THE WIDER SOCIAL & ECONOMIC IMPACTS OF HSR: SOME EVIDENCE FROM EUROPEAN COUNTRIES

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HSR implementation plays an important role in reshaping travel patterns and activities of people, consequently changing the ways cities develop.

Motivations to develop HSR systems for many countries are (Sussman, 2011):

... not only:

- Increasing transport infrastructure capacity
- Providing a “green” transport alternative

... but also:

- Promoting economic growth and regional development

The focus here is on the wider social & economic impacts of HSR through some European experiences.
- HSR and modal shift
- HSR and megalopolis formation
- HSR and tourism
- HSR and temporary offices
- HSR and house prices
- HSR and social exclusion

**Multi-disciplinary approach:** Engineering, Economics, Geography, Political Science, Sociology, Psychology
HSR and modal shift

RESEARCH ON HSR SINCE 2008

YEAR | N. USERS | %TRAIN | %CAR
---|---|---|---
2005 | 1460000 | 1460000 | - | 1212000 | 2672000 | 2758036 | 5430036 | 49 | 51
2006 | 708000 | 1127000 | 1835000 | 26 | 1241000 | 3076000 | 2753823 | 6025112 | 55 | 47
2007 | 1413000 | 609000 | 2022000 | 38 | 1265000 | 3287000 | 2738112 | 6025112 | 55 | 45

This shift is still today in favour of RAIL – Travel time now 1h before 2h

1977-1992: DIRETTISSIMA “Roma-Firenze” TODAY OPERATIONAL >1,400km
### Demand on HS trains

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<thead>
<tr>
<th>Demand on HS trains</th>
<th>Weekday</th>
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<tr>
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<td>N. Users</td>
<td>%</td>
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<td>Generated by new trips</td>
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### HSR and modal shift

#### O-D matrix between Naples and Rome (trips %)

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HSR and megalopolis formation

- HSR has the potential for megalopolis formation.

- **Defining megalopolis**: large agglomerations, megaregions, mega-cities, megaplexes, megapolitan regions, etc.

- Formation of **Megalopolis - an integrated economic urban complex** - created by fusion of multiple cities connected by high-speed transportation of 200-300 km/h (Sussman, 2011).

- A geographical area that shares a common labor market and a common market for household and business services” (Blum et al., 2009).

**POSITIVE IMPACTS:**

- Larger labor markets and commercial markets, thus greater productivity.

- “Better and more effective than cities alone in meeting the economic and social challenges” (Ross, 2009).
How one would know that a megalopolis emerges as a result of HSR deployment? (Sussman, 2011)

No precise parameters, but some considerations arise:

- Significant increases in one-day round trips between a pair or group of cities.
- Increase of generated induced demand.
- Induced demand for business trips.
- Increase in the number of daily commuters.
- Decrease in overnight hotel stays.

However, these parameters may be affected by factors other than HSR infrastructure, making the causal relationship difficult to verify.

Two case studies: RONA and MITO in Italy
HSR and megalopolis formation

RONA HSR CORRIDOR vs NABA NON HSR CORRIDOR

**ΔPOP**

- **POPULATION**
  - NABA
  - AVERAGE NABA
  - RONA
  - AVERAGE RONA

- **PRICE**
  - NABA
  - AVERAGE NABA
  - RONA
  - AVERAGE RONA

--- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ---
2002 | | | | | | | | | | | | | |
HSR and megalopolis formation

**MITO MEGALOPOLIS**
MITO 148,3km (Milano-TOrino)  
(Inauguration Dec 2009)

<table>
<thead>
<tr>
<th>HSR</th>
<th>TRAVEL TIME</th>
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<tr>
<td></td>
<td>BEFORE</td>
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<tr>
<td>MILANO-TORINO</td>
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The MITO MEGALOPOLIS is a high-speed rail network linking Milano and Torino, inaugurated in December 2009, significantly reducing travel times.
HSR and megalopolis formation

MITO HSR CORRIDOR vs GEMI NON HSR CORRIDOR

ΔPOP

ΔHOUSEPRICE
Other potential corridors to analyse are:

- Paris - Lyon in France
- Frankfurt - Cologne in Germany
- Madrid - Seville in Spain
- Corridors in Japan, China, Taiwan

- HSR links may be used to shape the direction of megalopolises within a new corridor through policies and decisions on operations (e.g., frequency, number of stops), inter-modal linkages, station locations, etc.

...therefore

- Megalopolises or megaregions present the need for planning on a new spatial scale with new boundaries and linkages. This implies institutional change.
The transportation system is an essential component of successful tourism development.

Existence of strong local potentialities. The presence of HSR is insufficient to develop tourism products (places) that are little known. (QUALITY OF PROMOTION OF THE DESTINATION).

The existence of local strategies. The effects of HSR are not automatic. (PROMOTION OF THE SERVICE ITSELF).

HSR CAN SUPPORT THE DEVELOPMENT OF URBAN TOURISM, PARTICULARLY FOR SHORT STAYS.

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**High-speed rail stimulates tourism**

2013 March 30 08:53  Shenzhen Daily

**PASSENGERS** with high-speed train tickets from Shenzhen or Guangzhou to Wuhan can enjoy discounts of 30-40 percent when visiting major tourism attractions in Central China’s Hubei Province in April, a promotion of Hubei tourism authority said Wednesday.

Economy-class tickets for high-speed trains from Shenzhen to Changsha, capital of Hunan Province, and Wuhan, capital of Hubei Province, on April 1, the opening day of Shenzhen-Wuhan High-Speed Rail, have sold out.

The high-speed rail, which cuts the Shenzhen-Wuhan journey to four hours, is expected to greatly stimulate tourism along the line.

“Hubei is now better connected with Pearl River Delta cities and we are inviting Guangdong travelers to enjoy sakura flowers in Wuhan University and visit our tourism attractions, such as Yellow Crane Tower, Three Gorges Dam and Donghu Lake,” Zhang Dahua, Hubei tourism chief, said at a promotion Wednesday.

Shenzhen travel agencies are also mulling package tours to Wuhan and Changsha.

According to Liu Ke, marketing manager of China Travel Service Shenzhen Co., the three-day trip to Wuhan costs 2,000 yuan (US$317.25).

It costs 540 yuan for an economy seat to Wuhan and 390 yuan to Changsha.

According to line operator Guangzhou Railway Group, there will be 20 pairs of trains a day between Shenzhen, Changsha and Wuhan and the intervals for departures at Shenzhen North Railway Station are between 30 minutes and 90 minutes, (Han Xinmin)

Investigating the impact of HSR on the choice of a tourist destination.

HSR has an impact on this choice in the case of Paris and Naples.

The French HSR system is “capillary” w.r.t. to the Italian one and it is considered an alternative transport mode.

For Madrid and Rome, an impact exists since HSR is chosen for visiting cities close to them.
HSR and temporary offices

HSR STATIONS: PIECES OF ARTWORK ….

HSR station at Reggio Emilia (Italy) by S. Calatrava

HSR station at Liège-Guillemin (Belgium) by S. Calatrava
HSR STATIONS: PIECES OF ARTWORK …. 

HSR station at Haramain (Saudi Arabia) by N. Foster

HSR station at Naples-Afragola (Italy) by Z. Hadid
BUT THEY ARE ALSO WORKPLACES…

.........Investments in HSR systems can:
✓ increase the number of business travellers
✓ Encourage the development of offices inside and around stations

What are temporary offices?

Fully-equipped offices to be rented by mobile workers for a given time-period.

“Mobile workers” are all the professionals who spend part of their time working in different places. They usually do not own head-offices.

Regus is the world’s leading provider of flexible workspaces with 1500 locations globally.
Regus in Italy since 1996

HSR and temporary offices

City centres
Signature buildings
Business parks
Key office centres

Community
Small town
Local
Community integrated

Airports
Rail station
Service Station
Retail centres

Office locations:
- Milan Duomo
- Milan Carrobbio
- Rome EUR
- Naples Garibaldi
- Turin City Centre
Regus offices inside the HSR station of Naples since Sep 2013

6th FLOOR

Temporary offices are also rented by locals and not only by mobile workers.
Section 2 was opened in 2007 and is 39.4 km long

Section 1 was opened in 2003 and is 74 km long

- Ashford International Station – 8th January 1996
- St. Pancras International Station – 14th November 2007
- Ebbsfleet International Station – 19th November 2007
- Stratford International Station – December 2009
The Greater London contains 32 London boroughs plus the City of London. Camden and Newham boroughs experienced a significant renewal thanks to the inauguration of the HSR stations.
St Pancras International HSR Station in Camden
Inaugurated in 2007
Stratford International HSR Station in Newhman
Inaugurated in 2009
It has been demonstrated that within Band1 and Band2 (catchment area), real estate located within walking distance from the station benefited from the improved accessibility rather than an estate located away 1000 m from the station.
DISTINCTION BETWEEN SOCIAL EXCLUSION AND POVERTY

- According to Silver (1994) social exclusion is “A multidimensional process of progressive social rupture, detaching groups and individuals from social relations and institutions and preventing them from full participation in the normal, normatively prescribed activities of the society in which they live.”

- According to the UN (1996) poverty is “A condition characterised by severe deprivation of basic human needs, including food, safe drinking water, sanitation facilities, health, shelter, education and information”.

Low income categories are not necessarily experiencing social exclusion.

SOCIAL EXCLUSION AND TRANSPORT: WHAT IS THE RELATIONSHIP?

“The process by which people are prevented from participating in the economic, political and social life of the community because of reduced accessibility to opportunities, services and social networks, due in whole or part to insufficient mobility in a society and environment built around the assumption of high mobility”.

(Kenyon et al., 2003)
The Seven Social Exclusion factors proposed by Church *et al.* (2000)

**Physical**
- Physical nature of the transport system can create physical and psychological obstructions for people with restricted mobility.

**Geographical**
- Places geographically far from the transport infrastructures may limit people in doing activities in the immediate proximities.

**From services**
- The increasing diffusion of shops and centralised services may result inaccessible if not served by infrastructures and services of public transport.

**Economic**
- Costs of travelling can limit chances in making a transport mode choice than who has better economic possibilities to travel.

**Time-based**
- The departure/arrival times do not match those desired by the users.

**Based on fear**
- Some people may be worried and feel in danger travelling in public spaces.

**Based on Space Management**
- Some strategies for security and management of spaces in stations dissuade social-excluded people in using public transport.
HSR and social exclusion

Spain – UK – Italy: Economic, Time-based and Geographical exclusion
Spain – UK – Italy: Economic, Time-based and Geographical exclusion

HSR and social exclusion
SOME PUBLICATIONS ON HSR SYSTEMS IMPACTS


