

Science for Environment Policy

Italian cities make progress towards smart mobility

The move towards smart mobility systems in cities across Italy, specifically in relation to public transport systems (including cycle infrastructure, and cycle and car-sharing schemes) has been assessed in a new study. The researchers say significant progress has been made in light of new guidelines imposed by the European Union, which is often linked to financial investment, as well as the capacity of city planners to implement changes.

Making cities smarter and more sustainable is a major aim of the European Union (EU) Horizon 2020 Strategy. Improving the sustainability of transport is prioritised through measures such as encouraging cycling, improving public transport and providing incentives for low-emission vehicles.

Smart mobility refers to increasing the sustainability of transport as well as the efficiency and effectiveness of the transport system, primarily through connectivity (how well different places are connected to each other using the transport system). This study examined the development of sustainable transport on a national level in Italy in order to understand how the country has implemented new EU guidelines. In Italy there is a high reliance on private transport, with cars responsible for 66% of road travel. The Italian government has legislated¹ to promote green economy measures, including providing funds for sustainable transport in cities.

The researchers looked at 22 Italian cities, covering all regions in the country, to assess changes in public transport, cycle lanes, bicycle-sharing and car-sharing schemes. Indicators were selected to analyse changes that had been made to sustainable transport infrastructure in relation to the urban area and the resident population. Data on indicators were taken for 2005, 2010 and 2015 from a range of sources, including official sites of transport companies, bike- and car-sharing data, local-government data and the Italian National Institute of Statistics. The indicators fell under four variables: **public transport**; **cycle lanes**; **bike sharing**; and **car sharing**, and quantified:

- number of kilometres of bus network and cycle lanes;
- demand for public transport (number of passengers per year in relation to number of inhabitants);
- kilometres of cycle paths per 10 000 inhabitants;
- density of bicycle stations;
- number of bicycles, car-sharing stations and share cars per 10 000 inhabitants.

The researchers also looked at the number of bays in the existing interchange parking and the number of electric cars available but only for 2015, as no data were available for 2005 and 2010.

The researchers also compared the funding available for transport schemes to the actual measures implemented in order to understand the impact of national and European investment.

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1. National Law 28 December 2015, No. 221 (officially published on 18 January 2016, No. 13).

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Public transport showed the most minimal changes, with demand remaining constant over the study period. The main improvements were in [technology](#), such as smart-phone apps to buy tickets and check timetables. For cycle lanes, the northern Italian cities generally showed greater bike-path development, although southern cities Cagliari and Palermo have had bike paths and cycle infrastructure extended. Some cities in central Italy had reduced the extent of bike paths.

Bike-sharing schemes have shown the greatest expansion. In 2005, bike sharing was only available in Bologna, but by 2010 it had spread to four cities in the north, two cities in central Italy and three cities in the south. The number of bikes available in cities with schemes has also increased. Plans are also underway to develop bike-sharing schemes in other cities, with funding provided by the national government.

Car sharing has also become more widely available. In 2005, car sharing was only available in four cities; by 2015 the availability in these cities had increased and five more cities had developed schemes, although the researchers point out that car sharing is linked to good public-transport systems, as the two services are complementary. Park-and-ride services have also been developed in the majority of cities. Electric means of transport were still limited in Italy and electric vehicles make up only 0.01% of all cars in the cities studied. The researchers say this may be because the cost of electric vehicles is still relatively high. They believe that electric transportation should be considered for future development and that this will become increasingly important in the future. For example, car-sharing companies are planning to offer fleets of [electric cars](#).

Overall, the study showed good progress in sustainable mobility, particularly between 2010 and 2015, and the researchers say this is linked to the financial support made available to develop these projects. The study showed that the northern Italian cities examined had total financing of over 82 million euros, central Italian cities had 43.5 million euros and southern cities had over 250 million euros. The researchers also highlight the contribution of European regulations imposed to reduce CO₂ emissions and the ability and willingness of city planners to implement the required changes.

The researchers suggest there is a need to continuously monitor mobility initiatives, for example by using the indicator-based assessment used in this study, to ensure projects are implemented effectively and to understand what aspects of governance help ensure sustainable-transport schemes are realised.

