CIVITAS
Sustainable and smart mobility for all
2030

CIVITAS indicators

Modes available at multimodal hubs (TRA_MM_PI1)

DOMAIN

Transport	Environment	Energy	Society	Economy

TOPIC	**Multimodality**	
IMPACT	**Physical integration of transport modes** *Increasing the number of modes at multimodal hubs*	**TRA_MM**

Category

Key indicator	**Supplementary indicator**	State indicator

CONTEXT AND RELEVANCE

Physical integration of transport modes refers to the co-location and seamless connection of different transportation systems to facilitate easy transfers. This concept aims to create a cohesive network where various modes of transport, such as buses, trains, and bicycles, are interconnected. By physically integrating transport modes, cities ensure that passengers have easy access to multiple forms of transportation from a single location. For example, locating a bus terminal in proximity to a train station facilitates train-to-bus connections and vice versa.

Facilitating easy transfers is essential for the widespread adoption of public and active transportation modes. Each mode serves a specific purpose: trains are ideal for intercity travel, while buses are often used for neighbourhood-level movements due to differences in speed and stop spacing. Active modes, such as walking and cycling, help users cover the last mile. By enabling seamless connections between modes, users can reach their desired destinations in a time-efficient manner by combining the most suitable transportation options. Encouraging more users to opt for public and active transportation options reduces the number of car trips in urban areas, resulting in lower emissions, better air quality, increased road safety, and more efficient use of public space.

This indicator provides a measure of the physical integration of transport modes. **This is a relevant indicator when the policy action is aimed at improving the physical integration between different modes of transport. A successful action is reflected in a HIGHER value of the indicator.**

DESCRIPTION

The indicator is the number of different transport modes available at a chosen multimodal hub, i.e., transport modes whose stops, stations, or bays are located less than 100 meters from each other.

The unit of measurement is **number of modes**.

METHOD OF CALCULATION AND INPUTS

The indicator should be calculated exogenously based on direct observation, **and then coded in the supporting tool.**

Method	
Calculation of the index based on maps of transport stops, stations, and bays	Significance: **0.25** 

INPUTS AND METHOD OF CALCULATION

The indicator is determined by counting the number of distinct transport modes available at a selected multimodal hub. A transport mode qualifies if its stops, stations, or bays are located within 100 meters of one another. The necessary data is sourced from maps of the experiment area. Any transport mode may be considered, including but not limited to buses, trains, metro, light rail, shared mobility services, and private cars (e.g., Park & Ride facilities).

The experiment would result in a modification of the maps of the stops, stations, and bays in the experiment area (increase in multimodal stops, i.e., transport stops, stations and bays located less than 100 meters from each other).
EQUATIONS The quantification of this indicator does not require any equation. The value of the indicator $\boldsymbol{ModesMmhubIndex}$ to be coded in the supporting tool is just the observed number of distinct transport modes available at the multimodal hub under study according to the map of stops, stations, and bays of the experiment area.

ALTERNATIVE INDICATORS

This indicator measures the number of different transport modes available at a selected multimodal hub, defined as modes with stops, stations, or bays located within 100 meters of each other. In contrast, indicator **TRA_MM_PI3** quantifies the number of passengers switching transport modes at a given multimodal hub. This alternative indicator provides a more meaningful assessment, as it reflects actual usage rather than the mere availability of multimodal travel options. However, its data collection and computation are more complex.

For a targeted assessment of physical integration between private cars and public transport, indicator **TRA_MM_PI2** measures the usage of Park&Ride stations.