White paper

Socio-economic data: how to take advantage of this in mobility projects?

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What data are we talking about?

Socio-economic data of interest for transport and mobility studies are statistical information aggregated at different space scales: region, canton, city, or at the sub-communal level on the densest areas. These data can be: the employment rate, the socio-professional categories, workplaces, the transportation modes used for commuting, the household composition, the gender and age distribution among the population, the proportion of workers or employees, the number and category of jobs, the rate of household motorization, the rate of travel by public transport, among other things!

As you can see, this information is very rich. To build on these statistics, household and business surveys are regularly conducted on random samples. Then they are anonymized, adjusted, and then published by the public services concerned (in France : https://www.statistiques.developpement-durable.gouv.fr, https://www.insee.fr, etc.).

What is the purpose of socio-economic information in the mobility projects?

These data provide a snapshot of a territory and its main components at a given time. They have many applications for the different trades that enlighten, advise and support public mobility policies: geographers, demographers, urban planners, economists, mobility engineers, etc. These data can help to characterize the major functions of a territory, to understand the determinants of mobility at finer scales, and to inform the reflections on the future mobility projects. They are also a prime raw material for finding answers that go far beyond intuition and require much information to be crossed. For instance: what is the dominant transportation mode for an employee in the 30-39 age group, living in one area and working in another area?

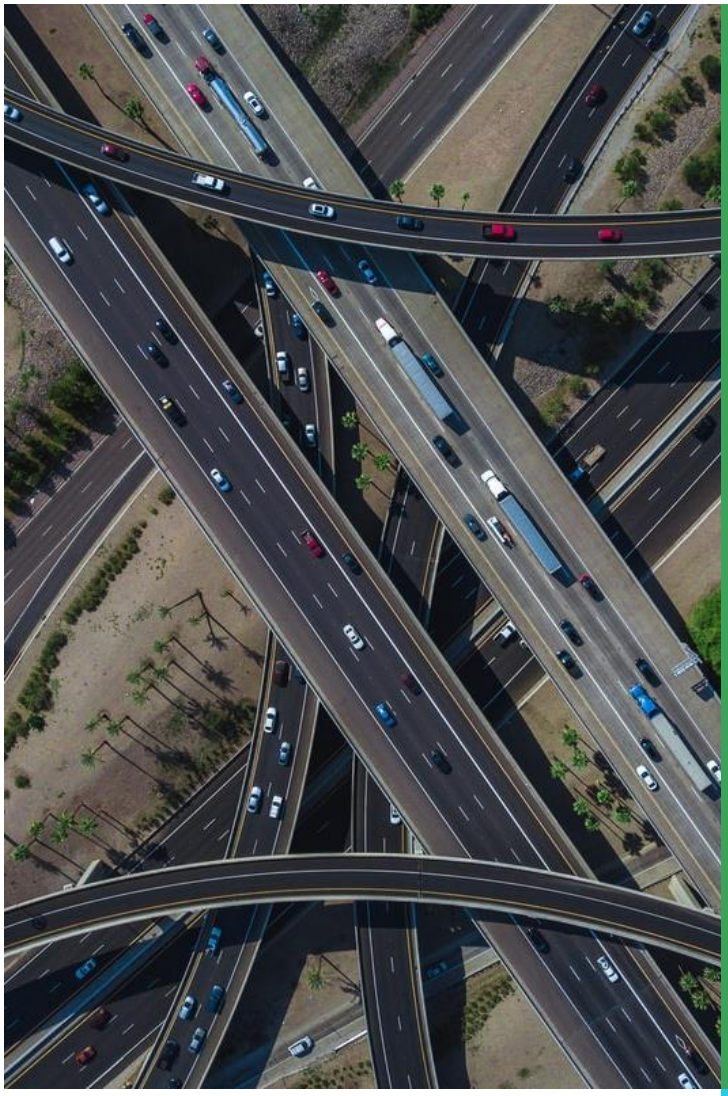
Transportation authorities, network operators and mobility service providers also rely on this data to scale up their services and measure the correct balance between transport supply and travel needs. These statistical data are regularly updated and provide interesting insight into the evolution of mobility at each scale of a territory, and the effects of transportation projects. For instance, following the introduction of a more proactive policy in favor of public transport, these statistics provide robust and accurate evidence on the (expected) shift from private cars to public transports.

Why cross-reference statistical mobility data with other data sources?

Of course, these statistical data alone are not sufficient to understand the transport and mobility systems as a whole. They take on a new dimension when they are supplemented by other information such as:

- The transportation offer (road network, public transport networks, mobility services);
- The traffic, speed/flow data on road networks, passengers using public transport, travel time data.

Combining these dataset opens up new and even richer perspectives for analysis: building accessibility maps, calculating routes, estimating travel times on path combining multiple modes of transport, estimate the size of the population affected by a new transportation line, estimate the potential for modal shift to on-demand transportation services.

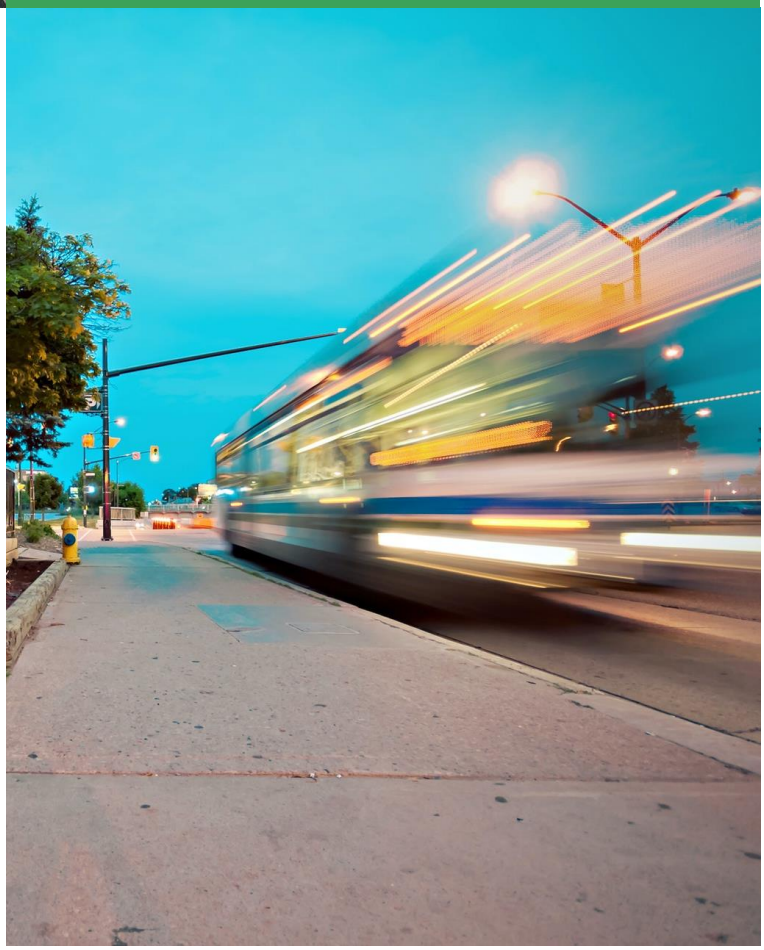


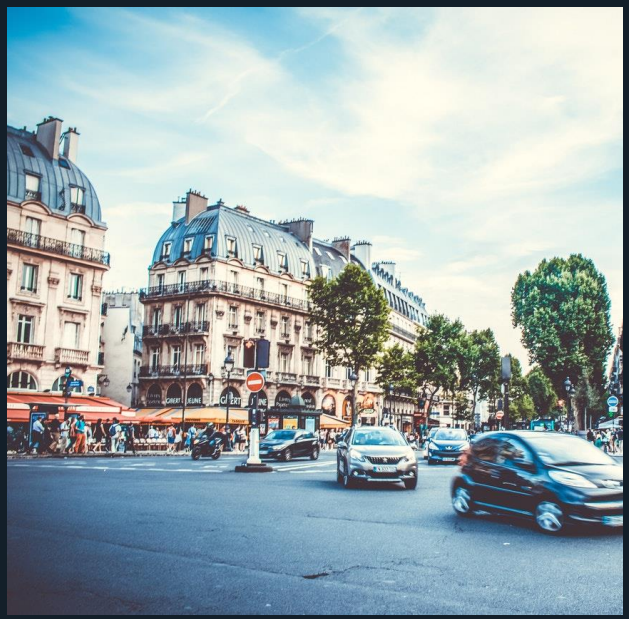
Key data to design decision support tools

These data are inputs for simulation models and tools, whether they are LUTI (Land Use and Transport Integrated) or strategic displacement models. Transportation models transform these data from the state of statistics to the state of explanatory variables. They find links into large dataset, explain correlations by causalities, and thus model the transportation system over large territories.

Today, these models are the basis for evaluating mobility projects and ensuring their adequacy with the development of the territories.

These are essential tools to inform investments in transportation infrastructure, but also to integrate new mobility services (micro-mobility, carpooling, etc.), to test the impact of new pricing strategies (ticket for public transport, tolling strategies, parking fees, etc.), to adapt operating strategies to rules and regulations (lower speed limit, ban on area crossing for trucks, Low Emission Zone) and ensure optimal traffic conditions on road networks (dynamic traffic control, work zone).





What benefits to get from a data analytics platform like Neovya Hubsim?

Data on urban mobility are massive, heterogeneous and dynamic. Their processing and analysis are time consuming and complex tasks that involve mapping skills and tools as, statistics, data science, engineering and modeling.

Neovya Hubsim brings together in a unified collaborative secured workspace, public and private data, transportation offer data (road network, public transport), flow data (traffic counts, Floating Car Data, etc.), and thus facilitates the work of cross-analysis of all this information.

Neovya Hubsim is also a simulation platform: datasets are feeding powerful algorithms to design transportation models and evaluate the impact of projects in all their dimensions: level of service, operating conditions, saturation zones, travel times, environmental externalities (pollutants and noise).

To accelerate the transition to a smoother, safer, and more sober mobility system!

> Wishing to discover Neovya Hubsim data analytics and simulation platform?
> https://www.neovya.com/neovya-hubsim