Data-driven decision making tools for small and medium-sized cities

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Which data? Which method?

All local authorities are in a position to determine and describe passenger mobility issues in both a quantifiable and a qualitative way. However, only a relatively small number are in a position to do the same for urban freight transport, i.e. to describe the size and characteristics of these transport activities. The majority of the existing data is private, and dedicated surveys need to be executed regularly. Additionally, cities are wondering which data and with which method this data should be collected and analysed for supporting the planning process for sustainable city logistics.

| Trip details and patterns of goods vehicles in the urban area | + Can provide information about vehicle trips and rounds without placing additional work on the driver or company—can give a detailed insight into speeds and travel times on different roads and routes |
| Loading/unloading activity of goods vehicles in the urban area | + Can provide detailed routing information |
| Parking activity of service vehicles in the urban area | - Automatically captured data does not usually provide the same level of detail possible through vehicle trip diaries about type of goods, reason for stopping, quantity delivered unless the driver manually inputs data |
| | - Can be cheaper to analyse than data collected by a vehicle trip diary (as manual data input not required) but obtaining permission to access data (and potential purchase costs) can be problematic and prohibitive |
Policy-relevant KPI: average time lost in congestion

- **Goal**: measure of the way in which congestion selectively affects different traffic streams / user groups
- Highly disaggregated **KPI measure** to achieve the above goal (each vehicle travelling on each arc)
- **Integration** of different data sources in **Turin**: infrastructure-based (traffic flows) + GPS traces of fleets
- **Feedback from cities**: focus on **light duty vehicles** according to the specific service points that need to be reached in the city and of the time of the day / day of the week
Tool testing: load/unload in city center

- **Goal**: Understanding the **effectiveness** and **impacts** of delivering operations in key areas of the city
- Assessing the already available **unload/load parking** spots
- **Investigate** selected stops (according to duration) through **clustering** algorithm and other **indicators** (presence of load/unload areas, # and duration of stops, # and kind of vehicles delivering, street characteristics)
- On site **survey**
- Understanding which **actions** LA should address to ameliorate urban freights policies at specific locations through looking at **deliveries** in a specific street and at the retailers and shops exploitation of express couriers’ services
Exploitation

➢ Inform a wide range of policy actions:
  • most critical arcs for given travel purposes (parcel services, commuting)
  • most congested areas in relation with specific user groups (if related metadata are associated with GPS traces)
  • most congested lines in a public transport network
  • possibility for LA to have a better knowledge of freight distribution patterns at the more disaggregated individual loading/unloading area

➢ Insights relevant for different stakeholders: city administrations, transport services operators, social groups…