CIVITAS
Sustainable and smart mobility for all
2030

CIVITAS indicators

Perceived safety of mobility (SOC_SF_PS1)

DOMAIN

Transport	Environment	Energy	**Society**	Economy

TOPIC	**Safety**	
IMPACT	**Perceived safety during personal mobility** *Increasing the perception of that urban trips are safe*	**SOC_SF**

Category

Key indicator	**Supplementary indicator**	State indicator

CONTEXT AND RELEVANCE

Perceived safety during personal mobility refers to how safe citizens feel when making trips in an urban area. It encompasses a broad range of factors, including the presence of adequate infrastructure, traffic conditions, the behaviour of others, and overall environmental features that may contribute to a sense of security. It also reflects the emotional response of individuals to their surrounding environment, whether it feels welcoming and safe or uncomfortable and threatening. This perception is influenced by various elements such as lighting, the design of public spaces, and visibility.

High citizen confidence in the safety of their urban journeys supports an increase in the use of public transportation and more frequent walking and cycling, which can reduce reliance on private motorized vehicles, in addition to a general boost in the overall quality of life.

This indicator provides a measure of how safe is making trips in the pilot area according to the perception of citizens. **It is a relevant indicator when the policy action is aimed at increasing the perceived safety of mobility. A successful action is reflected in a HIGHER value of the indicator.**

DESCRIPTION

This indicator is a **dimensionless score** representing the average of the perceived level of safety reported by a sample of individuals in the pilot area.

METHOD OF CALCULATION AND INPUTS

The indicator is calculated as the average score assigned by a sample of citizens who provided responses to a question asking how safe they feel making trips in the pilot area. **The indicator should be calculated exogenously** based on the specified inputs and its value should be coded in the supporting tool.

Method	
Calculation of the indicator based on responses collected by means of a sample survey	Significance: **0.50** 

INPUTS

The following information is needed to compute the indicator:

- **Responses of a sample of individuals to a question regarding the perceived mobility safety in the pilot area.**

A suggested formulation of a question regarding the perceived mobility safety in the pilot area is provided in the Guidelines for surveys which are part of the MUSE Evaluation Framework.

The experiment would be reflected in terms of a different responses to the same question.

METHOD OF CALCULATION

The requirement for computing the indicator is collecting the responses from a sample survey (which can be organised to collect more information than the one needed for this indicator).

Assuming that the formulation of the question suggested in the Guidelines for surveys is used, the indicator should be computed **exogenously** according to the following steps:

- **Calculation of the share of individuals assigning a certain score to the mobility safety** (see equation below)
- **Calculation of the perceived mobility safety indicators** (see equation below).

EQUATIONS

The share of individuals assigning a certain score to the mobility safety should be computed as:

$$^{l}MobSafeSh = \frac{\sum_i {}^{b}MobSafe_i \; where \; b = l}{I}$$

Where:

$^{b}MobSafe_i$ = Score of mobility safety *b* assigned by individual *i*.

I = Total number of responses collected.

For example, if a sample of 300 individuals was surveyed and 134 of them assigned an mobility safety score of 6, $\sum_i {}^{b}MobSafe_i \; where \; b = 6$ would be 134 and the share of those assigning this score would be 134 / 300 = 45%

The mobility safety indicator should be computed as:

$$\boldsymbol{AvPercMobSafe = \sum_{l} \left({}^{l}MobSafeSh * {}^{l}SafeScore \right)}$$

Where:

$^{l}SafeScore$ = Mobility safety score *l*.

In the example above, the mobility safety score *l* is 6.

ALTERNATIVE INDICATORS

This indicator refers to the perceived safety rather than to safety as such. As regard of this impact, there are not alternative indicators in the MUSE framework.

Alternative indicators refer to the measurement of objective levels of safety. They are **SOC_SF_SF1**; **SOC_SF_SF2** and **SOC_SF_SF3**. All these indicators are based on accident data. The difference between one or another of these alternative indicators consists of their level of disaggregation. **SOC_SF_SF1**; considers all accidents and victims without any differentiation. **SOC_SF_SF2** distinguishes accidents by severity. **SOC_SF_SF3** adds to severity also a segmentation by individuals' categories (e.g. pedestrian, bike drivers, etc.). Clearly, more detailed indicators are more significant. The choice of one or another is basically a matter of data availability. If the required data is available, computing alternative indicators is simple. Accident data cannot be collected on

purpose, it should be provided by local police. Knowingly, not all accidents are reported to the local police; therefore, the indicators are not necessarily exhaustive. However, missing accidents are likely the lightest ones; serious accidents – which are the most relevant for a safety indicator – are reasonably well covered.