

Choosing Mobility Indicators:

process, indicator examples, and monitoring methodologies, to be able to perform evaluation and to interpret results necessary to take further actions

Marcin Wołek, Aleksander Jagiełło, Anna Michalska-Szajer
University of Gdansk

SUMPs for BSR workshop [online]

11.02.2026



Agenda

- The importance of the M&E process
- The indicators selection process
- Indicator examples: modal split - a Holy Grail among indicators?
- Summary



Monitoring & Evaluation: different perspectives for the SUMP

Aspect	Monitoring	Evaluation
Frequency/ Timing	Frequent, regular	Strategic, periodic, less regular
Purpose	Supporting managerial decisions	Learning for policy and program improvement (“lessons learned”)
Timeline	SUMP’s action plan implementation	Before, during and after implementation of the action plan.
Performing body	Internal team	External or/and internal evaluators
Content of the process	Performance and results	Vision, goals adequacy, compliance with policies
Principal aim	Correcting deviations from the plan	Assessing plan adequacy
Notion of public action	Does not question the plan	Allows questioning the plan
Main tools	Indicators	Interviews (also Focus Group Interviews), reviews, indicators

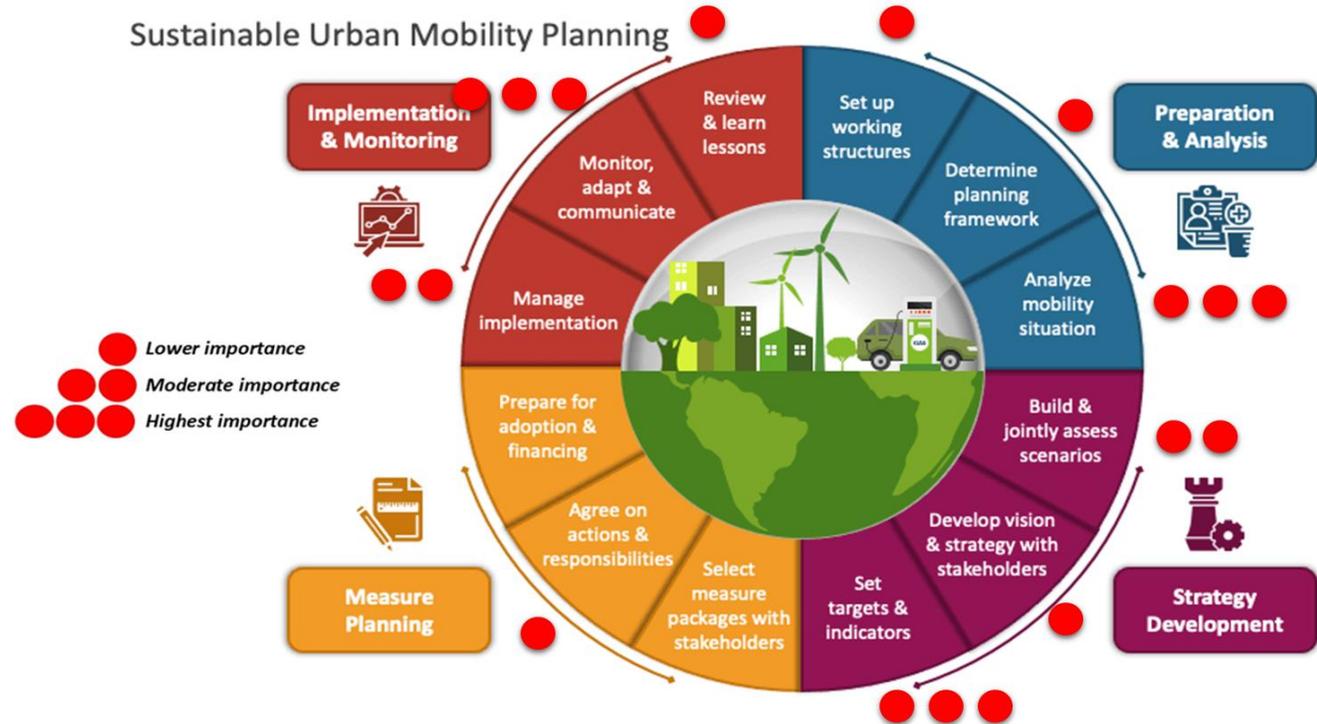
Source: own study based on: S. Segura, b. Pedregal: *Monitoring and Evaluation Framework for Spatial Plans: A Spanish Case Study*. “Sustainability” 2017 nr 9(10), A. Markiewicz, I. Patrick: *Developing Monitoring and Evaluation Frameworks*. SAGE Publications, 2016, *Monitoring and evaluation Assessing the impact of measures and evaluating mobility planning processes*. CH4ALLENGE “Addressing Key Challenges of Sustainable Urban Mobility Planning”, co-funded by the European Commission 2016.

The importance of the M&E at different stages of the SUMP process

Source : Rupprecht Consult 2019

SUSTAINABLE URBAN MOBILITY

Sustainable Urban Mobility Planning



The importance of M & E at different stages of the SUMP preparation

- Begin with an in-depth analysis of existing current strategic documents and plans.
- Identify obligatory data to be collected (i.e. SUMI/UMI indicators, national/regional requirements).
- Identify critical stakeholders („data owners“).
- Collect the primary data only in cases where adequate secondary data sources are unavailable.
- Identify "data gaps" within the database.
- Review the completeness and sufficiency of data both when diagnosing the current state and after setting plans, actions, and objectives.
- Provide sufficient information to enable adjustments in plans, actions, and goals related to the urban mobility strategy.
- Make the monitoring framework flexible – the documents are adopted with a 10-year perspective or longer.

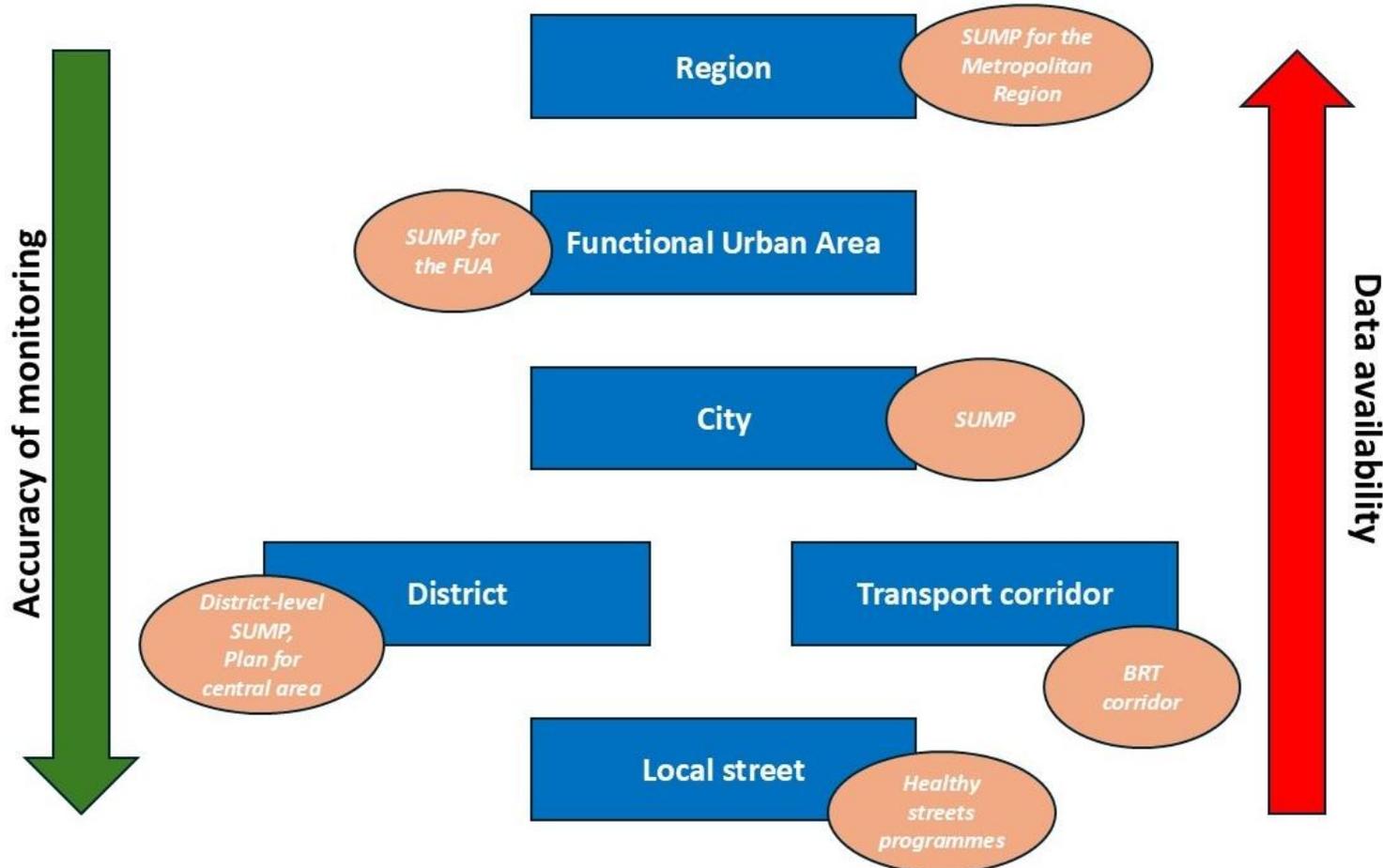
M&E – a bridge between sustainable urban mobility planning and other strategic documents on a city or metro level: case study of Malmö (Sweden)

Selected strategic statements and goals in Malmö’s strategic documents and programmes

Statement/Goal	Document
Malmö as a regional engine for green growth and employment	Comprehensive Plan
A close-knit, dense, green, and mixed-use city	
Malmö has a sustainable mobility system	Environmental Programme 2021-2030
Greenhouse gas emissions within Malmö’s geographical area have decreased by 70% since 1990	
The supply of and access to green and blue environments have increased in Malmö	
Exposure to health hazards has decreased significantly in Malmö (air pollution, noise)	
Fossil energy use for transport within Malmö’s geographical area has decreased by 80% compared with 2010	Energy Strategy 2022-2030
To reduce the negative impact of noise on human health and create a good living environment	Action Programme against Environmental Noise 2024–2033



Searching for a compromise between a very detailed approach and the feasibility of the document



- Accuracy;
- Completeness;
- Timeliness;
- Consistency;
- Reliability;
- Correctness;
- Availability;
- Relevance.

- Using available data instead of desired data;
- Using data without knowledge of the methodology;
- Relying on outdated data;
- Failing to update data despite significant events;
- Using partial data that cannot be generalised to the entire population.

Indicator Selector Tool

Welcome to the indicator selector tool

You can filter the suggested indicators by filtering them by the:

- +++ : Indicators of critical relevance for cities of a specified size
- ++ : Indicators of high relevance for cities of a specified size
- + : Indicators of moderate relevance for cities of a specified size

The sizes of the cities are categorised as follows:

- Very small city – up to around 40,000 residents
- Small city – up to around 80,000 residents
- Medium city – around 200,000 residents

Output indicators measure the direct and immediate deliverables of activities or interventions. They capture what has been achieved. Result indicators measure the short- to medium-term effects or changes that occur because of outputs. They reflect how well the activities are implemented. Impact indicators measure the long-term, higher-level effects that occur as a consequence of results — they capture the ultimate effects of the activities.

Type of mobility	Objective	KPI	Example of target	Unit of measure	Very small city	Small city	Medium city	Level of Indicator (Output / Result / Impact)	Required Data
Walking	Increase in the share of walking trips in modal split	Share of walking trips	Increase the share of walking trips to 30% of total trips by 2030	%	+++	+++	+++	Result	Number of walking trips (daily/weekly), Total number of trips (all modes)
Walking	Increase in the average number of walking trips made by residents	Average number of walking trips per person	Achieve an average of 4 walking trips per resident per day by 2030	number	++	++	++	Result	Total number of walking trips, Number of residents (or sample population)
Walking	Increase in the number of residents living very close to the city centre								Area (GIS polygon), Population distribution / address points
Walking	Increase in the number of residents living near the city center								Area (GIS polygon), Population distribution / address points
Walking	Increase in the number of residents living in areas covered by planning documents								Zoning plans (zoning layer), Residential buildings / address points
Walking	Increase in the number of residents in a given city								Residents (per year)
Walking	Increase in the density of the sidewalk network								Length (km), Area of analysis zone (km ²)
Walking	Increase in the area of walking zones								Walking zones, woonerfs, car-free areas
Walking	Decrease in the number of accidents involving pedestrians								Casualties in all traffic accidents
Walking	Decrease in the number of accidents involving private cars								Car collisions with injuries
Walking	Decrease in the number of accidents involving non-motorized vehicles								Accidents involving bicycles, e-scooters, etc.
Walking	Decrease in the length of roads without street lights								GIS, Lighting coverage data
Walking	Decrease in the length of roads without sidewalks								Sidewalk coverage (presence/absence)
Walking	Increase in the share of raised pedestrian crossings								Crossings, Total number of pedestrian crossings
Walking	Decrease in the percentage of students with overweight	Percentage of overweight or obese middle school students	Reduce the percentage of overweight students by 10% by 2030	%	++	++	++	Impact	Number of students with BMI above threshold, Total number of students measured

Currently, the Indicator Selector Tool includes ca. 200 KPIs.

Each KPI is described through the following elements:

1. Objective,
2. Name of KPI,
3. Example of a target to which particular KPI can be assigned,
4. Unit of measure,
5. Relevance of the indicator for cities of different sizes,
6. Level of indicator (Output / Result / Impact),
7. Required data

Indicator Selector Tool 2



- A database of selected indicators to support cities;
- Developed over the last year with collaboration with City Partners and Crossborder Advisory Group;
- Validated through the Eisenhower matrix (importance and data availability);
- Clustered into several thematic topics;
- The possibility of preselecting indicators based on various criteria.

<https://bsr-sump.eu/tool/>

[🔗 Read the details about the tool and learn how to use it.](#)

City size :🕒

- Very small
- Small
- Medium

Importance :🕒

- Complementary
- Critical
- High
- Moderate

Level of Indicator :🕒

- Impact
- Output
- Result

Type of mobility :

- Horizontal
- Walking
- Cycling and micromobility
- Public transport
- Shared mobility
- Cars
- City Logistics (local) light freight transport - first and last-mile logistics
- Heavy Freight Transport

Theme :🕒

- Accessibility
- Economy
- Environment
- Governance
- Health
- Safety

Data collection effort :🕒

- Easy
- Hard
- Medium

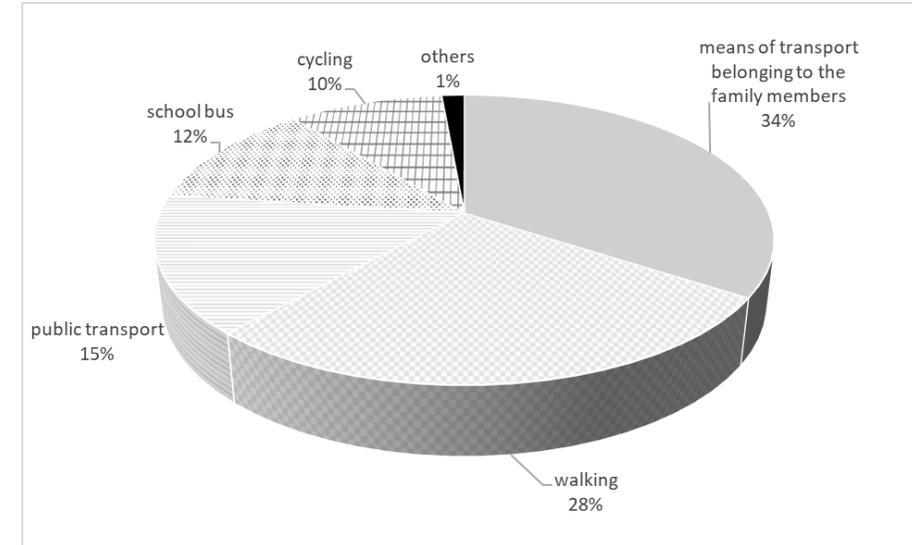
EU alignment :🕒

- Core
- Core (TEN-T mandatory)
- Optional
- Recommended

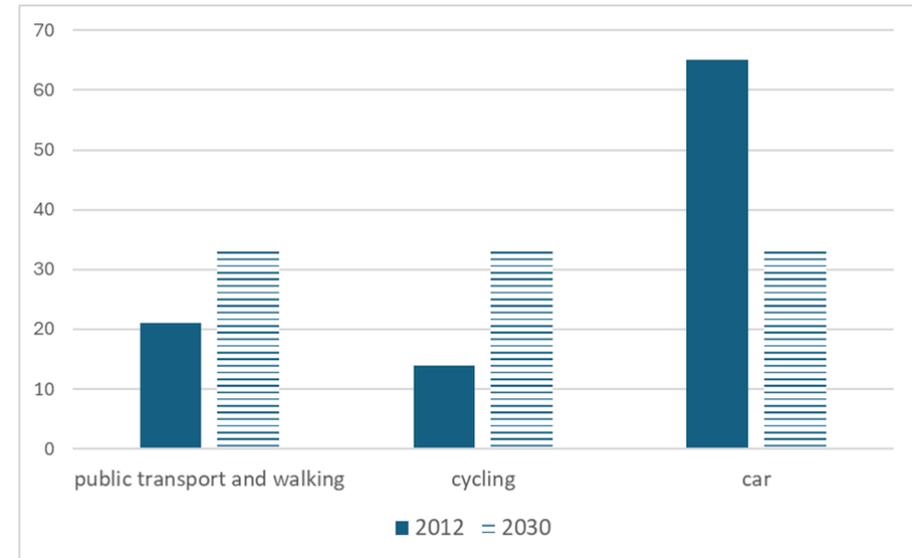
You can export your preselected indicators to pdf file

- Modal split can also be calculated for the specific groups of users;
- In small municipalities, mobility related to the school's performance is very prominent;
- Getting to school survey conducted in Cesis district (Latvia) in 2023 is a picture of diversified school mobility; A LOW HANGING FRUIT IN THE M& E!
- Modal split can also be used to diagnose a specific area, most often the city centre;
- But it can also be used for comparison and measuring the progress in a particular city.

Modal split can be used for different purposes

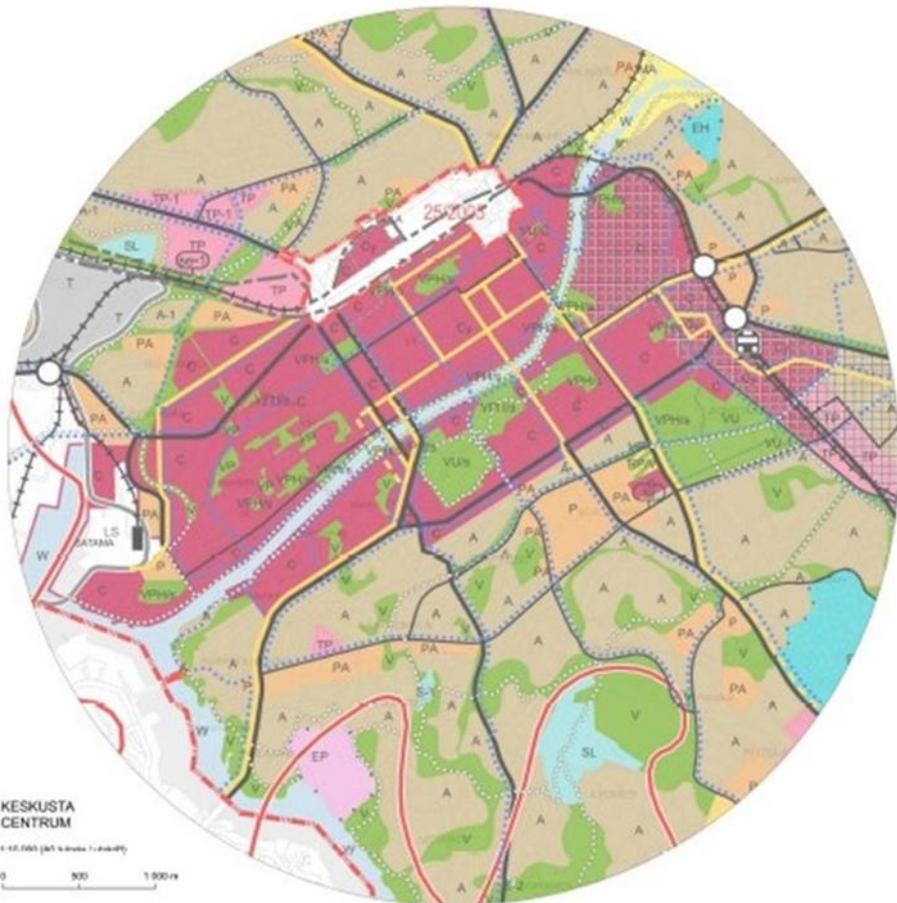


Getting to schools in the Cēsis district in April 2023
(number of indications)

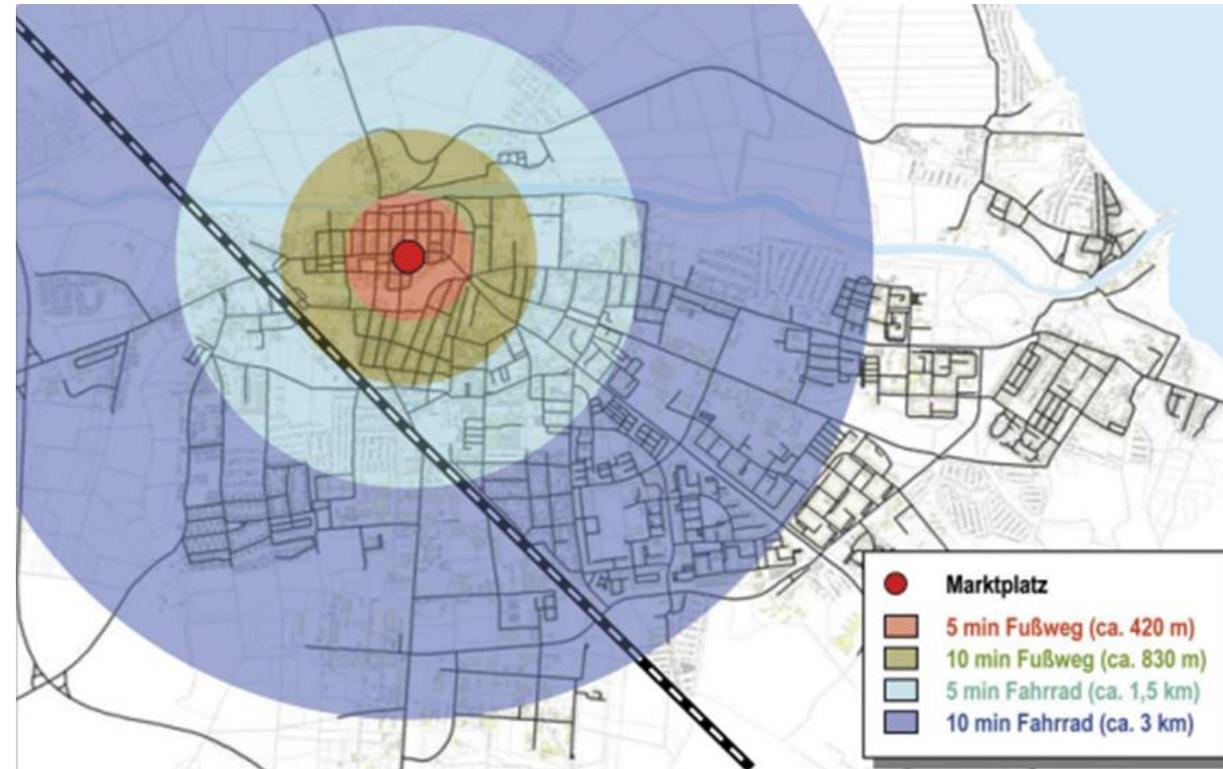


Modal split in Gävle in 2018 and 2030 (forecast)

Spatial layout supports a high share of active modes in modal split (and highlights the need to monitor the spatial dimension of a city)



City centre of Turku (Finland)

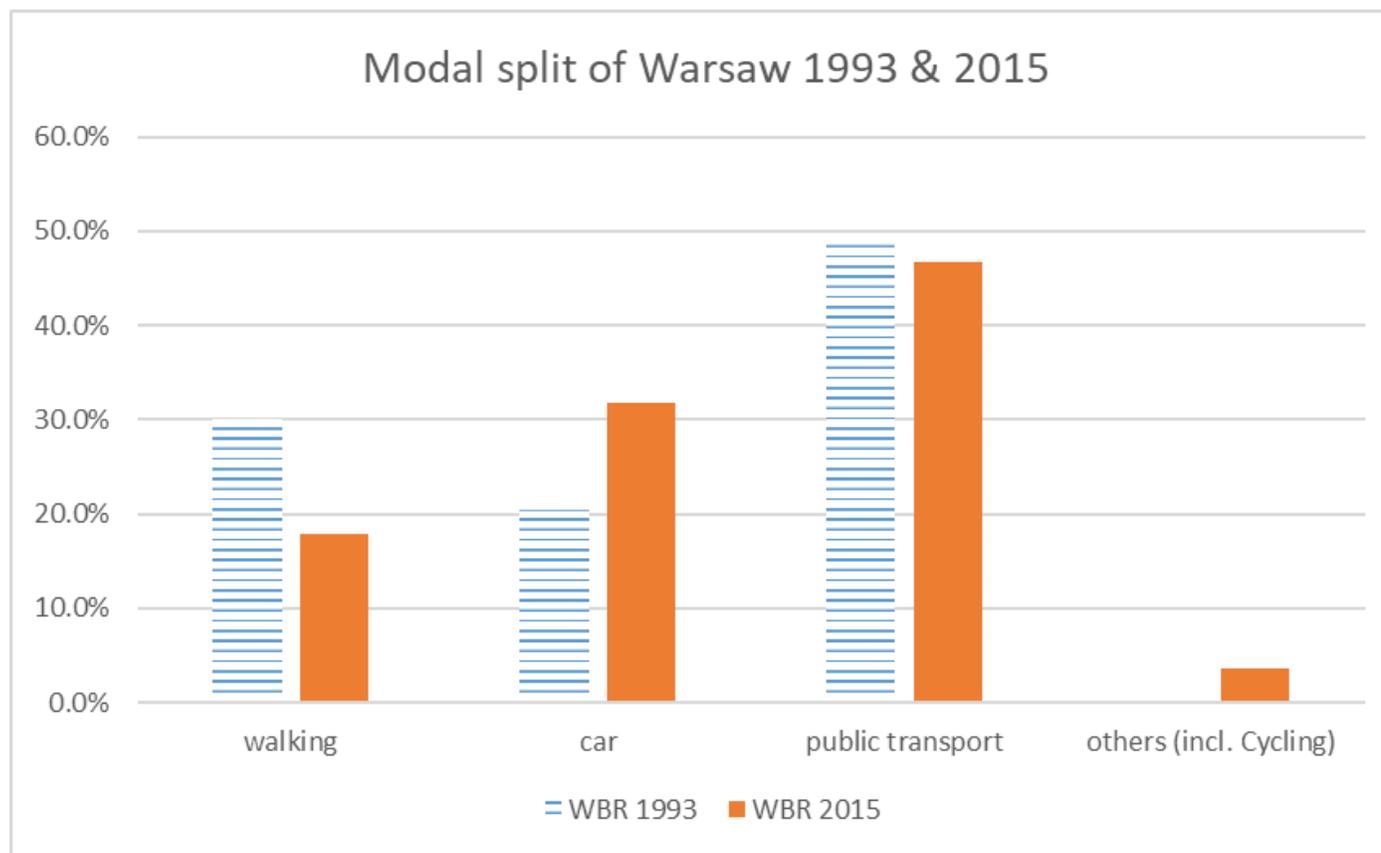


Spatial accessibility for active modes in Greifswald city

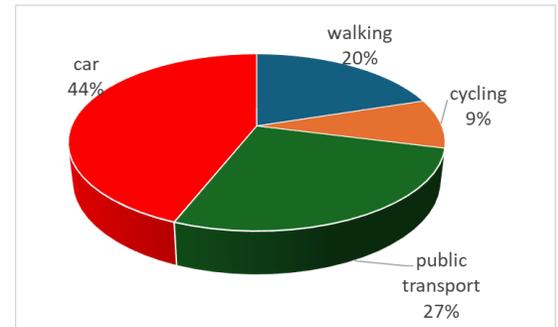
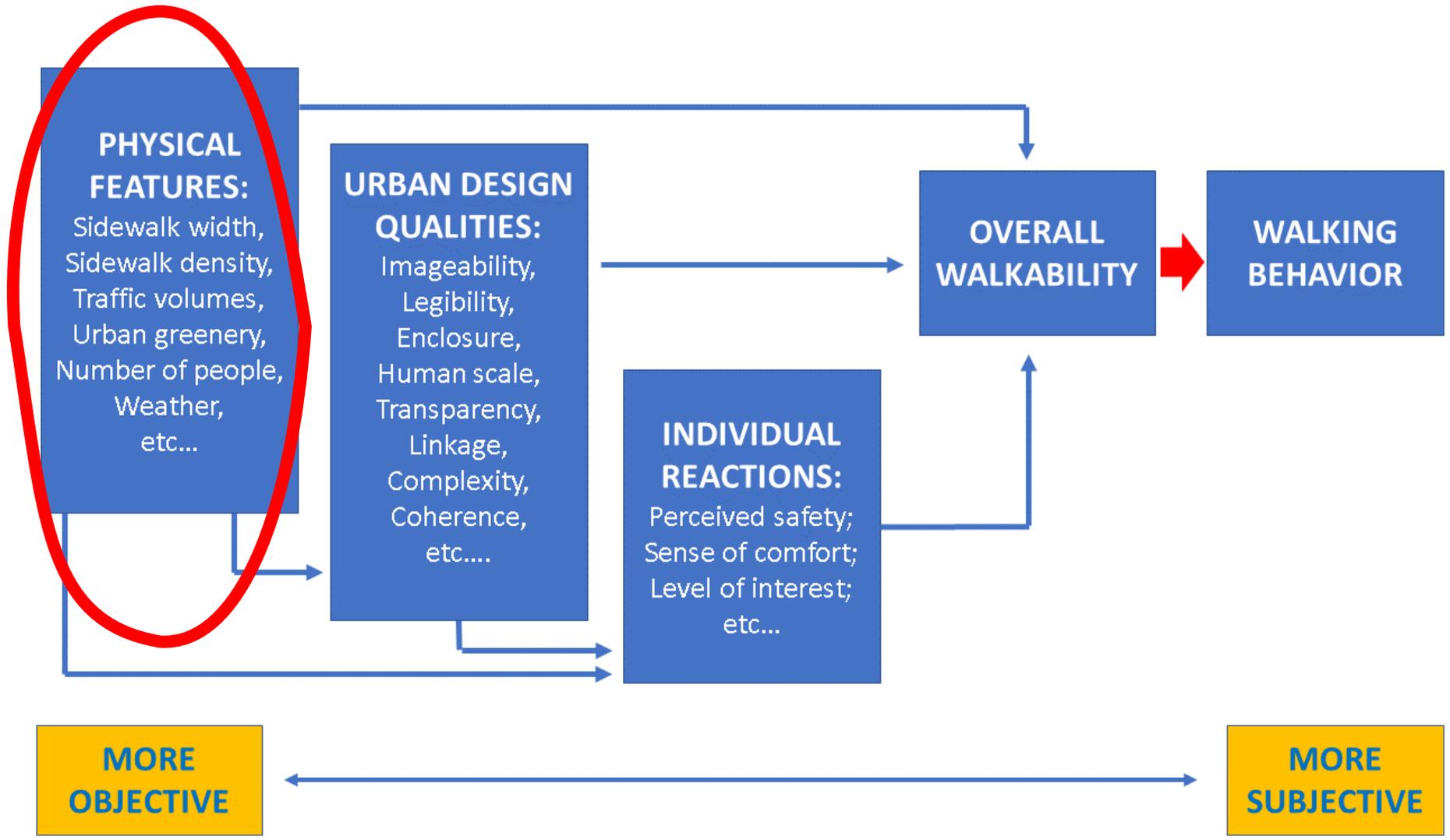
Different methodological approach: different results – case of Gdynia (Poland)

Research	Sample size	Method	Modal split [%]				Remarks
			Public transport	car	cycling	walking	
Transport behaviour and preferences of Gdynia's citizens (2024)	2038	In-house standardised interview	34,6	50,2	2,4	12,8	Calculation based on the number of trips (walking trips above 500m).
Transport behaviour of citizens of the Metropolitan Area of Gdansk-Gdynia-Sopot (2022)	795	CAWI	35	34	8	22	Data refers only to citizens of Gdynia. Calculation based on travel time.

Modal split: although not precise it provides a look into trends – case of Warsaw (Poland)



Modal split: Holy Grail or the top of the iceberg?



Source: R. Ewing, O. Clemente: *Measuring Urban Design. Metrics for Livable Places.* Island Press, 2013.

Keeping it simple: Suggested M&E Indicators

1 Walking

- Pedestrian Injuries: Number of pedestrians injured in accidents Target: -30% by 2030
- Satisfaction: % of residents satisfied with walking conditions Target: 85%

2 Cycling

- Cycle Path Length/Density: km per km²; % of road network
- Cyclist Safety: Number of incidents/injuries Target: -30% by 2030
- Travel Time Ratio: Cycling vs Car Target: Reduce gap

3 Public Transport

- Share of Trips by PT: Modal split, %
- PT Users: Annual ridership
- Accessibility: % of residents within 5–10 min walking distance to stops
- Bus Stop Quality: % with shelters
- PT Supply: Vehicle-km per capita; buses per 1,000 residents
- Fleet Modernisation: Share of zero-/low-emission buses (%)
- PT Safety: Accidents involving public transport



Summary

- M&E – a multitool in the sustainable urban mobility planning;
- Critical mistakes to be avoided by careful planning and indicator design;
- Focusing on the most critical indicators is efficient and easier to political dialogue (citizens and politicians);
- Barriers to precise measurement shall not limit the monitoring process.
- Indicator Selector Tool to be used today:

<https://bsr-sump.eu/tool/>





Thank you!

Aleksander Jagiełło

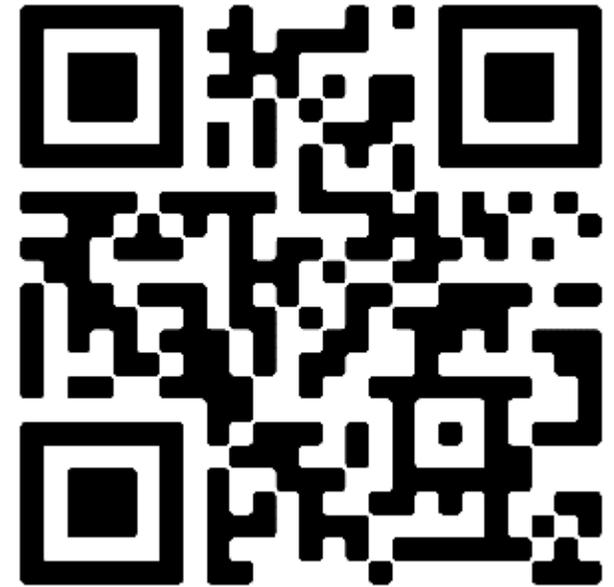
Anna Michalska-Szajer

Marcin Wołek

aleksander.jagiello@ug.edu.pl

anna.michalska-szajer@ug.edu.pl

marcin.wolek@ug.edu.pl



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