benefit analyses based on well-established methods for evaluating the effects in monetary terms.

However, the need for theoretical method development is not the main challenge as it is fully feasible to apply existing economic methods developed for cost-benefit analysis of physical infrastructure projects. Rather, the approach should be to find ways to consistently quantify the benefits in the components used for physical projects, but this is quite difficult in practice. The way forward toward standardized methods for quantifying and assessing the social benefit of digital investments in the transport system could benefit from making use of concrete case studies of various complexity as a starting point.

The social benefits of data platforms is particularly challenging to put value on. General data platforms joining data across organisations with the purpose of third party availability can have a high value for society, as the example from Transport for London illustrates. But the value is realized via the ensuing user-oriented projects which rely on exploiting the platform data. Further, some of these projects are not known in advance as the ideas sometimes only emerge after data availability makes them possible. In the case of data platforms it can therefore be a more feasible approach to base appraisals on ex post evaluations from establishing similar platforms from other sectors or other countries.

A strengthened data basis can also have great value in strategic investment planning across the transportation sector. A better foundation for political decisions can result in a more efficient resource allocation by having a positive impact on the prioritization of the portfolio of possible investment projects. Provided that the better data basis is actually utilized to choose a portfolio with higher economic rate of return the value for society can potentially be quite high because of the size of the total national transportation investments and because the average rate of return of the current Norwegian National Transport Plan is rather low.