

# Article

## Transport Infrastructure and Regional Development: A Survey of Literature on Wider Economic and Spatial Impacts

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**Abstract:** The main purpose of the paper is to provide an overview of methods used to research the relationship between transport infrastructure investments and regional development, with a focus on wider impacts both in the traditional economic context (wider economic impacts or WEIs) and—which is a methodological novelty proposed by this paper—in the spatial context (wider spatial impacts or WSIs). In terms of methodology, research may be conducted using the following methods: cost-benefit analysis (CBA) and multi-criteria analysis (MCA), accessibility and potential models, econometric production function estimates, regional modelling, trade and input-output (IO) modelling, Land Use-Transport Interaction (LUTI) or spatial computable general equilibrium (SCGE) models. In the European Union, approaches based on cost-benefit analysis (CBA), or possibly multi-criteria analysis (MCA), continue to prevail. Notwithstanding the availability of a wide range of methods for quantifying socio-economic impacts, the European Union recommends that wider economic impacts at the regional and national levels be assessed by means of qualitative approaches. This being the case, it is recommendable for the European Commission to take broad-ranging action towards ensuring that the effects of transport infrastructure investments are assessed by means of a broader range of approaches.

**Keywords:** CBA; MCA; potential accessibility; econometric estimations; input-output; general equilibrium models; transport infrastructure; European Union

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### 1. Introduction

Transport infrastructure investments can have a considerable but varied impact on regional development. Regional development and economic growth theories emphasise the role of transport links in generating income (balanced and unbalanced growth strategies) or in its interregional redistribution (polarisation theories and new economic geography theories) and identify infrastructure investments as a potential source of ‘crowding out’ private investments (classical theories) or as public expenditure necessary to stimulate economic growth (the Keynesian theory), thus enabling ‘externalities’ to be achieved (the new growth theory).

The complexity of relationships between infrastructure expansion and regional development and of the transmission of effects requires a separate overview of literary sources. The comprehensive overviews of studies that were produced at the time when research into these topics was ‘booming’, such as [1,2], do not provide an insight into the most recent research efforts/trends/methods, i.e., those from the last two decades. In addition, to the best of the authors’ knowledge, there are no new comprehensive literature surveys which encompass the broad range of methods that look into what is referred to as wider economic impacts (WEIs), which cannot be captured by conventional cost-benefit analysis (CBA). The exceptions include publications by Legaspi et al. [3] and Rothengatter [4], which, however, focus on approaches to measuring WEIs based on GDP

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