LABORATOIRE AMÉNAGEMENT ÉCONOMIE TRANSPORTS | TRANSPORT URBAN PLANNING ECONOMICS LABORATORY

OPTICITIES

Management of multimodal mobility

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Focus & objectives

In a large number of European cities, everything goes as if car mobility had no priority any more, while it still represents the bulk of transportation. This new trend is a challenge for the evaluation process because the former assessment tools directly inherited from cost benefit analysis were giving an important role to individual time gains i.e. to speed gains. But speed is no more on the top of the agenda and even if time use remains a crucial issue, a new approach of collective interest is necessary.

Situation and challenges

The challenge currently faced by public decision makers is not only to assess public policies to time gains or losses, but to keep under control the impacts of transport on land use. The goal of is to integer new assessment tools based on accessibility measurement. Accessibility maps help to understand the recent new priorities and the coming challenges of public policies.

Approach

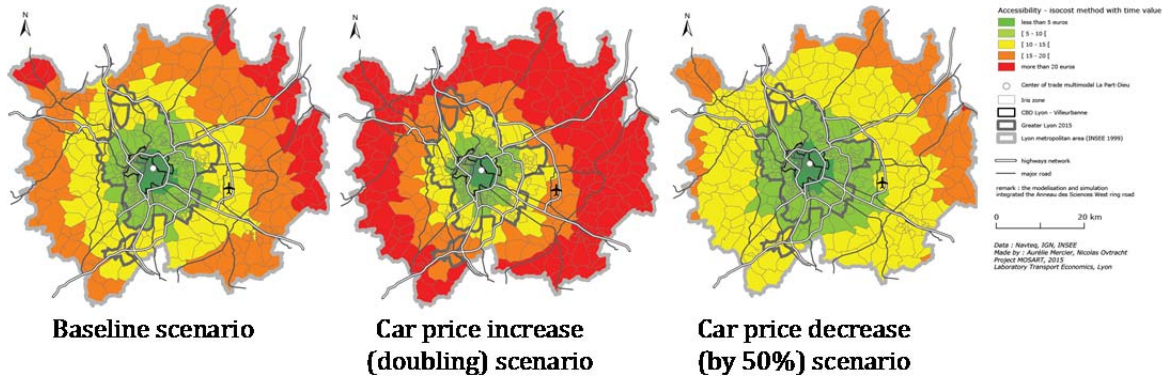
We propose to measure and illustrate accessibility in the Lyon area and to analyze results in the lights of transport demand. More than a current vision of congestion points a current panorama highlights possible future blocking points. Then, a prospective simulation is developed to assess travel demand (by car and public transport) in 2030. First, a business-as-usual scenario is made to

integer changes in population and jobs levels and locations but also new transport infrastructures. Another scenario assumes new pricing policies.

Accessibility is a central concept in the context of evaluating transport projects for urban environments. This concept thereby goes beyond the framework of the transport system and its purely temporal dimension, associating it with a spatial dimension. Accessibility should, then, reflect the spatial organization and the quality of the transport system that provide individuals with the opportunity to participate in activities located in different parts of the region. Accessibility impacts of transport projects are assessed using the modelling platform for planning sustainable mobility MOSART.

Results

Both the current situation and the BaU scenario for 2030 highlight relatively uncongested networks and accessibility is not impacted. In 2030 BaU scenario, accessibility increases even with a population and traffic raise, because of the number of jobs growth. Nevertheless when applying a price increase (doubling either car or public transport costs), network not impacted by the price variation is quickly congested. Cross-town expressways or bypasses are primarily impacted for the road network and central stations for public transport one. A price variation has a fairly limited impact on accessibility by car for car-users coming from central areas, where accessibility stay with a high level. Nevertheless for those coming from beyond the first ring, impact is felt with a travel time variation around 10 minutes, at least.



Accessibility by car with price variation scenarios in 2030 for Part-Dieu center

Lessons learnt

Outcome raises three key issues. The first one refers to the link between congestion and accessibility. Level of congestion affects accessibility increasing travel time or reducing the number opportunities available for a given travel time. Nevertheless travel time increase can be offset by an increase of opportunities.

The second issue focuses on the link between accessibility and spatial development. The accessibility indicator helps to assess urban dynamics and to reveal the public objectives concerning urban spatial structure. One of the main challenges in that field is to bring appropriate instruments of accessibility measurement and modelling into practice.

Individual perception of accessibility is a key element to understand impact of a transport policy variation on travel behaviors. A travel costs sensitivity parameter can be drawn from accessibility indicators to highlight socio-economic disparities to access urban opportunities.

Need more information:

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Publications

Mercier A., Comte X., Ovtracht N., Faivre d'Arcier B. (2016), "Congestion in urban areas: a difficult trade-off between financing and accessibility?". In *56th ERSA Congress*, Vienna (Austria), August 23-26, 2016.

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Mercier A., Comte X., Ovtracht N., Tran T. D., Faivre d'Arcier B., Souche S. (2015), "Accessibility maps and key performance: assessment methodology for transport policy in urban areas". *Deliverable D323, OPTICITIES project*. 51 p.