PROJECT

TRANSECON

Urban TRANSport and local Socio-ECONomic development

**Funding:** European (5th RTD Framework Programme)
**Duration:** Jul 2001 - Dec 2003
**Status:** Complete with results

**Background & policy context:**

Urban transport policies and investments are implemented on the basis of urban transport planning and management and therefore their evaluation is usually linked to performance in terms of transport operations (e.g. travel-speed, time-savings, travel-safety, investments and operation costs) and environmental aspects. However, urban transport policies and investments may have wider socio-economic impacts and effects not only along the corridor or within the areas that are designed to serve, but throughout the city-region and through time. Therefore it is necessary to carry out research in evaluating these socio-economic impacts and effects stemming from urban transport policies and investments which are not covered by a traditional cost-benefit analysis.

The main expected technical achievements of this research was to provide evidence regarding the social and economic impacts and effects of urban transport investments and policies (so called 'indirect effects and impacts' as indirect network effects), in order to inform city authorities in their transport and related policy development and infrastructure planning, as well as to support relevant EU policies, with the emphasis put on long term effects.

**Objectives:**

1. To review and analyse available evidence and experiences regarding socio-economic impacts of urban transport policies and investments in Europe and the USA.
2. To employ several case studies of a range of European cities that have implemented relevant urban transport policies and investments, with adequate before and after data, stakeholder interviews, using a consistent framework for harmonisation and comparability of the results.
3. To assess infrastructure and policy impacts based on the selected case studies.
4. To assess employment urban re-generation, economic development effects stemming from urban transport policies and investments and to examine the supporting policy and organisation frameworks, based on the selected case studies.
5. To overtake comprehensive overall socio-economic evaluation and synthesis of all effects, based on the selected case studies.
6. To disseminate the results to relevant fora, including city authorities related to the case studies city and transport associations, and to exploit the results in future relevant initiatives and action at local, national and EU level.
7. The main expected technical achievements of the research is to provide definitive evidence re

**Methodology:**

I) REGIONAL ECONOMIC EFFECT DURING CONSTRUCTION

To analyse these indirect effects of each infrastructure project on employment, GDP and regional income, an econometric model is used which simulates 16 different sectors of the regional economy. A number of exogenous variables describing global and national economic conditions and demographic factors, together with the project-specific data on investment are used. These case study specific inputs consisted of capital investment in various economic sectors (e.g. construction, mechanical and electrical engineering, metals) during each year of the project planning and construction phases. The model focuses on key economic variables such as production, investment, employment and income, and estimates net production value, employment and wages for each of the 16 economic sectors considered, for the region in which the investment takes place.

II) CHANGES WITHIN THE TRANSPORT SYSTEM
For assessing the infrastructure effect, the methodology used is based on defined zones and the comparison before implementation, after implementation and without implementation (reference scenario) of each measure. The calculation of the effects of the investment of the case studies are defined by the differences between the scenario with investment and the reference scenario. For one indicator, the impact of the project corresponds to the difference between the value of the indicators for scenario with the project and the value of the same indicator for reference scenario.

III) URBAN REGENERATION
To compare effects on the local economy between case studies, a series of ‘hard’ indicators were investigated, such as house prices, commercial rents, land-use figures and investment in new construction, rebuilding and public amenities. To capture more perceptual aspects of urban regeneration, ‘soft’ data were collected as part of a semi-structured interview. In this, respondents were asked about a series of aspects of urban regeneration, some of these being rated on a five-point scale to provide indicators of, for example, each zones attractiveness.

IV) ECONOMIC AND SPATIAL DEVELOPMENT
For each case study a so called shift-share analysis was carried out, which is based on a time series of data of a number of variables, at a highly disaggregated level. For each variable, a series of growth factors were estimated which characterised the tendency of each.

V) POLICY IMPACTS
The interview a

Parent Programmes:
FP5-GROWTH KA2 - Sustainable Mobility and Intermodality

Institute type: Public institution
Institute name: European Commission, Directorate-General for Energy and Transport (DG TREN)
Funding type: Public (EU)

Partners:
Austria:
University Linz, department of economics (ULINZ)

Belgium:
Stratec (STRATEC)

Finland:
Viatek (VIATEK)

France:
Laboratoire d'Economie des Transports, Lyon, Université Lumière Lyon 2 (LET ULL2); Laboratoire d'Economie des Transports, Centre National de la Recherche Scientifique (LET-CNRS); ISIS

Germany:
Steinbeis Transfer Centre Applied System Analysis (STASA)

Greece:
University THESSALY (UTH)

Slovakia:
PRI.DOS - Planning Bureau, Bratislava - V. (PRIDOS)

Spain:
Universidad Politecnica de Madrid - Transport Department (UPM); Consorcio Regional de Transportes de Madrid (CRTM)

Switzerland:
Synergo (SYNERGO)

The Netherlands:
Transportation Planning and Traffic Engineering Section, Delft University of Technology (TUD)

United Kingdom:
Oscar Faber Group (OF); University of Newcastle upon Tyne, Transport Operations Research Group (UNEW)

Organisation: Institute for Transport Studies - University for Bodenkultur (ITS-BOKU)
Key Results:

In general, the project hypothesis of expected third party effects of large scale infrastructure investments is confirmed as much as there is a clear:

- stimulation of socio-economic development in areas of improved accessibility,
- stimulation of re-urbanisation dependent on the potential development,
- potential of decentralisation of housing (spatial diffusion) and centralisation of shopping.

It can be said that the methodological approach was successful, but there are some limitations of the interpretation as the data availability and data quality was limited.

Efficiency of Transport Infrastructure Projects

The efficiency of the investigated transport infrastructure projects shows great variance, revealing major differences in efficiency depending on the relevant public transport category (underground, suburban railway and tram). The following conclusions can be made in general:

- When decision of traffic policy are taken, greater priority should be given to the efficiency of investments. It is overriding importance that cost/benefit ratio is carefully weighted and that indirect effects are also considered.
- As a general rule, investments in surface public transport with priority route are more efficient than investments in underground public transport.
- Investment in light rail systems are more cost efficient than investments in conventional railways.
- Improvements of existing rail routes, respectively the reuse of existing routes (for instance suburban railways) are more efficient than newly built routes.
- Investments in bicycle traffic with inter-modal interfaces (e.g. bike and ride) are highly efficient.

Regional economic effect

- The direct multiplier effect of transport infrastructure investment costs (public transport and bicycle) for the regional gross domestic product is 2.2 on average (range 1.9 - 2.5), and for the regional income 1.4 on average (range 1.2 - 1.6).
- The multiplier effect of total investment costs (including follow up investments) for the regional gross domestic product is up to 6 for public transport investments.
- The additional employment effect of infrastructure investment per Mio. € is between 25 - 32 persons additionally employed per year.
- The size of additional employ

Policy implications

In order to maximise the social-economic benefit of a large scale infrastructure investment, factors of success are: o Existence of a competent regional authority, which has the vision and power for carrying forward the project (often a person with a strong personality - so-called ‘project champion’) is the driving force behind a successful project,

- Existence of a comprehensive transport policy, some times stimulated by a huge transport problem or clear and convincing transport objectives to follow,
- Existence of a consistent program of measures: promotion of environmental friendly modes, supporting intermodality (bike-and-ride, park-and-ride), car restrictions, parking management, capacity reduction, traffic calming, marketing, etc.,
- Intensive co-operation between transport authorities, city authorities, land-use authorities, developers, private businesses and developers; an appropriate organisational framework is supporting such co-operation,
- Co-operation with other transport operators (from the users’ point of view public transport must be an integrated mobility service system), again an organisational framework can support such co-operation,
- Early and well organized consultation and participation with stakeholders: transport-users, motorists, local businesses, residents, institutional representatives, etc.,
- National and European funding may give long-term benefit in certain cases but should not be limited to a specific type of public transport mode. Funding should be dependent on the efficiency of an investment project.

Related Projects:
Documents:

- TRANSECON Final Report (Final report)

**STRIA Roadmaps:** Other specified  
**Transport mode:** Multimodal transport  
**Transport sectors:** Passenger transport, Freight transport  
**Transport policies:** Societal/Economic issues  
**Geo-spatial type:** Urban