CIVITAS indicators

Public transport accessibility justice index – Version 1 (SOC_EQ_AJ1)

DOMAIN

Transport	Environment	Energy	**Society**	Economy

TOPIC	**Equity**	
IMPACT	**Transport accessibility justice** *Providing comparable accessibility by public transport to all urban inhabitants*	**SOC_EQ**

Category

Key indicator	Supplementary indicator	State indicator

CONTEXT AND RELEVANCE

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This indicator provides a measure of how urban accessibility by public transport is different between the city centre and the outskirts. **It is a relevant indicator when the pilot area is a whole city and the policy action is aimed at providing equitable accessibility by public transport to all citizens, including those living outside the city centre. A successful action is reflected in a <u>HIGHER</u> value of the indicator.**

DESCRIPTION

This indicator is the ratio between the number of stops and stations that can be reached within 20 minutes using public transport from one public stop or station in the outskirts and the number of stops and stations that can be reached within 20 minutes using public transport from one public stop or station in the city centre. Being a ratio, the indicator is **dimensionless**.

METHOD OF CALCULATION AND INPUTS

The indicator is calculated endogenously in the supporting tool, building on a set of required inputs**.**

Method		
Calculation of the index based on PT timetables and stops	Significance: **0.50**	▮▮▯▯

METHOD OF CALCULATION

The indicator is computed **within the supporting tool** according to the following steps:

- Computing the average number of stops for the city outskirts areas
- Computing the average number of stops for the city centre areas
- Computing the ratio between the average number of stops in the outskirts and in the city centre

INPUTS

The following information is needed to compute the indicator:

a) $AccSt_a^{<Centre>}$ The number of stops and stations that can be reached within 20 minutes from public transport stops and stations located in some sample areas in the centre of the city.

b) $AccSt_a^{<Outskirts>}$ The number of stops and stations that can be reached within 20 minutes from public transport stops and stations located in some sample areas in the outskirts of the city

Both these elements can be drawn from a map of the public transport stops and stations in the city and the timetable of public transport services.

Note that this information is equivalent to the computation of the indicator TRA_PT_PC3 (see related factsheet) for the sample areas.

The experiment would be reflected in the indicator by changing the timetable of public transport services available from stops/stations in different zones of the pilot area as result of e.g., addition of one route or introduction of reserved lanes to increase speed.

EQUATIONS

Building on the number of stops and stations that can be reached within 20 minutes from a sample of areas of the city, the average number is computed, within the supporting tool, by means of the simple equation:

$$AvAccSt^A = \frac{\sum_a^z AccSt_a^A}{z}$$

Where:

$AccSt_a^A$ = Number of public transport stops/stations that can be reached within 20 minutes from stops/stations located in the area *a* belonging to the context *A*

A = city context: either city centre or outskirts

z = Number of areas considered

Once the averages are computed for both city centre and outskirts, the indicator is computed as a ratio:

$$EqAccIndex = \frac{AvAccSt^{<Outskirts>}}{AvAccSt^{<Centre>}}$$

ALTERNATIVE INDICATORS

This indicator is based on the connectivity of public transport in terms of stops or stations that can be reached in a certain time. This is a meaningful measure and has the advantage of requiring simple input that can be collected straightforwardly. At the same time, the relevance of the indicator is not so high, as the opportunity of reaching stops or stations does not directly imply that relevant city functions (e.g. offices, shops, schools, etc.) are accessible. An alternative indicator is SOC_EQ_AJ2, which has the same form of the indicator described in this factsheet but is based on the accessibility to city functions. This alternative indicator is more significant, but it also requires more complex inputs.