Citizen Activation Guide: Promoting Year-Round Active Mobility (YRAM)

For the active planners

Tallinn University of Technology (TalTech), Department of Business Administration
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SMART GREEN MOBILITY BATS

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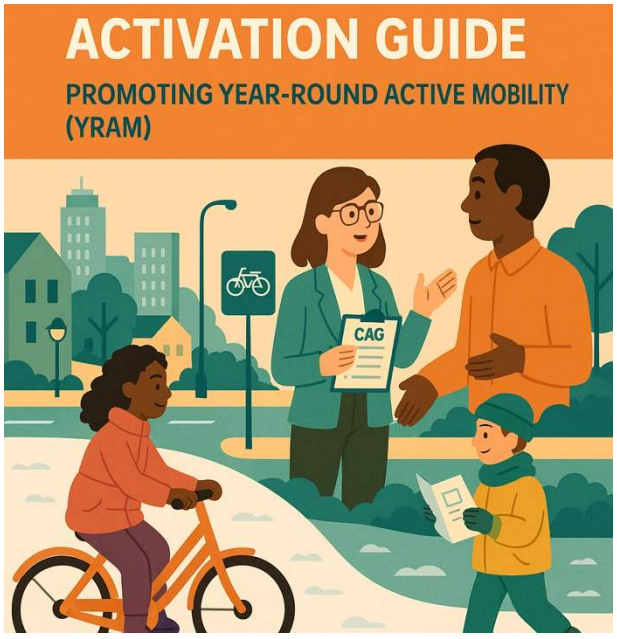
**Illustrations used in the Guide are from Freepik, AI-generated or BATS project own photos*

Citizen Activation Guide user manual

Active mobility is a crucial part of a sustainable, healthy, and vibrant urban environment. By focusing on walking, cycling, public transport, and shared car use, municipalities can reduce reliance on private cars and contribute to environmental goals, as well as achieve cost-saving and health benefits. However, traditional mobility and road planning still largely cater to cars, with planning for cyclists and pedestrians usually geared towards daylight and warmer weather conditions.



The Citizen Activation Guide (CAG) is a comprehensive framework designed to help various civil servants responsible for YRAM (working on urban planning, mobility, or transport-related issues) to promote Year-Round Active Mobility (YRAM) by systematically engaging all local people, including citizens and others. It aims to create a sustainable and health-conscious community through informed planning and strategic citizen involvement. It provides practical steps for planners to engage residents in maintaining active mobility year-round, especially during colder and darker months.

The guide (and supported by other toolkits developed in BATS framework) gives practical knowledge on organizing the activities and facilitating cooperation within and outside the organisation, collecting and analysing relevant data and giving practical examples of existing best practises. Most importantly, the guide highlights the importance of creating engagement based on the real needs and barriers of the defined target groups or *personas*.

The guide consists of three main components: WHY, TO WHOM, and HOW. These components form the foundation for understanding the purpose, target groups, and methods for engaging citizens in YRAM activities. The CAG Canvas helps planners focus systematically on WHY (the need for YRAM), and HOW (engagement), ensuring a well-structured and knowledge-based approach. This guideline helps planners to analyse current challenges and opportunities, to identify citizen motivations and barriers as well as to create tailored engagement that can lead to sustainable active mobility, even during challenging seasons.

Each of these components (WHY, TO WHOM, and HOW) is described in detail with examples in the guide.

The Citizen Activation Guide (CAG) and template for planners consist of three components:

WHY to engage the local people and promote YRAM. This section focuses on explaining the importance of YRAM and why engagement is crucial. It provides the context and background information needed to inspire planners to act.

There are three sub-components within this section:

- Benefits of YRAM, including political, environmental, health and cost-saving benefits, YRAM delivers a range of positive outcomes that make it a valuable goal for any community
- Current situation and activities related to both AM and YRAM in the area
- The purpose and goal for engagement in the area

TO WHOM the engagement actions are targeted to. Understanding target groups is critical to designing effective engagement. This section involves guidance on analysing peoples' needs and motivations and creating *personas* to guide outreach.

- Evaluation and analysis of the peoples' needs, motivation and barriers for YRAM
- Creating *personas* for enhanced engagement.

HOW to engage and nudge the local people. This section aims to guide how to effectively engage people, focusing on **participatory and nudging approaches**, helping the planners to conduct the selected approach by using the CAG Canvas.

- Selection of applicable / suitable approach (participatory and/or nudging)
- Conducting a campaign
- Collection of feedback and analysing the effectiveness of the actions

The CAG Canvas is a tool to help planners prioritise understanding the "why" and analysing "to whom" before developing an engagement plan and executing actions. This systematic, knowledge-based approach is crucial for effective engagement, leading to increased year-round active mobility. Additionally, evaluating the effectiveness of implemented activities is an essential component of the process. This Guide also incorporates and recommends the approach from BATS Monitoring Guidance, developed by Gdańsk University of Technology, to support effective monitoring and evaluation.

CAG Canvas: First take time to focus on why and to whom -> HOW

WHY? Fill out and analyse

What is the current AM and YRAM situation in your area?
What other YRAM-related processes or strategies are currently in place in your area?
Why does your city/area/(pilot)site need citizen engagement?
What is the goal?

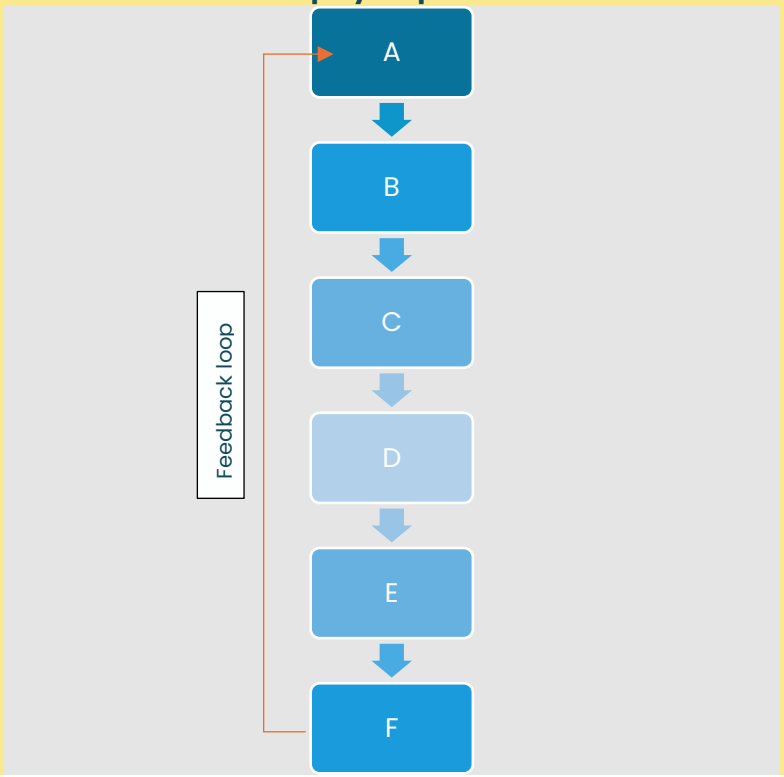
TO WHOM?

Survey, interviews, focus groups etc -> Personas

HOW?

Approach selection: Participatory and/or nudge

Execution of action step by step



Comments:

Key components of the Citizen Activation Guide

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WHY

The transport sector alone is responsible for up to 30% of household emissions and its impact is expected to grow in the future *(Lehner et al, 2016)*. The challenge is to coordinate the mobility transformation intelligently step by step and in a well-balanced way e.g., only if alternatives to the car are strengthened can restrictions on car traffic work. This requires long-term, forward-looking, thematically comprehensive decisions that are coordinated between the governance, strategic, tactical and operational levels.

Year around active mobility (YRAM) is a multi-level concept that addresses environmental, health, economic, and social aspects of mobility. The governance and strategic levels are concerned with the purpose and aim, tactical level explains how to achieve goals through establishing procedures, and the operational level ensures what is needed to be done to achieve objectives.

The evaluation of the current situation is crucial as the starting point for planning and creating an engagement activity. Understanding why it's important to engage residents in active mobility helps shape effective strategies. YRAM offers numerous benefits, both for residents and local governments, such as reduced healthcare costs and improved public health. Besides the direct impacts, there are secondary impacts in relation to improved quality of the natural and built environments *(Mladenović, 2024)*. This section provides deeper insight into the importance of promoting YRAM and its interventions, and how this understanding can inform and shape the planning process from the very beginning.

What is YRAM and why is it important

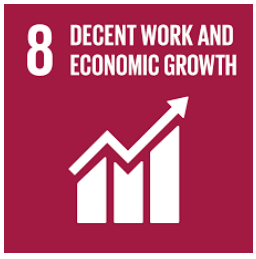
Year-round active mobility (YRAM) typically refers to the practice of using non-motorized modes of transportation (such as walking or cycling) throughout the entire year, regardless of the weather or season. This concept is often associated with efforts to promote sustainable transportation and reduce reliance on cars and other motorised vehicles.

As the key challenges for YRAM are related to lower surface friction, direct bodily comfort and reduced visibility *(Mladenović, 2024)*, cities must invest in infrastructure that supports active mobility year-round for YRAM to be truly effective. This includes ensuring **well-lit, safe paths and intersections, implementing heated paths in snowy regions, and ensuring efficient drainage to prevent waterlogging**. Additionally, **regular monitoring and efficient maintenance of roads**, particularly in winter, is crucial to keep paths accessible and safe. Also, **sufficient bicycle parking network and information sharing** is needed *(Mladenović, 2024)*. By addressing these core infrastructure needs, cities can create a more sustainable, healthy, and resilient urban environment that encourages active mobility in all seasons.

YRAM has many political and policy benefits. Governments and advocacy groups often play a role in promoting YRAM through policy initiatives, public awareness campaigns, and funding for infrastructure projects. YRAM interventions can gain broad public and political support due to their clear benefits in health, environment, and cost savings.

Also, the alignment with the **Sustainable Development Goals (SDGs)** should be important factor for policy makers: YRAM supports key SDGs, for example encouraging active mobility reduces public health burdens by preventing lifestyle diseases such as heart disease and obesity, contributing to SDG 3 (Good Health and Well-being) and by reducing transportation and healthcare costs, YRAM supports SDG 8 (Decent Work and Economic Growth).

In more detail how increased rates of Cycling helps to achieve Sustainable Development Goals *(United Nations, Link)*:

	*Cycling generates healthy and non-air-polluting lifestyles. The physical activity cycling generates reduces heart diseases and other negative impacts of sedentary lifestyles. Air quality and road safety improve when individual motorized transport is replaced by cycling. Creating safe conditions for cyclists contributes to reducing the number of global deaths and injuries from road traffic accidents.*
	*Cycling improves the energy efficiency of transport systems as it uses renewable human power in the most efficient way to move people and goods, and e-cycling offers access to the use of very efficient e-mobility technology. In addition, cycling offers a good solution for the first and last miles in combination with public transport and logistic systems. Good conditions for cycling gives individuals access to an energy efficient and affordable transport mode.*
	*The cycling industry sector, including services and cycling tourism, delivers products and services for sustainable, inclusive transport of people and goods as well as sustainable tourism and healthy leisure activities. The cycling sector creates more jobs for the same turnover than any other transport sector. For example, per million euro of turnover, bike manufacturing creates 4.89 full time jobs, more than the air and spacecraft industry (3.9 jobs) and several times more than the car industry (1.63 jobs per million Euro of turnover).*
	*Cycling enables people to switch from the use of individual motorized transport to a combination of active mobility (walking and cycling) and public transport. More people cycling more often makes it easier for governments to build resilient infrastructure and sustainable transport systems for economic development and human well-being, with a focus on affordable and equitable access for all.*
	*Increased cycling makes cities and human settlements more inclusive, safe, resilient, and sustainable as cycling is affordable, safe, non-polluting, healthy, and promotes a sustainable economy. On the one hand it is largely independent from complex high-tech technology and therefore an extremely resilient mode of transport. On the other hand, modern communication and e-cycling technologies integrate cycling into Intelligent Transportation Systems of cities. The higher the modal share of walking, cycling and public transport the more sustainable the transport system is.*
	*The bicycle is a symbol for decarbonizing transport and societies; it offers the possibility for immediate climate action. Governments at all levels can take action by integrating cycling into their climate action policies, strategies, education and awareness-raising.*

In addition, it is evaluated that cycling contributes to SDG 1 No poverty, SDG 2 Zero hunger, SDG 5 Gender equality, SDG 9 Industry innovation and infrastructure, SDG 12 Responsible consumption and production and SDG 17 Partnership for the Goals.

YRAM plays a critical role in achieving sustainable urban development, aligning with the Sustainable Development Goals (SDGs).
It addresses environmental, health, and economic challenges, providing planners with evidence-based arguments to convince stakeholders, including employers, politicians and policymakers *(Figure 1).*

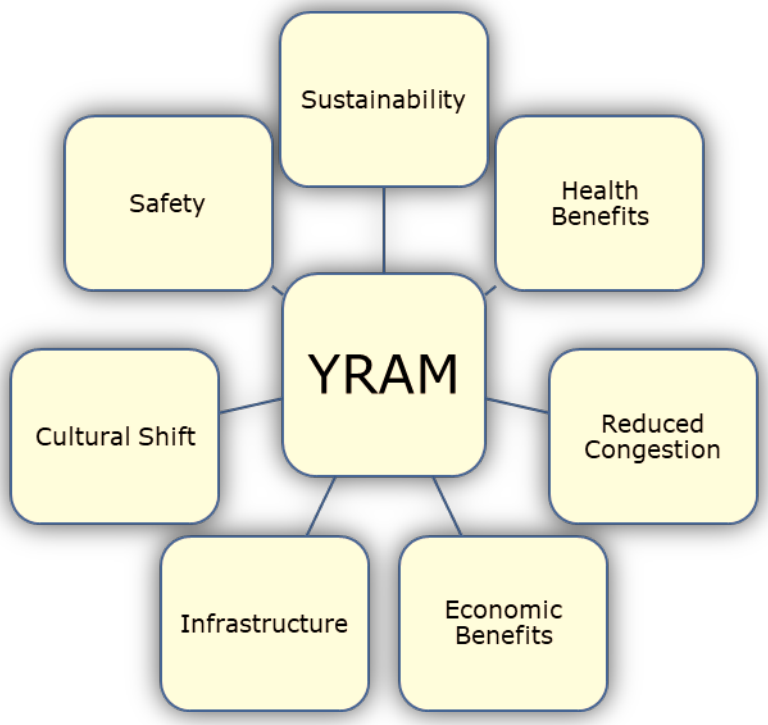


Figure 1. Key points related to YRAM

Sustainability: Year-round active mobility (YRAM) is seen as a sustainable and environmentally friendly mode of transportation *(Duong, 2024).* It reduces greenhouse gas emissions and helps decrease air pollution, contributing to a cleaner and healthier environment *(Glazener et al, 2022).*

Health Benefits: Walking and cycling are forms of physical activity, and year-round active mobility can contribute to improved public health *(Duong, 2024).* It provides opportunities for exercise, which can help reduce the risk of various health issues, such as obesity and cardiovascular diseases *(Sallis et al, 2012).* Health benefits and environmental protection play an important role in the concrete message of the effective nudges *(Junghanns, 2024).*

Reduced Congestion: Encouraging people to use active modes of transportation can alleviate traffic congestion in urban areas, leading to more efficient and quicker commutes for everyone *(Meyer, 1997).* Which in return results in reduced number of accidents and increased accessibility.

Economic Benefits: Year-round active mobility can lead to cost savings for individuals and communities *(Kahlmeier et al, 2020).* Walking and cycling are generally more affordable than owning and maintaining a car *(Gössling et al, 2019).* Additionally, investments in pedestrian and cycling infrastructure can lead to increased economic activity in the form of tourism, retail, and other businesses *(Cavill et al, 2008).* For the employers increased active mobility results in direct economic benefit from decreased costs on employee's health and productivity raise.

Infrastructure: For year-round active mobility to be successful, cities and communities must invest in infrastructure that supports walking and cycling in all weather conditions *(Duong, 2024).* This includes well-maintained sidewalks, bike lanes, and safe crossings. In regions with harsh winters, this may involve snow removal and other adaptations *(Nordgård, 2024).* It is essential to establish better connections between neighbouring areas and different types of transport to enable an increase in active mobility.

Cultural Shift: Promoting year-round active mobility often requires a cultural shift in the way people think about transportation *(Xin, 2024).* It involves changing attitudes and behaviours to make walking and cycling more attractive and convenient options *(Gatersleben et al, 2007).* YRAM fosters stronger, more connected communities by encouraging face-to-face interaction and creating safer streets. By having safer streets there are additional social and community benefits, such as increased social interaction, because pedestrian-friendly environments promote social interactions, creating a stronger sense of community and belonging. Enabling also better inclusivity and accessibility *(Plowden, 2019).* Efforts to encourage YRAM should consider the needs of all members of the community, including those with disabilities, elderly individuals, and children. Inclusivity in transportation planning is essential *(Salehi et al, 2024).*

Safety: Ensuring the safety of pedestrians and cyclists is crucial. This can involve different measures to make streets safe for everyone, measures such as traffic calming, e.g. reduced speed limits and dedicated bike lanes, improved signage, and public education campaigns to raise awareness about sharing the road *(WHO, 2023).*

Citizen activation for behaviour change

Activation of citizens aims at designing and implementing actions that triggers a change in behaviours of the targeted population group. For a person to engage in a behaviour (B), they must have the capability (C), opportunity (O) and motivation (M) to perform that behaviour. Behaviour change requires modifying at least one of these components (*Michie et al, 2014*) .

- **Capability** refers to a person's psychological and physical ability to engage in a behaviour.
- **Opportunity** refers to the external factors – both physical and social – that enable the behaviour. Physical opportunity includes the environment where the behaviour occurs, as well as resources such as money or time. Social opportunity involves the influence of significant others and broader social networks.
- **Motivation** includes all internal processes that trigger or inhibit a behaviour, ultimately determining whether a person performs a particular behaviour over other competing behaviours.

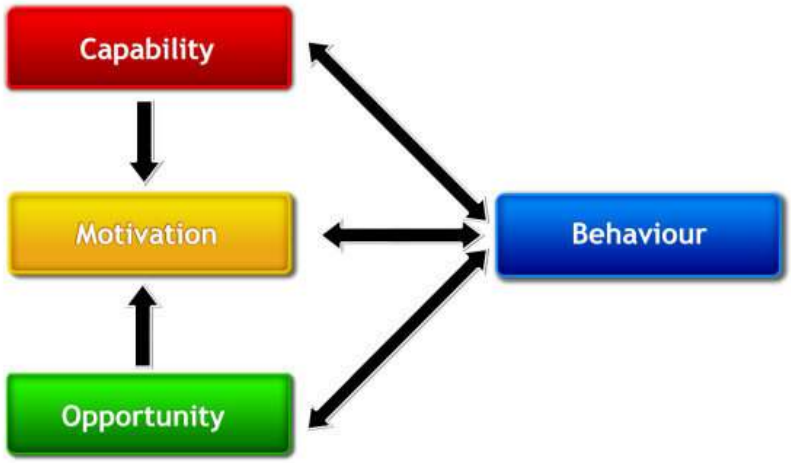


Figure 2. The COM-B system - a framework for understanding behaviour (Michie et al, 2014)

The COM-B components interact through positive and negative feedback loops, creating dynamic systems of behaviour. For example, a person following a well-structured cycling program may feel more capable of riding longer distances or tackling more challenging routes. This increased confidence and ability can inspire them to cycle more often, further boosting their motivation. However, if someone lives in an area with heavy traffic, poor road conditions, or a lack of designated bike lanes, their motivation to cycle may decrease.

COM-B can be used in combination with the Behaviour Change Wheel *(BCW – Figure 3)* to identify effective intervention functions and relevant policy categories *(Michie et al, 2014).*

By combining COM-B with BCW and Behaviour Change Techniques (BCT) taxonomy, planners can: identify specific behaviour barriers using COM-B; select effective intervention strategies through the BCW, and implement targeted behaviour change techniques using the BCT taxonomy. This combined approach helps to maximize the impact of interventions on behaviour.

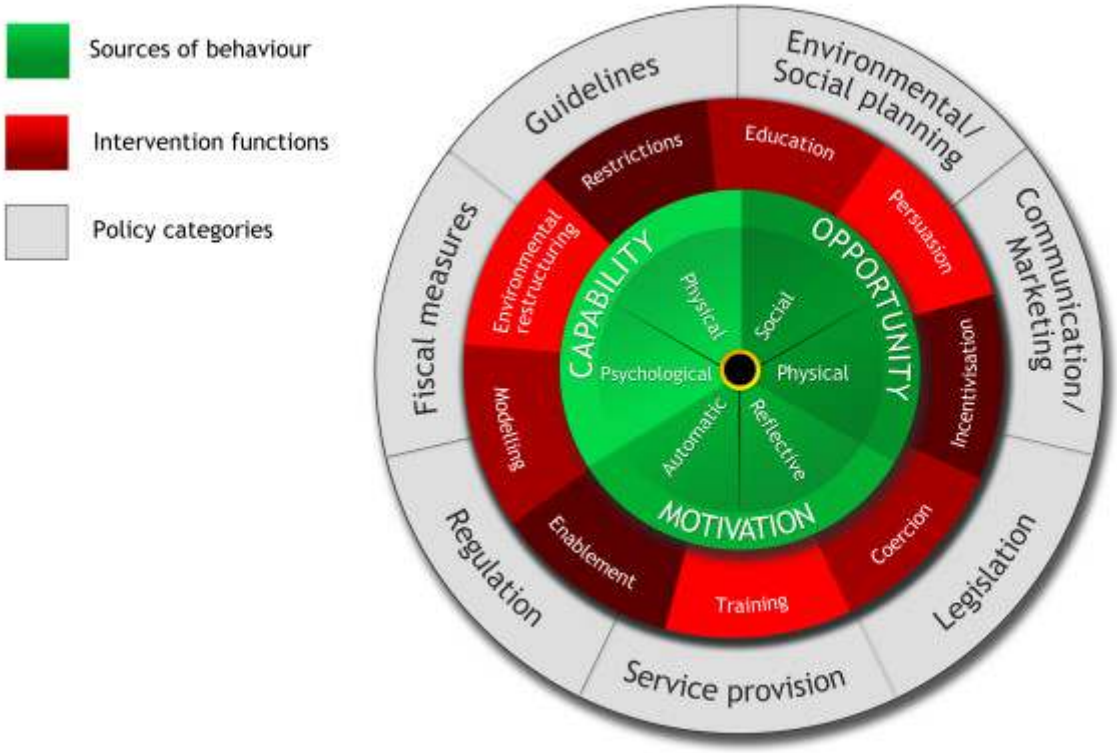


Figure 3. The Behaviour Change Wheel (Michie et al, 2014)

The BCW is a framework designed to help identify the most appropriate intervention functions and policies to support behaviour change. **By using the COM-B model to assess Capability (C), Opportunity (O), and Motivation (M), planners can identify specific barriers and enablers.** The BCW then provides guidance on selecting relevant intervention functions—broad strategies aimed at modifying these barriers or enablers.

Segmentation or clustering of people with similar behaviour, or with shared capabilities, opportunities, and motivation, can be explained through the concept of ***persona*** – a fictional yet representative character of a specific group of people within the urban mobility system *(Vallet et al, 2020; Wybraniec et al, 2024)*. This concept is elaborated further in the following „To Whom" section and in BATS YRAM toolkit.

TO WHOM

This section focuses on analysing residents' needs and motivations and developing personas as descriptive models representing the mobility behaviour and motivations of real people. Additionally, it provides an overview of various data collection methods, helping to determine which data is most relevant for analysing the current active mobility situation. It also explains how to analyse this information and utilize it to target different user groups, specifically the systematically identified personas (a mental image).

Understanding the target groups is crucial for designing effective YRAM engagement. This involves analysing resident's needs, motivations, and barriers to create personas. It is essential to assess what encourages people to walk or cycle and to identify obstacles, such as challenging weather conditions. Additionally, using data to develop personas representing different community segments, also those whose voices are usually less heard, allowing creating tailored actions for more successful engagement.

Application of Data Collection and Analysis Tools in Active Mobility Planning

Data collection and analysis are essential for effective active mobility planning, particularly for initiatives like YRAM *(Tran et al, 2021).* Both quantitative and qualitative methods such as surveys, interviews, and focus groups- are widely used to gather insights from citizens and stakeholders. However, the full potential of these methods is often underutilized due to various challenges.

CHALLENGES in data collection and analysis			
The lack of clearly defined objectives	**Resource constraints**	**The misinterpretation of results**	**The lack of effective dialogue formats between municipalities, residents, and stakeholders**
It is one of the key challenges in active mobility data collection. When the goals of data collection activities are not well defined, it becomes difficult to gather relevant and actionable information, ultimately leading to ineffective data usage.	Such as limited budgets, time, and expertise. Restrict the scope and quality of data collection efforts. While collaboration with external research agencies could help address these challenges, it is often overlooked due to these limitations.	Local policymakers and stakeholders may struggle to fully understand the data, limiting its effectiveness in supporting informed decision-making. Furthermore, **data collection is often carried out as a one-time effort**, typically linked to specific campaigns, rather than as an ongoing process. This approach prevents the collection of longitudinal data, which is essential for tracking trends over time and making reliable comparisons.	It is a significant barrier. Without platforms for discussing the collected data collaboratively, its potential for informing decisions and fostering collective action is diminished.

The Citizen Activation Guide (CAG) aims to address these challenges by providing structured tools and methodologies for mobility planners.

These tools enhance data collection and analysis practices and ensure more effective stakeholder engagement in YRAM initiatives.

The Citizen Activation Guide (CAG) provides:

(1) **ready-to-use template for survey**, see example template in *appendix 1.* This template is tailored for gathering insights from citizens, focusing on YRAM-related behaviours and preferences.

(2) **template for citizens and stakeholder workshops** *(example in appendix 2)* and similar dialogue formats help facilitate discussions around collected data. This template aims to bridge the communication gap between planners, citizens, and stakeholders.

The CAG emphasizes that effective data collection tools should meet the following criteria to ensure usability and usefulness for both planners and respondents:

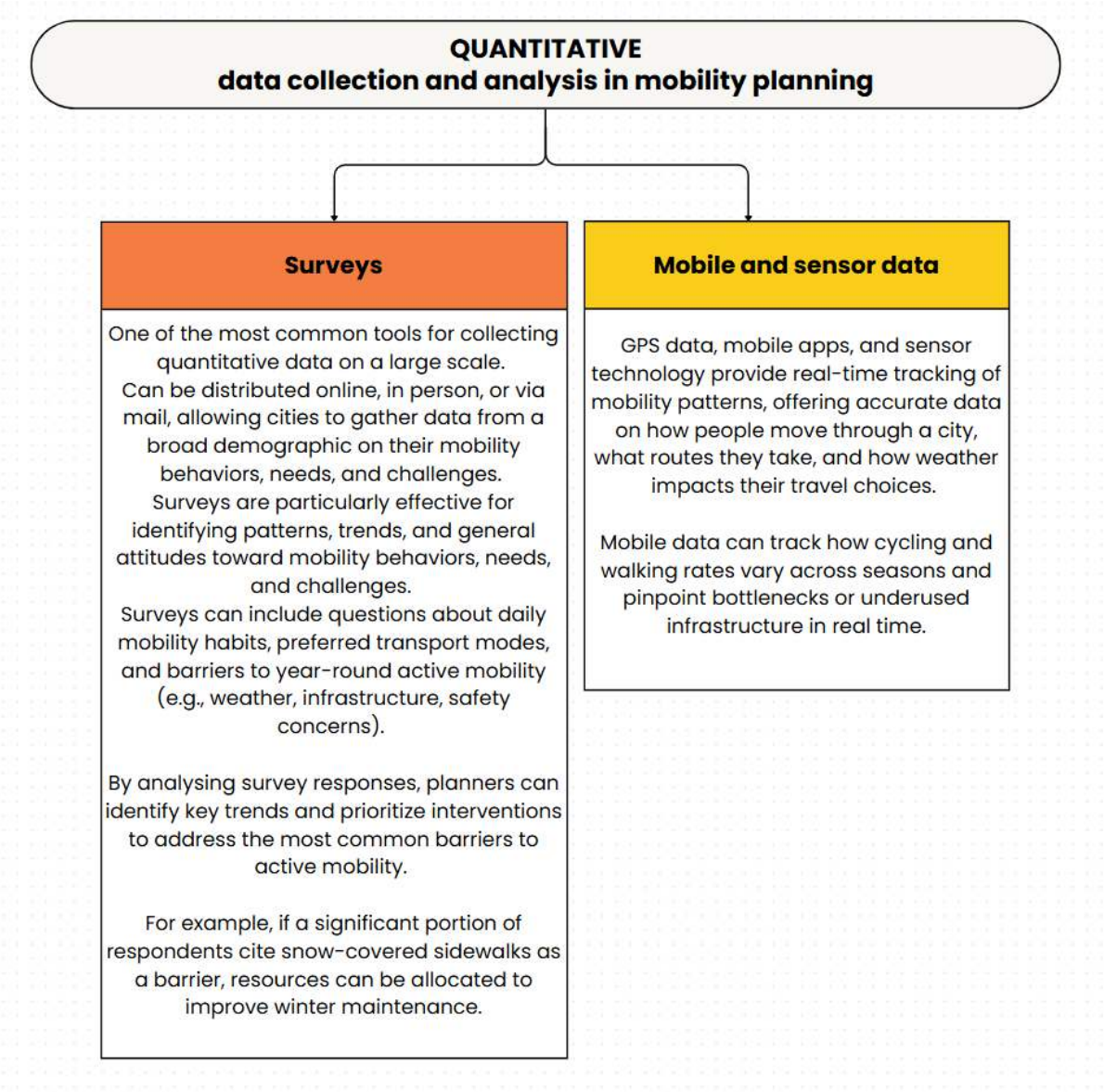
Understandability of the data collection instrument

- The tool (e.g. survey, interview guide, etc.) must be clear and easy for respondents to understand. Jargon or technical language should be avoided.

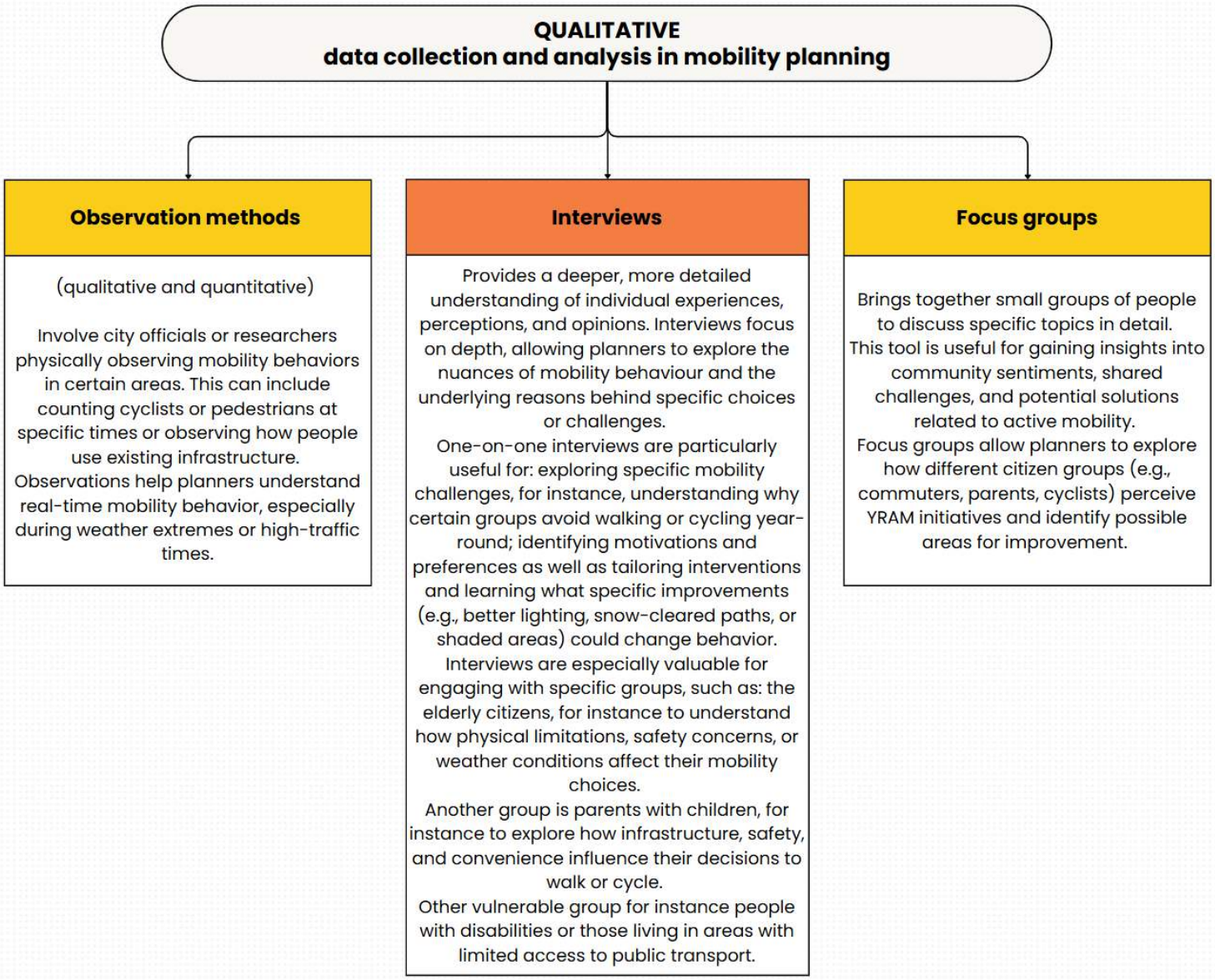
Usefulness for respondents

- The results should not only provide valuable insights for planners, but also be meaningful for respondents, ensuring that their participation feels valuable and impactful.

Main types of data collection tools

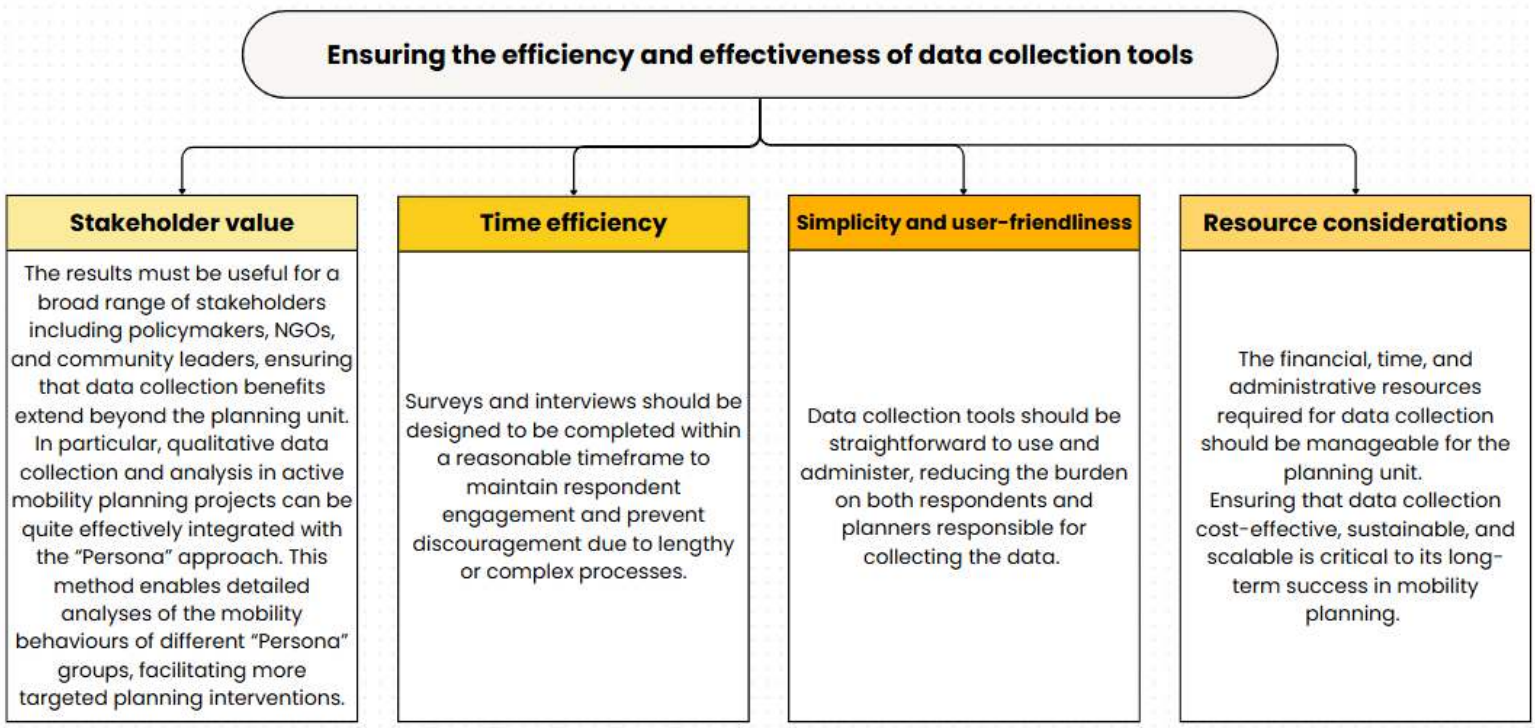


- Usually, different levels of quantitative data analysis are typically required in mobility planning projects. For communication activities involving citizens, policymakers, NGOs and the media, descriptive statistics are often sufficient. These statistics, supported by graphical illustrations (e.g. charts, figures, simple tables etc.), are a suitable approach for presenting survey results to these target groups. Standard office software programs such as Microsoft Excel is commonly used for this purpose due to its accessibility and ease to use.
- For internal mobility planning, advanced statistical methods such as Factor Analysis, Cluster Analysis, and Regression Analysis can provide deeper insights into mobility patterns and planning strategies. While some of these methods can be conducted in Excel, specialized statistical software such as SPSS or R (freely available) is often preferred for enhanced analytical capabilities.



***For qualitative data analysis**, such as interviews and focus groups, graphical representations (e.g., tables, figures) play a crucial role in summarizing and presenting findings. The depth of data analysis depends on the needs of the target group/s. For internal mobility planning, more detailed and in-depth analyses are typically required. At the same time, for stakeholder presentations and discussions, a more summarized approach is often sufficient. Various qualitative data analysis software tools are available, such as NVivo and MaxQDA. However, in many active mobility planning projects, standard office software such as Excel or Word may be adequate for organizing and analysing qualitative data (Næss, 2020, Garrott et al, 2024).*

By analysing interview data, planners can develop targeted strategies and campaigns that address the unique needs of different demographic groups, ensuring that interventions are inclusive and equitable. To ensure the efficiency and effectiveness of data collection tools specific criteria should be met.



When planning data collection for YRAM, active mobility planners must consider specific factors that are unique to this context.

A comprehensive approach should integrate both quantitative and qualitative data, addressing the diverse needs, barriers, and motivations of citizens, as well as the environmental and infrastructure-related challenges across different seasons.

Key considerations and examples for collecting data related to YRAM

Seasonal variations in mobility, because YRAM faces different challenges depending on the season.
Data collection should address how people's transportation choices shift with changing weather, daylight hours, and infrastructure availability.
Surveys and interviews should ask about mobility behaviour in different seasons—focusing on how extreme weather (snow, rain, heat) affects walking, cycling, and the use of public transport.

Data collection must assess **the adequacy of existing infrastructure**, including the safety of walking and cycling routes during all seasons.
This involves gathering feedback on the availability and condition of bike lanes, sidewalks, crossings, and lighting. It means that the tool should include questions that explore how infrastructure (e.g., lack of winter maintenance or poor lighting) affects people's willingness to use active mobility year-round.

Understanding the **motivation** and **barriers** that prevent people from using active mobility year-round is crucial.
Factors like perceived inconvenience, safety concerns, or lack of information can deter people from walking or cycling in certain seasons.
Therefore, there is a need to collect data on **both psychological and practical barriers**, such as fear of slipping on icy sidewalks or not having access to proper winter cycling gear.

YRAM data collection should consider diverse **demographics**, including age, gender, income level, and physical ability.
Understanding how different groups experience mobility helps tailor interventions to ensure inclusivity.
It is essential **to include demographic questions** and gather data on how mobility challenges differ between various groups, such as older adults, children, people with disabilities, or lower-income residents.

To track the effectiveness of YRAM interventions over time, data collection should include **longitudinal studies**.
This allows planners to monitor changes in mobility habits, infrastructure use, and citizen satisfaction across several years.
There is a need to establish ongoing data collection efforts that regularly evaluate YRAM outcomes.
Comparing data year-over-year will provide insights into the success of initiatives and necessary adjustments.

Personas approach in active mobility

Personas are descriptive models based on research data that represent the behaviours, motivations, and limitations of real people. They are used by designers, developers, and other stakeholders to better understand and engage with their target groups. *Personas* help ensure that design decisions are informed, justified, and tailored to meet the needs and expectations of end users *(Cooper et al, 2014).*

The concept of *personas* has roots in mid-20thcentury marketing and advertising. Marketers realised **that a one-size-fits-all approach was ineffective** for selling products and began segmenting audiences by demographics such as age, gender, income, race, ethnicity, and location. This allowed them to create more personalised messages that resonated with specific groups. However, the use of *personas* in design came about in the 1980s, when software designer Alan Cooper introduced the term to the design community. Cooper used *personas* to guide software development, ensuring that user needs were central to design decisions *(Braithwaite).*

In active mobility planning, particularly for YRAM, *personas* help planners create more effective interventions by understanding the specific needs of different user groups. By crafting detailed representations of users based on real data, planners can ensure that their actions **target the right people with the right messages.**

Personas enable planners to develop targeted activities, addressing specific barriers and motivations of different user groups, making interventions more effective. Additionally, *personas* help decision-makers relate to their audience, fostering empathy and a deeper understanding of user behaviours, leading to more relevant, user-centred solutions. Also, by using data-backed *personas*, mobility projects are more likely to meet user needs, **increasing the chances of success**.

Soft measures, such as campaigns, education, and social marketing, have been shown to produce moderate but significant effects in changing travel behaviour. However, these measures are not equally effective for everyone. Therefore, more targeted campaigns are needed. Research suggests that soft measures are more likely to influence citizens already inclined to change their behaviour. Personas can help identify these individuals, as well as those who may be more resistant, allowing planners to tailor their campaigns and educational efforts (Markvica et al, 2020). Travel behaviour research highlights the importance of understanding behaviour change. Personas make it easier to predict which strategies will resonate with different groups and can identify potential obstacles to behavioural change, helping tailor solutions for greater impact (Rasca et al, 2023).

Steps for creating *personas*

Creating personas requires a balanced approach that combines ***quantitative and qualitative data.*** *Relying solely on one type of data, particularly qualitative data, can introduce challenges such as high costs, lack of objectivity, and non-representative insights.*

The main challenges in creating personas based on qualitative data alone are: high cost, lack of objectivity and rigor, lack of scaling, non-representative data, and the risk of expiry or becoming obsolete (Salminen et al, 2020). To mitigate these risks, integrating both types of data helps produce well-rounded, accurate, and actionable personas.

In the "Persona Design Methodology for Work-Commute Travel Behaviour Using Latent Class Cluster Analysis" (*Rasca et al, 2023*) steps for creating personas are described followingly:

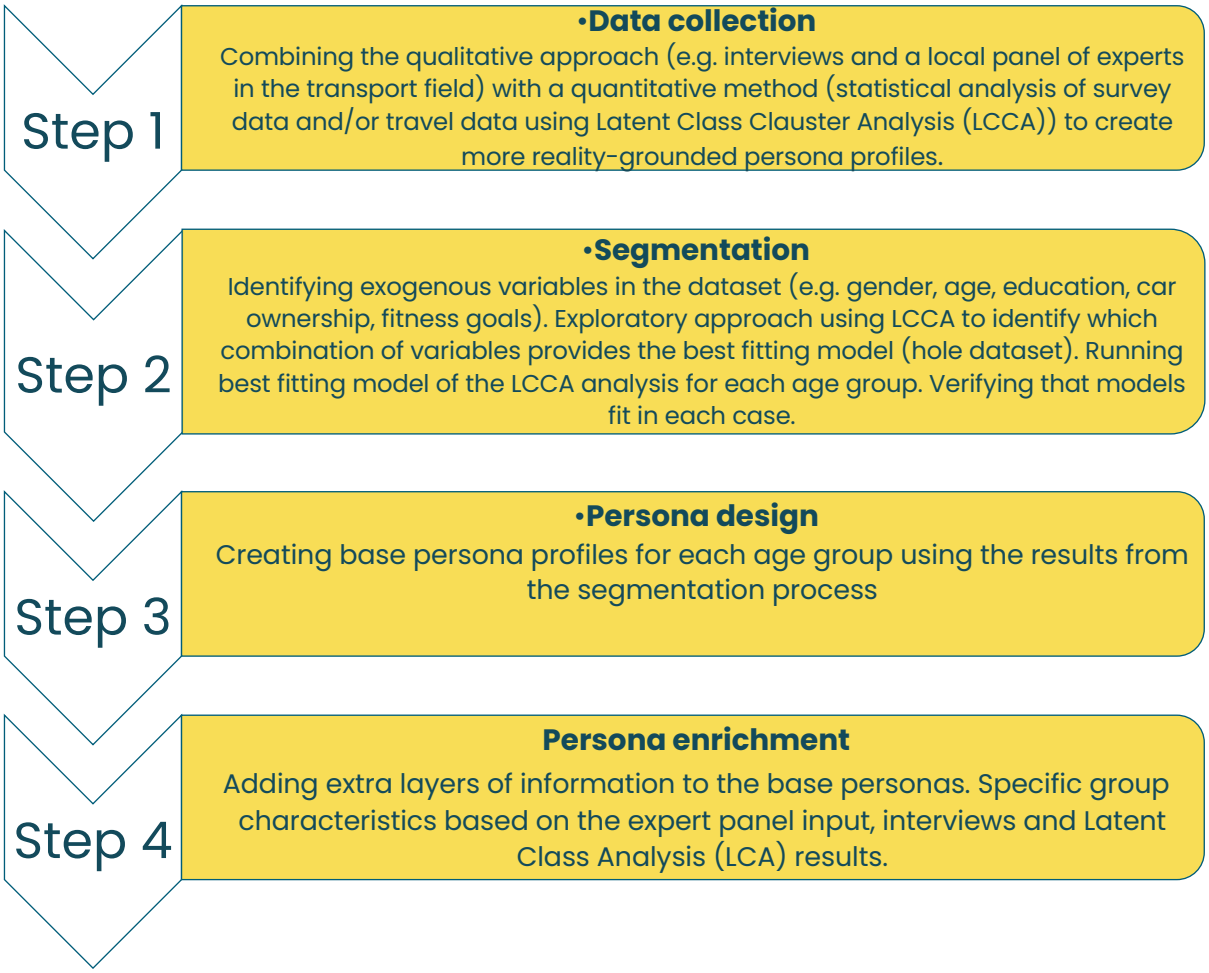


Figure 4. Steps for creating personas

LCCA is a statistical method used to group individuals (cases, units) into classes (categories) of an unobserved (latent) variable on the basis of the responses made on a set of nominal, ordinal, or continuous observed variables. In LCCA, the maximum-likelihood method is used to estimate the model parameters. Using travel survey data, which is often performed on a regular basis and available for low costs or even free in various countries and regions around the globe, the personas can be updated with minimum costs to ensure that they correctly represent the targeted population.

Persona **template**

For creating the persona, the following template could be used. The template is composed based on the COM-B model.

Image:	**Name:**	**Gender and Age group**	**Family status, Income, Education, Occupation**
Usual destinations and distances	**Existing everyday travel modes**	**Positive aspects of current travel experiences**	**Negative aspects of current travel experiences**
Desired intervention	**Capabilities**	**Opportunities**	**Motivations**

Figure 5. Persona template

Example of using persona methodology from the UK

The Department of Transport of the British Government (DfT) developed 12 different ***personas to reflect 9 groups of people to define whole population individual traits in segments*** *when using transport. Examples of the personas, segments of population, were young urban families, heavy car users, older and less affluent, comfortable empty-nesters etc.*

Personas provide a tool for the DfT to put the people and their needs at the heart of decision-making. ***Personas were developed through qualitative research techniques****.*

Phase 1 *of the study involved an online quantitative survey with sample of 5000 adults.*

In ***phase 2*** *a qualitative approach was adopted to develop personas for each segment. A three-stage data collection was employed, including onboarding interview, online diary lasting 9-days and in-depth interviews based on diaries and exploring opportunities for behaviour change in transport habits (DfT, 2023).*

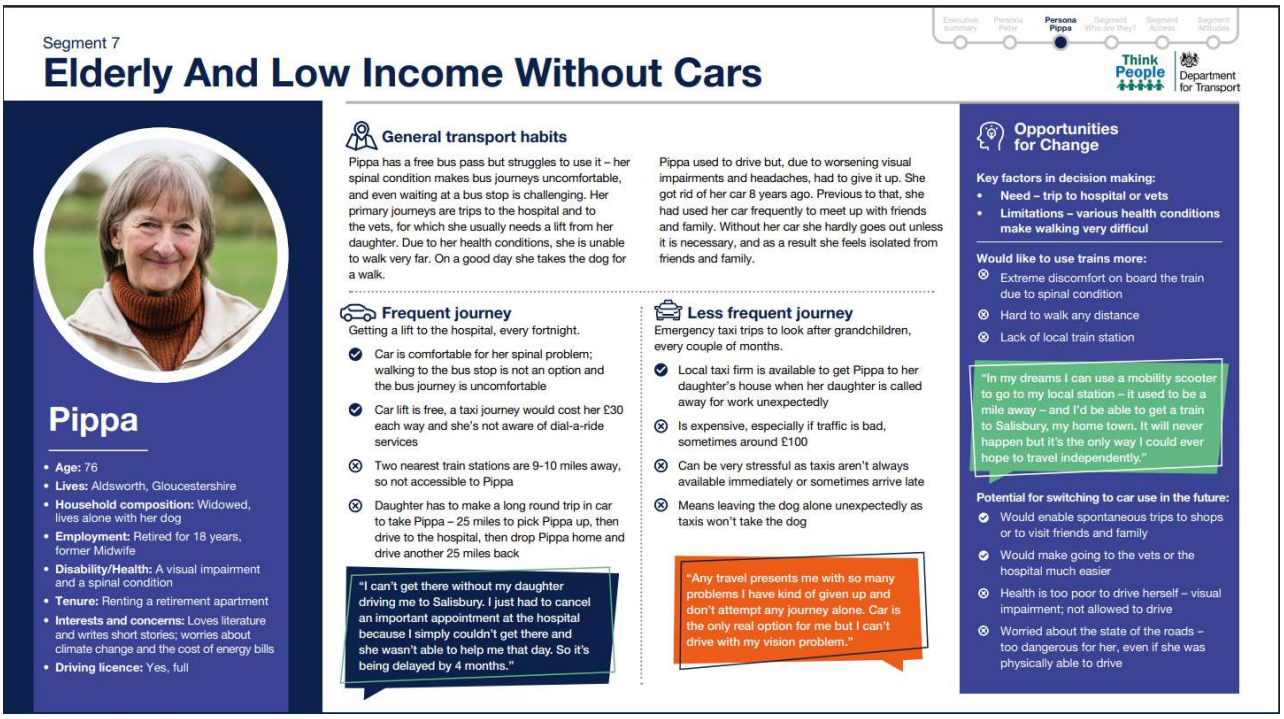


Figure 6. Filled Persona example from UK

HOW

This section introduces the basic components of **'HOW' to activate residents into YRAM**. It outlines the **essential steps** for setting up a **campaign** and provides a selection of approaches and techniques suitable for **engaging residents** and motivating their participation in YRAM.

This section provides guidance on using **participatory methods** and **nudging** to develop a strategy for advancing YRAM levels.

Nudging is a public policy approach that alters the context in which decisions are presented to residents, encouraging specific choices and influencing behaviour *(Thaler et al, 2022).*

Participatory methods engage local people, stakeholders including employers, and officials in an iterative process to collaboratively address shared problems.

While nudging and participatory approaches are distinct in their ethos and design – differing in their claims on knowledge and authority *(Einfeld et al., 2021)* – they can, with careful planning, be combined into a multi-stage strategy to achieve higher levels of YRAM.

How to make a campaign

Organizing a marketing campaign **begins with** setting the **campaign brief**. The more precisely the **objective is defined** and the necessary details for achieving it are thought through, the more likely the campaign is to deliver the desired results. **A clear and well-structured campaign brief** keeps all participants (marketing partners) on the same page, saves time, and helps maintain focus.

In the BATS project context, where activating children and young people are often in focus, the marketing campaign brief could look like this:

Campaign objective	***Encourage people to be more physically active. Clarification: The goal is to increase active mobility specifically during certain times of the year when people tend to be less active outdoors—such as during the dark and chilly seasons when being outside is not the preferred choice.***
Define the Overall Value Proposition of the Project	*What is the clear, perceivable benefit (value proposition) to the campaign's target audience?* *For example: Better health, a cleaner living environment, etc.*
Define the General Campaign Message	*For example:* *Walk yourself healthy and win prizes!* *Every step you take boosts your health, and by moving you collect activity points. Collecting points is easy – get off the bus one stop early and walk to school.*
Target Audience	*Primary target group: Children and young people* *Secondary target group: Teachers, parents, staff at educational institutions*
Campaign Period	*Autumn, October–November*
Campaign Scope	*For example:* • *Nationwide* • *Regional or location-based*
Media Channels Used	• *Direct communication with educational institutions – to create a supportive environment and integrate physical activity into the curriculum.* • *Direct communication with children and young people – through teachers and schools.* • *Social media advertising, media relations – to raise general awareness about the need for physical activity.* • *Advertising in the e-school environment – targeting both students and parents.* • *Other relevant channels.*

Market Context and Background Information	*Active lifestyle habits are developed in childhood. Parents and teachers play a significant role in supporting children's mobility. To build a year-round habit of physical activity, it's important to encourage movement especially during the darker, colder, and less active periods when people are more likely to skip it.*
Campaign Structure	*The campaign includes two message lines:* *1. Movement makes you healthy – A general campaign supported by media to raise awareness among schoolchildren and their support groups (parents).* *2. For the primary target group (children, youth): Move every day and collect activity points. Educational prizes will be raffled among the most active participants.* *For the secondary target group (parents, teachers): Support and encourage children to be physically active.*
Risks and Limitations to Success	*Parents or teachers may not provide enough support for children's physical activity.* *Expected Outcome* • *Short term: Active participation from the target group in the campaign* • *Long term: Increased awareness about the importance of physical activity* *Changes in behaviour patterns, development of regular movement habits*
Expected Outcome	*Short-term:* *Active participation of the target group in the campaign* *Long-term:* • *Increased awareness of the importance of physical activity* • *Change in behaviour patterns, development of regular movement habits*
Involved Partners	*Who needs to be involved in executing the campaign: typically, a creative agency, possibly a digital media agency, a research partner, etc.*

Target Groups and Messaging Plan

Target group	Message	Channel
Children (kindergarten and primary school)	*Walk part of the way or come to kindergarten/school by bike with your parents.*	*Morning school route game at school or kindergarten – during specific weeks of the campaign period*
Children (middle school)	*Get off the bus earlier and walk part of the way.*	*Mobile app or location-based tracking + step-collecting game*
Children/Youth (high school and university)	*Get off the bus earlier, ride a bike, scooter, etc.*	*Mobile app or location-based tracking + step-collecting game*
Teachers	*Be an active initiator and lead by example.*	*Step-counting game. Participation in the campaign with students.*
Parents	*Support your child in participating and help them earn rewards.*	*Information sessions via educational institutions, e-school advertising (in Estonia), etc.*

As the general logic of marketing activities suggests, **a campaign should be planned in phases:**

Campaign Phase	Objective	Metric
Awareness	*To ensure that the broadest possible target audience is aware of the campaign*	*Wide reach*
Consideration	*To provide a more detailed overview of the campaign and generate interest in joining*	*Clicks, website traffic*
Conversion	*To encourage participation in the campaign, guide and direct to the right information*	*High participation rate (overall campaign engagement, healthy kilometres, number of associated organisations and people, etc.)*

Figure 7. Campaign planning phases

Recommendations for Running the Campaign:

- **Overall Tactic:** Keep all phases of the campaign continuously active – start with the awareness phase but keep it running throughout the entire campaign to build recognition and support. Similarly, the consideration phase messages should remain active until the end, alongside communication focused on driving actual conversions. All three campaign phases should be active at all times.
- **Monitoring Deadlines:** Clearly define when media communication will begin – preparations must be made well in advance. Use reverse planning to calculate the timeline from the initial idea to a functioning message and finalized marketing solutions. This will provide a realistic timeframe for preparation.
- **Project Team:** Assign a dedicated project team and project manager. A strong focus should be placed on communication with campaign partners (e.g., educational institutions, which are often numerous in a single campaign).
- **Prefer Digital Materials:** Favor the use of QR codes or interactive digital applications over printed distribution materials.
- **Boost Engagement:** To achieve higher participation and engagement, it's beneficial to offer prizes and introduce competitive elements. Clearly define a **call to action**.
- **Measure and Optimize:** Monitor campaign performance and adjust messages and communication channels based on ongoing results.
- **Be Present in Everyday Environments:** Ensure visibility in natural, everyday settings (e.g., news platforms, various digital touchpoints – ads in e-school platforms, etc.).
- **Centralize Key Information:** Gather all important information about the campaign in a single dashboard – monitor key performance indicators and partner feedback (a crucial input for ongoing campaign optimization).
- **Gather Feedback from Participants:** Conduct surveys with participants to gather insights into which messages were most effective.

The WHY-TO WHOM-HOW framework applies both to the overall awareness campaign and to each smaller campaign within it.

The entire communication framework for activating children and young people could, for example, look like this:

<table>
<tr><th></th><th></th><th>Jan</th><th>Feb</th><th>Mar</th><th>Apr</th><th>May</th><th>June</th><th>July</th><th>Aug</th><th>Sept</th><th>Oct</th><th>Nov</th><th>Dec</th></tr>
<tr><td>Awareness</td><td>WHY</td><td colspan="12">Yearly active mobility makes you healthier and saves environment!</td></tr>
<tr><td rowspan="3">Consideration</td><td rowspan="3">TO WHOM</td><td colspan="12">Children/youth: you can be healthier by walking and cycling; it is cool to have bicycling licenses.</td></tr>
<tr><td colspan="12">Parents: you are responsible for helping your child develop the habit of being active. This campaign helps you to be responsible parent.</td></tr>
<tr><td colspan="12">Teachers: your teaching methods enable the child to be physically healthy. This campaign enables you to redesign your study program.</td></tr>
<tr><td>Conversion</td><td>HOW</td><td></td><td></td><td colspan="3">Bicycling licenses campaign</td><td></td><td></td><td colspan="3">“Collect the active movement points” campaign</td></tr>
</table>

Additional reading

Roaf, E., Larrington-Spencer, H., & Lawlor, E. (2024). Interventions to increase active travel: A systematic review.

Morfoulaki, M., Myrovali, G., & Chatziathanasiou, M. (2022). Exploiting Marketing Methods for Increasing Participation and Engagement in Sustainable Mobility Planning. Sustainability.

Anagnostopoulou, E., Bothos, E., Magoutas, B., Schrammel, J., & Mentzas, G. (2018). Persuasive Technologies for Sustainable Mobility: State of the Art and Emerging Trends. Sustainability.

Communication

Effective communication is key to engaging citizens *in active mobility initiatives. It ensures timely information, fosters trust, and empowers informed participation.*

Clear communication amplifies diverse voices, promotes collaboration, and builds shared understanding and ownership. Including communication in activation guides creates transparency and inclusivity, leading to innovative and sustainable mobility solutions (Patel et al, 2024).

Communication tools	
Direct communication	Involves face-to-face or one-on-one interactions to foster trust and build strong connections. Tools include community meetings, workshops, focus groups, and public consultations. These methods allow for in-depth discussions, immediate feedback, and the opportunity to address concerns directly, making them highly effective for engaging citizens in active mobility planning
Media channels	Crucial for reaching a wide audience and raising awareness about active mobility initiatives. Traditional media tools include press releases, newspaper articles, radio or television announcements, and video clips. They can be used to inform citizens about upcoming projects, events, or consultations while shaping public opinion and generating interest in active mobility goals.
Online communication	Digital platforms provide accessible and interactive ways to engage citizens. Tools include social media campaigns, email newsletters, dedicated project websites or sections, online forum, a planning blog, online surveys and social media. These platforms can host all relevant documents, such as maps, administrative acts, and correspondence and allow planners to share updates, gather feedback, and reach diverse audiences efficiently. Online tools also enable real-time engagement, such as live Q&A sessions or forum for discussions, ensuring broader participation in mobility planning *(Papageorgiou et al, 2019)*.
Presentation room	Dedicated spaces for citizens to review planning materials, provide feedback, and learn about active mobility initiatives that should be created. These spaces, located in accessible venues like community centres, libraries, or schools, offer a comfortable environment for public discussions or consultations with specialists. Reader-friendly printed materials and posters can be displayed in these spaces and at key community locations, such as libraries or shops, to ensure widespread access. In areas with poor transport links or many elderly residents, local households could temporarily host planning materials or discussions to involve more residents. This approach enhances accessibility, inclusivity, and citizen engagement in active mobility planning.

Participatory approaches

Citizen participation can be part of different stages in the YRAM interventions. Residents and other stakeholders should be engaged already **in the planning process of the whole intervention** (changes in the infrastructure or other). They should be consulted also in the phase of setting up citizen activation activities after the physical reconstruction has been completed.
Depending on the scale of the planned intervention, and local legal context, citizen participation is usually required by the law in the spatial planning process of changing active mobility infrastructure.
Nevertheless, engagement of the residents or other stakeholders into the "softer" process of setting up resident activation campaigns can bring decisions better grounded on the habits, needs, and expectations of the **actual users** of the created possibilities – **local residents.**

This part of the guide will help the reader to understand how to position YRAM citizen activation plans based on the degree and nature of participation, along a continuum from the passive to more active engagement

(so-called citizen participation ladder, originally proposed by Arnstein, 1969, with later advancements by many authors, e.g. see OECD 2022, Bishop 2015):

In this guide, the levels of citizen participation are explained as follows:

- **Informing**: A one-way relationship where public authorities produce and deliver information to citizens or other stakeholders *(for example, via websites or social media, information posters or leaflets, guided tours, etc)*
- **Consulting**: A two-way relationship in which citizens have the opportunity to provide feedback to public authorities, and public authorities to respond. This presumes a prior definition of the issues and information to which feedback is being sought. The final decisions will be made by the public authorities considering the information gathered from the public. In the context of citizen activation campaigns for YRAM, this might mean organizing public meetings, surveys, focus groups, workshops, or using online channels with the purpose of collecting as well as considering the feedback to the planned or implemented interventions supporting active mobility.
- **Engaging in dialogue**: in this case, citizens or other stakeholders are given the opportunity and necessary resources (e.g., information, data, and digital tools) to collaborate or co-create throughout all phases of the project, from designing the approach to delivery. For citizens activation in YRAM this might mean engaging citizens or other stakeholders with the aim to co-create the YRAM interventions and citizen activation campaigns together with them and their knowledge on local mobility cultures and practices.

Figure 8. Levels of citizen participation

While informing assumes a relatively passive role for citizens, consulting and engaging provide citizens or other stakeholders with more control and power over the decisions and outcomes. However, it is important to emphasize that the boundaries between the levels are fluid and none of these levels is ultimately better than others. Rather, it is the question of appropriateness to the purpose and availability of resources that should guide the decision between different approaches. While setting up collaborative processes, careful consideration of the scope of engagement ("what can be done/promised"), organizational capacity, and organizers' commitment to the outcomes are needed *(Bishop, 2015).*

How to use participatory techniques

Following table provides a brief overview of selected participatory methods and techniques. These methods can be effectively used in planning active mobility interventions while also serving as opportunities to communicate with various end-user groups—such as residents and stakeholders—and gather their feedback for evaluation. When setting up an active mobility campaign to promote YRAM, it is beneficial to go beyond one-sided information provision (e.g., advertising) and incorporate more inclusive engagement strategies. Methods are described in more detail in the next section.

Method	Benefits	Limitations	Resources needed
Focus group ***(linked to full description below)***	Useful for uncovering issues, understanding underlying values and attitudes, testing consensus, and identifying how people discuss an issue; provides in-depth insights, allows direct interaction among participants	Time-consuming, requires careful moderation, and lack statistical validity, making them unsuitable for predicting how many people in the larger community will hold a particular position	Moderators, venue, audio-/video recording facilities, informational materials useful for prompting the discussion, refreshments
World Café	Inclusive, fosters creativity, encourages equal participation, builds consensus, and creates an informal atmosphere; supports YRAM activation by ensuring all voices are heard, valuing diverse perspectives, empowering citizens as co-creators, promoting collaboration among stakeholders, and generating creative solutions that reflect community needs	Time-intensive, requires skilled moderators, may be dominated by vocal participants	Large room, skilled moderators, tables, materials, time for setup and debrief, refreshments

Workshop / forum	Interactive, allows in-depth discussion, encourages active participation and collaboration, builds group understanding, adaptable to different group sizes	Limited reach, requires facilitation, time-consuming, can be dominated by a few voices, may require pre-registration, not always accessible to all	Venue, facilitators, materials (flipcharts, markers etc), breakout spaces, Audio/Visual equipment, refreshments
Online message boards / Online forums	Accessible to a wide audience and anytime, broad participation, a written record of discussion, engagement of geographically dispersed participants, and asynchronous participation; can engage geographically dispersed participants in a flexible way	May exclude those without internet or digital skills, can be less engaging, requires active moderation, risk of off-topic or negative comments	Online platform, with suitable affordances, web moderators, technical support
Online digital mapping	Visual and interactive, allows spatial input, engages participants through interactive tools. It can reach wide audience, makes public consultation more flexible and inclusive, and enables easy collection of geographically specific feedback. The data can be analysed and visualized, and location-based input makes participants' contributions more accurate and easier to understand	Requires digital literacy and may exclude some groups due to the digital divide and unequal access to technology. Data privacy concerns, the need for user training, and the perception that map-based input is technically demanding can also discourage participation.	Mapping software, digital tools, internet access, technical support, training materials

Public meeting	Transparent, allows direct feedback, builds trust, opportunity for discussion and Q&A, can be recorded for transparency, visible to media and stakeholders, relatively less resource demanding.	Can be dominated by vocal individuals, may become confrontational, and often do not represent all views. Scheduling conflicts, time or location barriers, and the risk of low attendance can further limit participation, and there is a risk of unbalanced representation and engagement among different stakeholder groups	Venue, Audio/Visual equipment, facilitators, publicity
Walking / cycling field trips	Experiential, context-based, actively engages participants and helps identify real-world issues; encourages informal discussion, can inspire creative solutions and enable residents to experience and provide feedback on the actual use of the (changed) physical environment, offering first-hand user insights.	Weather dependent, accessibility issues, limited group size, may be less accessible for some participants	Route planning, guides, facilitators, safety equipment (vests, first aid etc), transportation, refreshments, permits
On-spot events / pop-up events	Reaches diverse audiences, are flexible and visible in the community, and have a low barrier to participation. They are adaptable to different locations, engage the local community, and enable immediate, spontaneous feedback directly at the site of the intervention.	Requires significant setup, limited time for engagement, may not allow deep discussion, unpredictable attendance, may require permits, weather dependent	Portable materials (posters, boards), staff, permits to use the space, event setup materials, promotional resources, publicity, feedback forms, shelter (tent)

Citizen Advisory Committee	Provides diverse perspectives, fosters community involvement, ongoing input, builds expertise, fosters ownership, can provide continuity, develops community leaders, can advise on process and content	May not be fully representative, can be time-consuming, requires ongoing commitment, risk of groupthink, may require training, can be slow to reach consensus	Meeting space, administrative support, facilitation, materials, incentives, training resources, regular communication

Table 1. Short overview of different engagement methods and techniques

The choice of specific methods depends entirely on the **goals and resources** of the project. Followingly, each technique is described alongside explanations of *why*, with *whom*, and *how* it can be applied, as well as an outline of the required resources *(c.f Bishop, 2015, Haufe et al, 2017, Kübar et al, 2015, Tillemann et al, 2012)*. These descriptions, however, should be considered *"ideal-typical"*: **the actual application** of each method for specific purposes and contexts requires **careful planning** and **adaptation** to the unique characteristics of the situation. An ideal type is formed from characteristics and elements of the given phenomena, but it is not meant to correspond to all the characteristics of any one case. It is not meant to refer to perfect things, moral ideals or to statistical averages but rather to stress **certain elements common to most cases** of the given phenomena. It is also important to pay attention to that in using the word "ideal" Max Weber refers to the world of ideas (*Gedankenbilder*) and not to perfection; these "ideal types" are idea-constructs that help put the chaos of social reality in order *(Weber, 1904/1949).*

Engagement methods and techniques in more detail

Focus groups: The focus group is a moderated group discussion with 6 to 10 participants about a given topic. Participants can be selected either randomly or to represent a particular segment of a community. Participants are presented with ideas or proposals, after which they are asked for their reactions to what they have heard. It can be used to form well-founded opinions, and it comes from market research, where it is used, among other things, to test products and advertising strategies.

Short description	**The focus group is a moderated group discussion with 6 to 10 participants about a given topic. Participants can be selected either randomly or to represent a particular segment of a community. Participants are presented with ideas or proposals, after which they are asked for their reactions to what they have heard. It can be used to form well-founded opinions, and it comes from market research, where it is used, among other things, to test products and advertising strategies.**
WHY: Objective	To inform and start discussion with the target group
Level of involvement	Consulting, engaging
When?	At any stage
WHO: Participants	Affected and interested citizens as well as decision-makers Group should be as heterogeneous as possible, but still sufficiently homogeneous to enable discussion.
Scope	Small group (optimal up to 10 people)
Time commitment	Less than 1 day, but several hours
HOW: Typical process	Once the group has gathered, a topic is discussed in a targeted manner, with the aim of stimulating group dynamic processes. The specific procedure can be designed differently by the moderator, for example with an opening round in which motivations, positions and personal concerns are collected or a round of technical inputs in which various developments/approaches are presented. The moderator documents the process by means of protocol, audio or video recordings and evaluates the results both in terms of content and body language.
Materials	Audio-/video recording facilities Informational materials useful for prompting the discussion Refreshments for the participants
Human resources	Moderator / facilitator
Skills / critical features for success	Focus group selection and facilitation requires a trained moderator.
Space	Room with no distractions and of convenient size A roundtable configuration of the space is recommended
Benefits of the method for active mobility	Focus groups are very useful for uncovering issues and concerns, understanding the values, beliefs and attitudes that underlie positions, testing degrees of difference or consensus, and identifying the language that people use to talk about an issue. Because focus groups do not have statistical validity, they are not helpful in predicting the number of people in the larger community that will take a particular position.
Example cases	*To be added: links to BATS and other good practice examples/cases*
Links to further information	Focus group method. Link Plan Commission Handbook. Public Participation. Chapter 4. Link

World café: This method is a structured conversational process designed to facilitate open and collaborative dialogue, often among diverse groups of participants. It is characterized by a series of small, informal, and rotating group discussions focused on specific topics or questions. The World Café method encourages creativity, co-creation, and the sharing of ideas, making it ideal for activating community engagement by engaging community members / citizens to co-create solutions, build awareness, and foster a sense of shared responsibility while fostering a collective understanding of complex issues.

Short description	**This method is a structured conversational process designed to facilitate open and collaborative dialogue, often among diverse groups of participants. It is characterized by a series of small, informal, and rotating group discussions focused on specific topics or questions. The World Café method encourages creativity, co-creation, and the sharing of ideas, making it ideal for activating community engagement by engaging community members / citizens to co-create solutions, build awareness, and foster a sense of shared responsibility while fostering a collective understanding of complex issues.**
WHY: Objective	To facilitate meaningful, inclusive, and collaborative dialogue among diverse participants to explore complex issues, generate innovative ideas, and build a shared understanding. It can be used for brainstorming, exchanging and developing ideas on given topics, encouraging co-creation, empowering participants/ citizens and building awareness of the complexities of the topic.
Level of involvement	Consulting, engaging
When?	Typically: early phases of the intervention/campaign (at the beginning of planning initiatives). However, the method can be used also when addressing complex challenges; when facing resistance or divergent opinions; as a follow-up to pilot projects.
WHO: Participants	Potentially: all stakeholder groups
Scope	Optimal: ca 20-35, but suitable also for larger groups; ca 5 persons per table
Time commitment	2-4 hours, depending on the number of people and topics/"café tables"
HOW: Typical process	Identify the main objective: e.g., improving pedestrian infrastructure, increasing bike usage, or promoting walkable neighbourhoods. Articulate clear goals, such as understanding community barriers to active mobility, generating actionable ideas, or building stakeholder groups. Design relevant questions to be discussed in each table (generally open-ended questions that resonate with participants and initiate creative thinking)

	Prepare the space/room with tables Instruct the hosts who will facilitate rotating discussions at the tables Create small groups amongst participants, seated at tables to create a café-like environment Hosts will record ideas (e.g on posters) at the tables Participants rotate between tables after a set period, enabling cross-pollination of ideas. Synthesize insights in a joint discussion with results from each table Follow-up and implementation - share the outcomes through reports, infographics, or social media.
Materials	Tables, posters, pens, informational material on the tables
Human resources	1 moderator ("host") per table + coordinators in the room(s)
Skills / critical features for success	Setup of topics: in an open and discussion-provoking manner. Moderation of the "café's" to support discussion. Skilful summarizing and presentation/sharing of the results.
Space	1 large room or several rooms for the tables to enable convenient discussion and movement of the groups between the "café's"
Benefits of the method for active mobility	World Café method can support YRAM activation by ensuring inclusive engagement, where all voices are heard, and diverse perspectives are valued. It can foster creative solutions that reflect community needs, empowers citizens as co-creators to build ownership of projects, promotes collaboration between stakeholders.
Example cases	*To be added: links to BATS and other good practice examples/cases*
Links to further information	See e.g. Reimagining Social Change toolkit for World-cafe use: World-Cafe-Method_0.pdf.

Workshop / Forum: The workshop is an informal, event-related procedure in which participants discuss and work together on an issue. Simple tasks may require only one workshop, while large, complex or controversial tasks may justify a series of workshops.

Short description	**The workshop is an informal, event-related procedure in which participants discuss and work together on an issue. Simple tasks may require only one workshop, while large, complex or controversial tasks may justify a series of workshops**
WHY: Objective	The primary purpose of workshops or forums in active mobility planning is to create a participatory environment where stakeholders—including citizens, city planners, politicians, and experts—can collaboratively address challenges, share ideas, and co-create solutions.
Level of involvement	Informing, consulting, engaging
When?	At different stages of the intervention: e.g. development of a shared vision, analysis of alternative scenarios, or completion of any other tasks.
WHO: Participants	Key stakeholders, including residents' representatives, and various experts

Scope	Small group (up to approx. 15 people) Medium groups (approx. 15-30 people) Larger groups (from approx. 30 people)
Time commitment	Less than 1 day Usually several hours, often several workshops in series
HOW: Typical process	Creating a program, an agenda, a schedule or something similar in advance so that everyone involved can prepare and work in a goal-oriented manner. A workshop has no clear structural features. For this reason, depending on the task, the following vary: the number of participants the composition and selection of participants the process Usually starts with informing, moves towards analysing the core topic(s), obtaining opinions / reactions, creating discussion.
Materials	Depending on the goal and outline, supportive informational material
Human resources	Moderator
Skills / critical features for success	Moderating skills to create a suitable open atmosphere
Space	To promote the process of working together, the working atmosphere should be as open and free of constraints as possible. Given the goals of the workshop, also using non-traditional premises can be advantageous.
Benefits of the method for active mobility	Bringing into an organised dialogue different stakeholders and experts, including residents' representatives, can enable to reach YRAM-related solutions in an effective manner.
Example cases	*To be added: links to BATS and other good practice examples/cases*
Links to further information	Workshop method. Link Plan Commission Handbook. Public Participation. Chapter 4. Link

Online message boards / Online forums: Online message boards (or forums) are digital platforms where participants can post messages, share ideas, and engage in discussions asynchronously. These can be used as a tool for gathering input from a broad range of stakeholders, from the planning phase of new interventions down to project evaluation stages.

Short description	**Online message boards (or forums) are digital platforms where participants can post messages, share ideas, and engage in discussions asynchronously. These can be used as a tool for gathering input from a broad range of stakeholders, from the planning phase of new interventions down to project evaluation stages.**
WHY: Objective	The primary purpose of online forums in active mobility is to create a space for open, inclusive, and continuous communication with and between the stakeholders

Level of involvement	Usually: informing, consulting; given the set-up can also be engaging.
When?	Across different stages of a project—from initial planning to post-implementation evaluation.
WHO: Participants	Wider public, stakeholders
Scope	Online message boards can accommodate a wide range of participants.
Time commitment	Flexible for the users
HOW: Typical process	Online message board is typically set up and communicated to get responses from the residents or other stakeholder groups, e.g. feedback on winter maintenance of bicycle roads, on active mobility intervention plans, etc. Depending on the aim, participants may be encouraged not only for posting one-off messages but also to start discussion and be continuously engaged in the virtual conversation.
Materials	Accessible online platform, webpage, etc, with suitable affordances
Human resources	Web moderator
Skills / critical features for success	Digital capacities of the moderator(s)
Space	Virtual communication
Benefits of the method for active mobility	Online message boards are particularly useful for involving a broad range of participants in active mobility interventions, in a flexible manner. However, digital divide and differentiated access to digital technologies needs to be considered.
Example cases	*To be added: links to BATS and other good practice examples/cases*
Links to further information	https://www.maptionnaire.com/customer-stories/examples-of-civic-engagement-from-tallinn

Online / digital mapping: Online mapping involves the use of digital, interactive maps that allow stakeholders to, for example, pinpoint issues, suggest improvements, and collaborate in other ways with input provided directly into digital maps.

Short description	**Online mapping involves the use of digital, interactive maps that allow stakeholders to, for example, pinpoint issues, suggest improvements, and collaborate in other ways with input provided directly into digital maps.**
WHY: Objective	The primary purpose of online mapping in active mobility is to engage residents and stakeholders in identifying and addressing mobility challenges and opportunities by collecting location-based data. Online mapping also enables clear and easy-to-grasp map-based visualisation and communication of the collected input.
Level of involvement	Informing, consulting.
When?	Online mapping can be used across all stages of the intervention, including planning for new solutions, or collecting user feedback, to

	better understand user experience (emotions, feelings), to gather recommendations for further improvement, etc.
WHO: Participants	Wider public, stakeholders
Scope	Can accommodate a wide range of participants.
Time commitment	Flexible for the users
HOW: Typical process	Online mapping is set up by using either in-house digital capacities, open source or specific community engagement platforms, enabling collecting geolocated data.
Materials	Access to respective software and digital tools, also for the potential users
Human resources	Depending on whether in-house capacities are used or service is brought in.
Skills / critical features for success	Knowledge in setting up the online engagement in a suitable platform (or: to select suitable service provider), and monitoring/moderating and analysing the input on the maps
Space	Virtual
Benefits of the method for active mobility	Online mapping can make consulting wider public more flexible and inclusive, with a potential to include a wider range of participants. Location-based data makes the participants' input more accurate and easier to understand. However, digital divide and differentiated access to digital technologies needs to be considered. Providing map-based input might be perceived as technically demanding and thus discouraging participation.
Example cases	*BATS pilot city Umeå engagement of "Winter scouts" for developing real-time communication systems on snow maintenance. Read further.*
Links to further information	Engaging Residents to Take Part in Planning Consultations. Link

Public meeting: The term public meeting is used as an umbrella term for various meetings, including townhall style discussions, open houses, or public hearings. Public meetings can be used to disseminate information, provide a setting for public discussion, and get feedback from the community. Meetings may differ in terms of size, composition, audience, format or purpose. In general, they should follow a set agenda and be facilitated or chaired by a designated person.

Short description	**The term public meeting is used as an umbrella term for various meetings, including townhall style discussions, open houses, or public hearings. Public meetings can be used to disseminate information, provide a setting for public discussion, and get feedback from the community. Meetings may differ in terms of size, composition, audience, format or purpose. In general, they should follow a set agenda and be facilitated or chaired by a designated person.**

WHY: Objective	The primary purpose of public meetings in active mobility interventions is to create a space for direct interaction between city planners, stakeholders, and the community. While often used for informing purposes, public meetings can also provide suitable platform for consulting the interventions with the community and stakeholders.
Level of involvement	Informing, consulting
When?	Various stages of active mobility interventions
WHO: Participants	Public meetings are open to all interested participants
Scope	Varies
Time commitment	Varies, usually around 2 hours
HOW: Typical process	Choose a date, time and place convenient to the majority of interested citizens (e.g. avoiding usual work hours). Develop an agenda and meeting materials that clearly state the purpose of the meeting and tasks to be accomplished. Establish and describe the ground rules for participation. At the end of the meeting, summarize the meeting findings, discussions and any decisions that were made. After the meeting prepare meeting minutes to inform those who were unable to attend.
Materials	Refreshments, informational handouts and audio-visual equipment.
Human resources	Presenters, trained group facilitator(s) or moderator(s)
Skills / critical features for success	Moderating groups of different size
Space	Location with sufficient space, adequate parking and reliable heating, cooling, lighting and audio systems.
Benefits of the method for active mobility	Public meetings are often used for informing wider public about planned or completed mobility interventions. Relatively less resource demanding. However, there is a risk of unbalances in the representation and engagement of different stakeholder groups.
Example cases	*To be added: links to BATS and other good practice examples/cases*
Links to further information	Plan Commission Handbook. Public Participation. Chapter 4. Link

Walking/cycling field trips: A field trip is an organized, instructional tour of one or more sites by local officials, staff, consultants, residents and other stakeholders. Sites may be selected to illustrate specific project conditions, design concepts, or local issues and concerns. Observational analysis may be used to record the main features of the site, both successful and unsuccessful. Visual documentation, such as photographs, annotated sketches, and plans can provide an instrument for ongoing discussion and monitoring.

Short description	**A field trip is an organized, instructional tour of one or more sites by local officials, staff, consultants, residents and other stakeholders. Sites may be selected to illustrate specific project conditions, design concepts, or local issues and concerns. Observational analysis may be used to record the main features of the site, both successful and unsuccessful. Visual documentation, such as photographs, annotated sketches, and plans can provide an instrument for ongoing discussion and monitoring.**
WHY: Objective	The primary purpose of walking or cycling field trips is to create a shared, experiential understanding of the physical and social environment. Field trips are an excellent tool for developing a common understanding of an issue and initiating group discussion, particularly when followed by a meeting or workshop. Field trips can also be organised around key topics (e.g. safety perceptions in adverse weather conditions or in darkness); or to engage with selected groups (e.g. migrant woman).
Level of involvement	Informing, consulting, engaging
When?	Before active mobility intervention to introduce the plans or during/after the interventions for evaluation and feedback
WHO: Participants	Usually: the (anticipated) users of the visited site or other involved stakeholders. In case the trips focus on selected issues or user groups (e.g. safety from children's perspective), targeted participant recruitment is used
Scope	Ca 10-20 participants per guide
Time commitment	Depending on the size of the site and the group composition, usually 1-3 hours
HOW: Typical process	Setting up the field trip route along with informational materials. Conducting the field trip with a planner or other informed expert as a guide. Usually, the field trip entails several stops to share information and gather participants input. The trip might also be ended with a longer discussion and collecting participants' reflections and feedback.
Materials	Informational materials, refreshments provided after the tour. For cycling trips, bicycles for use by tour participants might be provided
Human resources	Tour guide(s) who should be experts on the issues targeted with the field trip.
Skills / critical features for success	Well-thought trip route and timing that supports the aims of the tour.
Space	Intervention area (e.g. new cycling path or other infrastructure)
Benefits of the method for active mobility	Walking or cycling field trips enable to engage residents in the actual use of the (changed) physical environment, thus providing a first-hand access to the user experience.
Example cases	The Role of Active Travel in Improving Health. Link
Links to further information	Plan Commission Handbook. Public Participation. Chapter 4. Link

On-spot events / pop-up events: Pop-up events are temporary, on-site engagement activities designed to communicate new initiatives and gather public input. These events are set up at the YRAM intervention area/site to create informal, interactive opportunities for residents to experience new solutions, provide feedback or recommendations.

Short description	**Pop-up events are temporary, on-site engagement activities designed to communicate new initiatives and gather public input. These events are set up at the YRAM intervention area/site to create informal, interactive opportunities for residents to experience new solutions, provide feedback or recommendations.**
WHY: Objective	The primary purpose of on-spot pop-up events is to engage the public in active mobility initiatives by providing a hands-on experience with proposed solutions at the very location of the intervention (e.g. organising pop-up bicycle repair shop as part of opening the new cycling lane); or to test out or promote new solutions (e.g. opening a temporary pop-up cycling lane on a regular street).
Level of involvement	Informing, consulting, engaging
When?	At various stages of the intervention
WHO: Participants	Users of the new active mobility solutions
Scope	Varies
Time commitment	Pop-up events are set up for a limited period that might vary depending on the aims: from 1-day event to a whole season.
HOW: Typical process	Pop-up events can be combined also with other promotional activities (e.g refreshments points on the routes of bike-to-work campaign, providing an opportunity to communicate with the participants for information sharing or evaluation feedback).
Materials	Varies
Human resources	Varies
Skills / critical features for success	Choosing the right format and location, considering the aims of the event and targeted groups.
Space	On-site

Benefits of the method for active mobility	On-site pop-up events enable direct opportunities to raise awareness and engage with the end-users of the new solutions in active mobility, in real-life settings. Depending on the aims and scope, might be resource-demanding
Example cases	BATS pilot city Hamburg conducted on-spot citizen engagement in the Reventlowstreet to engage the cyclists and pedestrians with the renewed intersection. Read further
Links to further information	Becker, S. et al (2022) Pop-up cycling infrastructure as a niche innovation for sustainable transportation in European cities: An inter- and transdisciplinary case study of Berlin, Sustainable Cities and Society, 87, 104168. https://doi.org/10.1016/j.scs.2022.104168.

Citizen Advisory Committee: A citizen advisory committee is a small group of people selected to represent various interests, points of view, or expertise in a community. Advisory committees are often charged with helping to update a comprehensive plan, review significant policy proposals, or study issues in-depth.

Short description	**A citizen advisory committee is a small group of people selected to represent various interests, points of view, or expertise in a community. Advisory committees are often charged with helping to update a comprehensive plan, review significant policy proposals, or study issues in-depth.**
WHY: Objective	The primary purpose of using a citizen advisory committee in active mobility intervention planning and evaluation is to create a formal mechanism for community input and collaboration.
Level of involvement	Engaging
When?	To be most effective, and to ensure a genuine engagement, Citizen Advisory Committee needs to be started during the initial planning phase of the intervention.
WHO: Participants	A citizen advisory committee can be set up to represent the local community in general, then the committee representativeness across various resident groups needs to be ensured. Another option is to form a more targeted committee to represent certain key resident groups (e.g. youth committee).
Scope	Less than 25
Time commitment	Serving on a committee takes a considerable amount of residents' time, therefore, local officials should be careful to make the best and responsible use of members' time. It is advised to keep the engagement of committee members compact to avoid participation fatigue and members dropping off.
HOW: Typical process	These committees are often formed to provide input on planning proposals or plans, or on specific issues, such as active mobility initiatives. The work processes vary. Clear aims and timeframe as

	well as transparency in decision making and adopting the committee input in the intervention in focus are essential.
Materials	Informational material on the issues under discussion
Human resources	Facilitator(s) of the committee work and the meetings
Skills / critical features for success	It is crucial that the local government is genuinely willing to consider citizens as equal partners, and to be ready to adopt respective decisions in real activities.
Space	Meeting facilities
Benefits of the method for active mobility	By involving citizens in a structured and collaborative way, the committees bring valuable insights, energy, and expertise to the planning process while fostering trust and transparency between the local government and the community. Citizen advisory committees as partnerships require commitment on behalf of the local government to take committee's input seriously.
Example cases	The Bicycle Pedestrian Advisory Committee (BPAC) in Miami, comprised of up to 25 private citizens, provides a forum for the discussion of issues affecting bicyclists and pedestrians, and reports to the local transportation planning Governing Board on bicycle and pedestrian-related issues. Link
Links to further information	Plan Commission Handbook. Public Participation. Chapter 4. Link Effective Use of Citizen Advisory Committees for Transit Planning and Operations. Link

How to use digital interactive technologies

Modern technologies and digital platforms can enhance knowledge sharing and mutual learning. Although digital co-design tools and platforms are beneficial in specific situations, in-person meetings and events remain crucial for citizen engagement. The physical presence of others and their insights fosters stronger connections, better understanding, and more effective collaboration. As online and offline tools and meetings result in different outcomes, integrating both online and offline tools enables the engagement of diverse citizen groups simultaneously *(See more: CIVITTA. Big Messages. Link)*. Combining suitable online and offline tools for resident engagement enables addressing issues of the digital divide and differentiated access to internet connection in planning active mobility interventions.

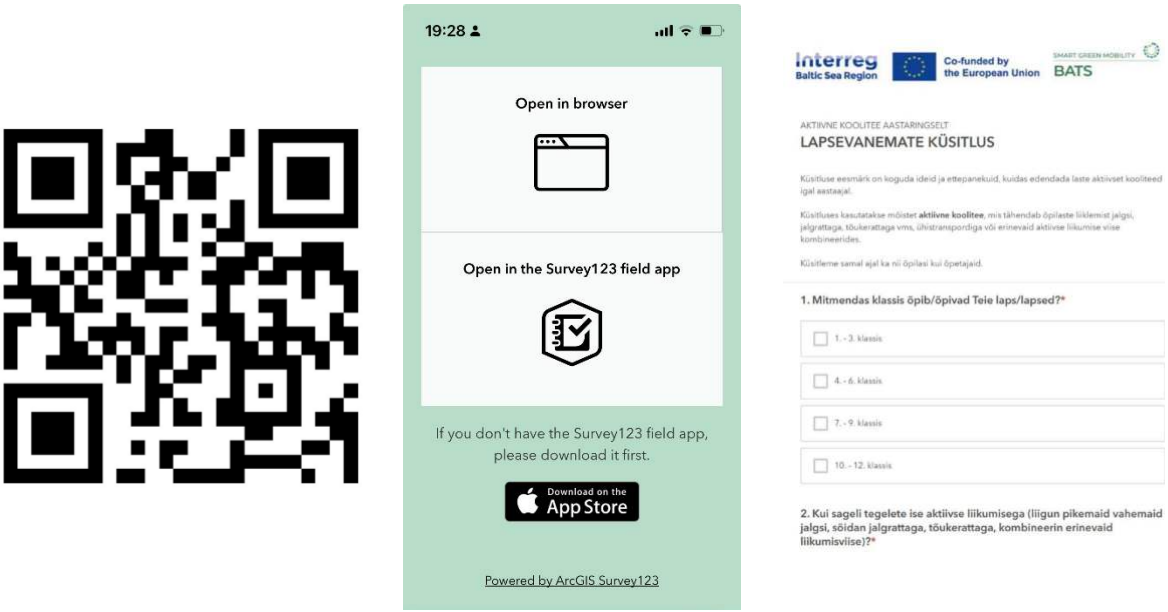


Figure 9. Using digital tools for surveys, example from BATS pilot city Kiili, Estonia

Augmented reality and virtual reality are increasingly used as beneficial tools in active mobility planning and encouragement *(see e.g. Oduor and Perälä, 2021, Link, and* the *example from the article on the left figure.)*.
By combining the built environment with interactive technology enables to encourage active mobility along with incentives for urban exploration and social interaction.

On the image, to encourage cycling, street signs show an approximate number of calories burned between two points or the number of people who have passed through a specific location at a certain point in time

Gamification By embedding game elements into real-world contexts, gamification can encourage people to choose active modes of transportation, such as walking or cycling, over driving. The rewards provide a sense of achievement and progress, making active transportation more appealing. If players can collaborate and share their experiences, their motivation to participate in active mobility might be enhanced. There are some evidence that gamification seems popular among people already using active/sustainable travel (*Tsirimpa et al, 2019).*

See also: Interventions to increase active travel: A systematic review. Link
Using digital social market applications to incentivise active travel: Empirical analysis of a smart city initiative. Link

Examples of using gamification in active mobility:

- **The CIVITAS Initiative** works to make sustainable and smart urban mobility a reality for all in Europe and beyond. Link

- **MUV Game**: MUV inspires behavioural change in communities through so-called "gamification" – in other words, changing citizens' habits through a game that mixes digital and physical experiences. Link

- **Bike2work Challenge**. Link

- **Mobility Lab**. Companies Using Games to Promote Active Employee Transportation. Link

- **European Commission**. Using gamification to involve people in mobility planning. Link

Nudging in guiding year around active mobility (YRAM)

Several theories and models, such as **social cognitive theory** *(Bandura, 1989; Bandura, 2005)* and **perceived walkability** *(De Vos et al, 2023)* aim to understand, promote, and analyse the factors influencing people's choices to engage in walking, cycling, or other non-motorized modes of mobility. In the field of transportation, behaviour change has been a focus for many years, but nudging as a concept has not yet been widely popularised *(Lehner et al, 2016).*

However, for planners who are interested in promoting sustainable mobility, **nudging could become a simple and effective tool,** because it can guide and facilitate choices based on how human decision-making works - with the use of heuristics, biases and habits *(Marchiori et al, 2017).* Essentially, nudging is an art of encouraging people consciously and transparently to act in their own best interest (even when they might not do so on their own). The characteristics of nudges to **preserve freedom of choice** represent **important success factor** in contrast to conventional policy instruments and serve as a key argument in the justification of their application *(Marchiori et al., 2017).*

Nudging can be implemented to influence mobility behaviour, resulting in a reduced need to travel, fewer trips, modal shift, reduced trip length, and overall transport efficiency (Banister, 2008).

Image source: https://www.convertize.com/fr/wp-content/uploads/2018/09/nudging-food.jpg

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The basic principle of nudging is changing the physical and/or informational environment *(choice architecture) influencing the decisions and behaviours of groups or individuals. This involves altering the circumstances in which decisions are made,* ***making certain choices easier or simpler.***

Nudges work best if they support an attitude that is otherwise also thrived by the target group but not tackled due to a knowledge action gap *(Venema et al., 2019).* For example, if people support sustainable mobility in general, but decide to not cycle on a regular basis due to habits. Nudge theory by Cass Sunstein and Richard Thaler *(2022),* proposes adaptive designs of the decision environment as ways to influence the behaviours and decision-making of groups or individuals. This approach, also known as "libertarian paternalism," goes beyond typical programs that simply provide information and incentives *(Viale, 2022).* Nudging contrasts with other ways to achieve compliance, such as legislation or enforcement. A nudge, as we will use the term, is any aspect of the choice architecture that alters people's behaviour in a predictable way without forbidding any options or significantly changing their economic incentives. To count as a mere nudge**, the intervention should be easy and cheap to avoid**.

Nudges are not mandates, they are small changes that are easy and inexpensive to implement.

Viale *(2022)* explains that good nudges help us avoid bias and encourage deliberate decision making; bad nudges, on the other hand, use bias to nudge people unconsciously into unintentional behaviours. Bad nudges attempt to compel decisions based on economic rationality. **Good nudges encourage decisions based on a pragmatic, adaptive, ecological kind of rationality.**

The term nudging is used to describe the concept, while nudges refer to the set of interventions *(Junghanns, 2024).* Nudges is a collective term for different policy tools that planners could use to influence people. Lehner et al. distinguished **four nudge types: environmental, educative, social reference, and incentive** *(detailed overview below).* These can use following nudge tools: change option outcomes, commitment strategies, feedback, framing, influence physical effort or financial costs, injunctive & descriptive norm, no action default, place/group attachment, prompted choice, refer to opinion leader, saliency, and simplification *(Bandsma et al, 2021).* They are important guidelines for ensuring that decision-making processes are transparent, inclusive, and informed by the perspectives and needs of the communities affected by the decisions.

Research on nudges has found that existing public transport options influence intervention effectiveness *(Bamberg, 2006; Gravert & Collentine, 2021).* Interventions should be tailored to local transportation options. Effectiveness of interventions is higher for recently relocated individuals *(Bamberg, 2006; Thøgersen, 2012).* Also, timing interventions with life changes may increase impact. Higher income individuals are more responsive to certain interventions *(Roth, 2021).* Therefore, income-specific strategies in intervention design should be considered. In addition, interventions should be targeted based on travel patterns and technology use, for example, short-travel commuters not using apps are more responsive to digital nudges *(Zimmermann, Schulz, Hein, Gewald, & Krcmar, 2023).*

Understanding nudge efficacy can provide policy makers with tactics to use nudging successfully as part of their 'soft' policy toolbox (and complimentary to their 'hard' policy toolbox) to accomplish sustainable behavioural change *(Steffen et al, 2024)*. Further, nudges can be more cost-effective than traditional governmental techniques *(Benartzi et al, 2017)*, therefore their addition to the policy toolbox can be particularly effective, especially when coupled with stakeholder engagement strategies *(Bardal et al, 2020; Franssens et al, 2021)*.

The key factors that can serve as arguments to be based on for nudges in YRAM are **sustainability** *(Glazener et al, 2022; Duong, 2024)*, **health benefits** *(Sallis et al, 2012; Duong, 2024; Junghanns, 2024)*, **reduced congestion** *(Meyer, 1997)*, **economic benefits** *(Cavill et al, 2008; Gössling et al, 2019; Kahlmeier et al, 2020)*, **infrastructure** *(Duong, 2024; Nordgård, 2024)*, **cultural shift** *(Gatersleben et al, 2007; Xin, 2024)*, **safety** *(Plowden, 2019; WHO, 2023; Salehi et al, 2024)*, **inclusivity** *(Kovbas, 2024)*, **policy and advocacy** *(Duong, 2024)*.

By combining nudges with practical infrastructure improvements, it becomes easier for people to choose active mobility all year round, regardless of the weather or time of day. Planners determine which 'nudge type' is appropriate, this refers to the tactics of how a nudge promotes behaviour change (Bandsma et al, 2021).

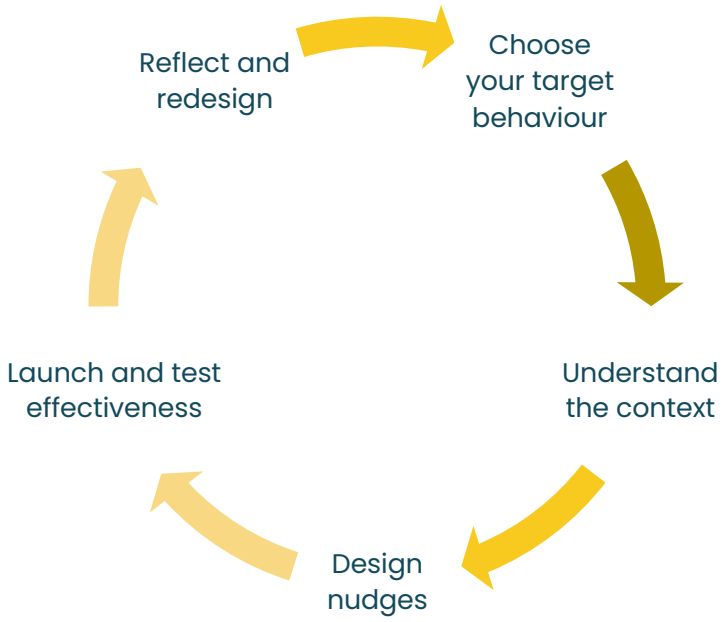
Nevertheless, while presenting a lot of benefits, nudges are in critique for their paternalistic nature, undermining the autonomy of choice, thereby making it undemocratic and non-admirable. It is tempting to „nudge in the dark" *(Bovens, 2009)* and try to manipulate the target audience.

In contrast, while nudging can raise moral concerns, research suggests that transparent or even collaborative nudging strategies (where citizens and planners cocreate interventions) lead to more promising results (Bruns et al, 2018; Marchiori et al, 2017).

Lastly, it should be stated that nudges can only support deeper-lying attempts to change behaviour. **Nudges can offer a direction, but often only work for a short time or in specific contexts.** They should therefor serve as a compliment of a more comprehensive policy strategy (comprising restrictions, guidelines, campaigns etc).

How to nudge

Nudging works best when it is tailored to the specific case. **The design process can be guided by the following 5 steps** *(United Nations Environment Program, 2020)*:



1. Choose your target behaviour
2. Understand your context
3. Design nudges that promote active mobility
4. Launch the nudges and monitor the effectiveness
5. Refine the nudges based on data and insights

Choose your target behaviour

Set clear objectives in what behaviour you want to tackle and identify stakeholders/personas. Be specific to your audience and aim for an impactful change.

Understand your context

Think about what factors are influencing on the human behaviour on the three levels *(Scottish Government, 2013)*:

- ***individual level:*** What conscious motivations, attitudes and knowledge do individuals have? And how do non-conscious biases, habits and emotions influence them?
- ***social level:*** How is our behaviour shaped by cultural norms, identities, relationships and interactions with other people?
- ***material level:*** What is the wider context of the behaviour? What are the constraints or incentives set by economic factors, infrastructure, technology and availability of options?

Identify barriers and drivers towards the target behaviour: which of the individual, social and material influences may make it difficult for people to adopt your target behaviour, which encourage it? Then look for potential touchpoints: What are the moments of decision for your target audience? What points of influence do you have over your target audience? What channels of communication or contact do you have with your target audience?
At the end of answering these questions you might have to reconsider your target behaviour or audience and reiterate.

Design nudges that promote active mobility

Based on the chosen target and the given context, you can choose a nudge that is supports the decision-making context. Consider what is most effective and what is feasible to be implemented. Then ensure the infrastructure and tools that support the nudges, involve the right people, and build support. You might also have to consider groups that are negatively affected by the nudge.

A guidance for finding the right nudging tools can be the **EAST framework: easy, attractive, social and timely** (*United Nations Environment Program, 2020*):

- **Easy:** People often take the path of least resistance. You can therefore encourage desirable behaviours by removing small frictions or hassles, by defaulting people into the desirable choice, or by redesigning the way choices are presented to make the desirable behaviours easier.
- **Attractive:** Humans are more likely to adopt a behaviour when it captures our attention or is in line with our motivation and beliefs. You can draw attention with visual cues that are particularly relevant or noticeable, and leverage motivation by emphasizing the positives and using incentives.
- **Social:** Human behaviour is hugely influenced by what others around us are doing. You can promote desirable actions by highlighting the fact that other people are adopting them. You can also make behaviour more publicly visible and emphasize opportunities for people to help each other.
- **Timely:** People are creatures of habit, so nudges are most effective at moments of change in people's lives. We also have a deep tendency to emphasize the present more than the future. You can harness these tendencies by timing campaigns strategically, highlighting the immediate benefits of sustainable actions, and helping people plan ahead.

Based on these criteria, you can pick a **type of nudge (environmental, educative, social reference, incentive)** that you consider suitable.

Environmental nudges: This type entails modification of the environment, such as public space. It taps into the sensitivity of individuals to relatively minor environmental changes and increases saliency of a desired option. Environmental nudges typically alter the effort needed to conduct a behaviour, the order in which choices are encountered, or the visibility of a code of conduct. Such small modifications can have a strong impact on subconscious decision-making. This type is beneficial when the design of the public space facilitates the undesired behaviour. **For example, coloring bike lanes for more saliency for bike infrastructure.**

Type of nudge: environmental	**Nudge tools: Saliency, influence physical effort or financial costs, change option outcomes, no action default, prompted choice *(Bandsma et al, 2021).***
Short description	This type entails modification of the environment, such as public space. It taps into the sensitivity of individuals to relatively minor environmental changes *(Münscher et al, 2016).* Environmental nudges typically alter the effort needed to conduct a behaviour, the order in which choices are encountered, or the visibility of a code of conduct. Such small modifications can have a strong impact on subconscious decision-making *(Thaler et al, 2022).* This type is beneficial when the design of the public space facilitates the undesired behaviour *(Michie et al, 2014).*
WHY?	People often take the path of least resistance and prefer not to act unless they must and procrastinate. Therefore, they are greatly influenced by defaults. Standard choices, that determine the result in case people take no action.
Level of involvement	The level of involvement for such a nudge is typically low to moderate because it relies on passive decision-making. Since people tend to stick with the pre-set option due to inertia or convenience, they do not need to actively engage in the decision process unless they choose to opt out. However, if the default is highly visible or requires deliberate action to change, the involvement level may be slightly higher.
When?	Consider environmental nudges for improving year around active mobility if changes in the built environment are anyway needed (in combination with construction projects), or when physical interventions are possible.
Key features	Make a code of conduct more/less visible in public space. Marginally influencing the amount of physical effort or costs to conduct a behaviour. Marginally influence the outcomes of behavioural options. Force people to actively decide, without prescribing what they should decide.
HOW: Tools & channels	Environmental nudges can work through prompted choice, up-sell or down-size, default options, saliency and placement, or influence on the intended outcome of an option. Channels of environmental nudges are typically physical interventions such as signs, changes in the built environment or the design of a service.
WHO: Participants	Environmental nudges are most effective for people who are open to change but need a little push to adopt active mobility (e.g., passive decision-makers ("go with the flow" people), environmentally & health-conscious individuals, occasional active travellers ("willing but inconsistent"), newcomers or people in

	life transitions, younger generations & digital natives). It might not work for highly committed drivers and people in car-dependent areas.
Time commitment	The time required to implement an environmental nudge for active mobility depends on the scale, infrastructure readiness, and policy environment. ○ Fastest impact: Digital/app-based changes, policy adjustments in workplaces and schools (weeks to months). ○ Moderate effort: Institutional policy shifts, urban space adjustments (months to years). ○ Longest timeframe: Large-scale infrastructure and systemic policy shifts (years).
Materials	The materials required depend on the scale and type of environmental nudge being implemented. ○ Minimal materials needed for quick, digital-based nudges (e.g., defaulting navigation apps or HR policies). ○ Moderate investment required for infrastructure adjustments (bike storage, signage). ○ Long-term success depends on policy and urban planning support.
Human resources	The human resources required will depend on the scale and complexity of the environmental nudges you want to implement. ○ Small-scale nudges (like app changes or policy updates) require fewer people, typically involving developers, HR, and communications staff. ○ Medium to large-scale nudges (urban planning, workplace shifts) require a mix of facilities managers, urban planners, and sustainability experts. ○ Long-term, systemic changes need policy advisors, engineers, and community coordinators to support infrastructure and legislative changes.
Skills / critical features for success	To successfully implement environmental nudges for active mobility, you'll need a combination of skills (behavioural science, communication, data analysis, project management, urban planning, technology) and critical features (clear messaging, accessible infrastructure, ease of opting in/out, personalization, continuous feedback).
Benefits of the techniques for active mobility	By leveraging environmental nudges, we can see widespread benefits such as: ○ More fundamental changes of behaviour due to changes in physical environment. ○ Long-term effects. ○ More visible intervention makes it more tangible and easier to understand. ○ Auto-pilot decisions in cars, road planning, helmet wearing. Effective, e.g. dynamic speed limits that reduced speed driving from 70% to 17% in Linköping. Defaults seem to be the most effective instruments *(Lehner, Mont, & Heiskanen, 2016).* ○ Road planning with lines, colours, signs and humps that may greatly influence driving speeds, driving patterns and in general guide the flow of traffic *(Lehner, Mont, & Heiskanen, 2016).*
Example cases	Colour of bike lanes for more saliency of bike infrastructure. Link Red carpets at locations where bike parking is not allowed. Link Traffic signs using the left digit effect (49 instead of 50 km/h). Link Default options in route planners in favour of sustainable way to travel (prompting a choice). Link Walking meeting trails in companies, moving trails in schools.

Links to further information	A promising tool for sustainable consumption behaviour? Link Optimising nudges in public space: Identifying and tackling barriers to design and implementation. Link Nudging green mobility: A comparative analysis on various nudges for mobility behaviour in the city of Turku. Link

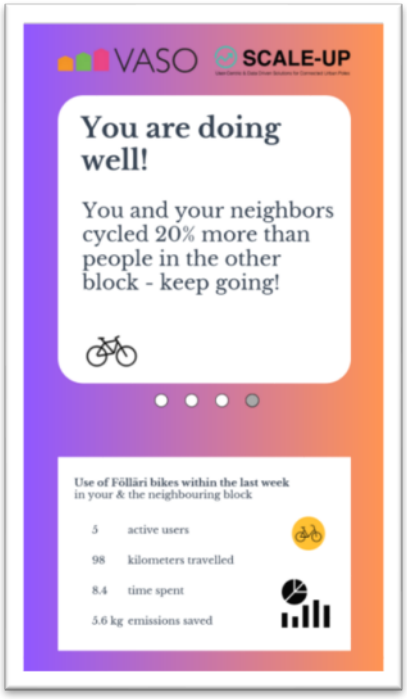
Educative nudges: This type aims to educate the target group about the outcomes of its behaviour. Educative nudges try to overcome subconscious decision-making (system 1) and encourage conscious decision-making (system 2). This creates opportunities for education through, for example, feedback or framing. This nudge type can be used when the behavioural assessment indicates a lack of knowledge or capacity for behaviour change among individuals. **In the displayed example, a campaign in the city of Durham targeted commuters with tailored information on sustainable travel options to their work places delivered by e-mail, combined with peer challenges rewarded by prizes.**

Type of nudge: educative	**Key mechanisms: Personalized travel planning, route planning with sustainable options, feedback on environmental impact.** **Nudge tools: Simplification, framing, feedback, place/group attachment, injunctive & descriptive norm, refer to opinion leader *(Bandsma et al, 2021).***
Short description	This type aims to educate the target group about the outcomes of its behaviour *(Hansen et al, 2013).* Educative nudges try to overcome subconscious decision-making (system 1) and encourage conscious decision-making (system 2). This creates opportunities for education through, for example, feedback or framing *(Hansen et al, 2013).* This nudge type can be used when the behavioural assessment indicates a lack of knowledge or capacity for behaviour change among individuals *(Michie et al, 2014).*
WHY?	Educational nudging is used to empower individuals by increasing their knowledge and awareness, enabling them to make informed and deliberate decisions. The primary goal is to encourage behaviour change by addressing gaps in understanding or awareness, rather than relying on manipulation. It is particularly effective in situations where individuals may not fully understand the consequences of their actions or the benefits of alternative choices. By integrating educative-type nudges into mobility planning strategies, planners who care can foster long-term behavioural shifts toward sustainability while addressing knowledge gaps and psychological barriers effectively.
Level of involvement	Educational nudging typically requires a moderate to high level of involvement from individuals (consulting, engaging in dialogue). Unlike more passive forms of nudging (e.g., default settings or subtle environmental changes), educational nudges rely on individuals actively engaging with the information provided.

When?	Educational nudging is most effective when applied in contexts where individuals are open to learning or making changes, such as: early in the decision-making process; during habit formation, in response to feedback, in situations of low awareness and when individuals are unaware of the consequences of their actions or the benefits of alternative behaviours, educational nudges can fill the knowledge gap.
Key features	Make information more straightforward. Deliberately phrase information so that it leads to a particular decision. Provide direct and personalised information. Appeal to feelings of place attachment or group binding. Prompt information about what most important others do or approve/disapprove of. Ask opinion leaders that are respected/trusted by the target group to disseminate information.
HOW: Tools & channels	Possible tools for educative nudges are raising awareness, simplification, framing, gamification & competition, feedback mechanisms, or prompts tailored to the audience. Ensure the content is clear, relevant, and actionable. Channels can be posters, info materials, apps, workshops, or public campaigns.
WHO: Participants	Educational nudging is designed for individuals or groups who can benefit from increased awareness and understanding to make better decisions: general public, targeted groups, all other stakeholder groups.
Time commitment	The time commitment for educative type nudges can vary significantly depending on the specific intervention and its implementation context. while the initial setup of educative nudges can be time-intensive, ongoing maintenance and adaptation require a sustained commitment to ensure their effectiveness. The exact time commitment will depend on the scope and complexity of the intervention.
Materials	Resource Requirements: Moderate (requires personalized information systems).
Human resources	Implementing educative nudges requires a multidisciplinary team with expertise and skills tailored to designing, deploying, and evaluating these behaviour-changing interventions. The following key human resources are essential: behavioural scientists, educators and content specialists, communication and messaging experts, data analysts and researchers, technology specialists, policy makers and strategists, community engagement coordinators, monitoring and evaluation specialists.
Skills / critical features for success	Tailoring to individual preferences and integration with existing travel habits. Ensuring accurate and timely information and maintaining user engagement.
Benefits of the techniques for active mobility	Educative nudges for year-round active mobility offer several benefits, supported by practical examples and research: ○ Behavioural change through education and knowledge sharing, long-term sustainability via knowledge building. ○ Scalable solutions for broad audiences - synergetic effects with information campaigns or gamification for higher engagement. ○ Domino effect via role modelling. ○ Low effort and very low costs, for example cost efficiency compared to infrastructure measures. ○ Possibly very subtle, can exist in very flexible and creative forms.
Example cases	Sign to turn of idle motor at railway crossing. Link Lights that visualise optimal travel speed. Link Information campaigns, info signs in decision places (for example, bike benefits displayed in the car parking). Link

	Personalized route maps for individuals' home to work addresses with comparison of different travel modes. Link
Links to further information	Nudging green mobility: A comparative analysis on various nudges for mobility behaviour in the city of Turku. Link

Social reference nudges: This type communicates social reference points, which inform people about what others do or prefer. Humans are social beings and sensitive to social approval, pressure and status; nudges can tap into this sense of belonging to social groups or the tendency to conform to group pressure. This type can be applied when individuals are unaware of which behaviour is approved of, disapproved of, or conducted by the target group. **For example, giving feedback on travel behaviour in the form of comparison to other people.**



Type of nudge: social reference	**Key mechanisms: Social comparison and community challenges. Nudge tools: Injunctive & descriptive norm, refer to opinion leader, commitment strategies *(Bandsma et al, 2021).***
Short description	This type communicates social reference points, which inform people about what others do or prefer *(Michie et al, 2014).* Humans are social beings and sensitive to social approval, pressure and status; nudges can tap into this sense of belonging to social groups or the tendency to conform to group pressure *(Thaler et al, 2022).* This type can be applied when individuals are unaware of which behaviour is approved of, disapproved of, or conducted by the target group. Nudging might be effective in changing travel behaviour in conjunction with other policy measures to promote sustainable and healthy transport, ideally through a nudge unit to test, advise, and implement these subtle nudges. Further, the location, quality of transport services, and geographical density of cities are crucial aspects regarding the effectiveness of nudges in real-life scenarios *(Steffen, Hook, & Witlox, 2024).*
WHY?	Social reference nudges are used because humans are naturally influenced by social norms and the behaviour of others. These nudges leverage the psychological tendency to conform to what is perceived as "normal" or socially acceptable. By highlighting positive behaviours or desirable norms, social reference nudges encourage individuals to align their actions with those of their peers or community. By incorporating social reference-type nudges into their planning, planners who care can tap into the power of social influence to promote sustainable transportation choices and create lasting behavioural changes in mobility patterns.

Level of involvement	Low Involvement or moderate (informing, consulting).
When?	Social reference nudges are most effective in the following situations: ○ when social norms are strong ○ when awareness of norms is low ○ when behaviour change is needed ○ during habit formation
Key features	Prompt information about what most important others do or approve/disapprove of. Ask opinion leaders that are respected/trusted by the target group to disseminate information. Public commitment that individuals will decide.
HOW: Tools & Channels	Social reference nudges can function trough the tools of commitment, comparison or highlighting of injunctive and descriptive norms, place or group attachment. Channels for these nudges can be events, social media groups, but also physical materials that point out norms like an info screen. Ensure the message is clear, relevant, and motivating.
WHO: Participants	General public, specific groups, all other stakeholder groups. Women might have greater concerns about making environmentally moral choices, resulting in higher moral nudge susceptibility, particularly for active travel, and trips taken with companions might be more easily swayed toward active modes. Those with greater time flexibility who are younger might be a target group for carsharing, especially when influenced by moral arguments, while older retired and full-time employed individuals may not be willing to give up their private cars and carsharing may not be practical for families with children.
Time commitment	The time commitment for social reference type nudges can vary depending on the complexity of the intervention and its implementation context. While the initial setup of social reference nudges can be time-intensive, ongoing maintenance and adaptation require a sustained commitment to ensure their effectiveness.
HOW: Typical process	The process of implementing social reference nudges typically involves the following steps: ○ identify the target behaviour ○ define the audience ○ design the nudge, e.g. develop a nudge that highlights positive social norms or provides social comparisons. Ensure the message is clear, relevant, and motivating. ○ deliver the nudge
Materials	Resource Requirements: Low to Moderate (depends on community engagement features).
Human resources	Implementing social reference type nudges requires human resources skilled in behavioural science, communication, and community engagement. These nudges leverage social norms and peer influence to encourage behaviour change. Key roles include behavioural scientists, communication specialists, role models, data analysts, community engagement coordinators, training and coaching teams, policy makers.
Skills / critical features for success	Leveraging social influence and creating a sense of community. Avoiding negative social pressure and ensuring privacy.

Benefits of the techniques for active mobility	Social reference nudges for year-round active mobility leverage peer influence and community dynamics to promote sustained behavioural change. Key benefits supported by research include: ○ fosters collective awareness and communality, increased motivation through peer comparison, community building and collective responsibility. ○ long-term habit formation. ○ cost-effective scalability ○ synergy with environmental impact. ○ work the strongest, most effective nudging type
Example cases	Labelling of public transport users with a sustainable travel card case. Link Labels with messages that refer to other users e.g. "93% stick to the speed limit here". Link Emphasise social aspects of sharing. Link Travel or walking feedback programmes where social norms and social networks are involved. Smartphone apps to encourage physical activity. In one study the app users increased their walking by 64% for a period. Link Public transport operators can increase public transport use by incorporating messages that positively label passengers as sustainable travellers in their communication strategies. Link
Links to further information	Nudging green mobility: A comparative analysis on various nudges for mobility behaviour in the city of Turku. Link

Incentive nudges: This type of nudges alters the experiences that different choice options provide to individuals. As nudges do not involve significant financial incentives, this is often about non-monetary rewards, such as creating a positive experience regarding a code of conduct. Incentive nudges are useful when the behavioural assessment reveals that a behaviour is perceived as unattractive or boring. **For example, receiving positive emotion in the form of indirect visual praise for appropriate behavior (smiley face for driving at the permitted speed).**

Type of nudge: incentive	**Key mechanisms: Rewards for sustainable choices and gamification Elements.** **Nudge tools: feedback, saliency, influence physical effort or financial costs, change option outcomes *(Bandsma et al, 2021).***
Short description	This type of nudges alters the experiences that different choice options provide to individuals. As nudges do not involve significant financial incentives, this is often about non-monetary rewards, such as creating a positive experience regarding a code of conduct. Incentive nudges are useful when the behavioural assessment reveals that a behaviour is perceived as unattractive or boring *(Bandsma et al, 2021).*

WHY?	Mobility planners should take advantage of incentive-type nudges because they are highly effective in motivating behavioural changes, particularly in promoting sustainable transportation choices. The key reasons are encouraging Initial engagement, overcoming habitual behaviours, promoting long-term behaviour change, reducing congestion and emissions, real-time flexibility. By integrating incentive-type nudges into mobility planning strategies, planners can achieve significant improvements in traveller behaviour, sustainability, and system efficiency. These approaches complement other interventions by providing direct motivation for change.
Level of involvement	Moderate involvement (consulting).
When?	Incentive nudges are most effective in contexts where: ○ Individuals need an extra push to adopt a behaviour they are already considering (e.g., switching to active mobility). ○ The desired behaviour is easy to adopt but lacks immediate rewards (e.g., recycling). ○ Long-term habits need to be established, and small rewards can reinforce consistent behaviour. ○ The target audience is motivated by tangible benefits or rewards.
Key features	Provide direct and personalised information. Make a code of conduct more/less visible in public space. Marginally influencing the amount of physical effort or costs to conduct a behaviour. Marginally influence the outcomes of behavioural options.
HOW: Tools & Channels	Tools of incitive nudges can be in the form of influences on the physical efforts or economic costs of an action, through gamification & competition, or small, meaningful rewards that align with the desired behaviour. Ensure the incentive is easy to understand and accessible. Appropriate channels are through apps, loyalty programs, community initiatives or competitions.
WHO: Participants	Target groups that are sensitive to financial incentives or that can be influenced by removing friction.
Time commitment	The time commitment for incentive type nudges can vary significantly depending on the complexity of the intervention and its implementation context. While the initial setup of incentive-based nudges can be time-intensive, ongoing maintenance and adaptation require a sustained commitment to ensure their effectiveness.
Materials	Resource Requirements: High (requires reward systems and ongoing management). ○ Reward systems, e.g. tools for tracking and delivering rewards, such as apps, loyalty cards, or vouchers. ○ Promotional materials, e.g. flayers, posters, or digital ads to inform participants about the incentive. ○ Data collection tools, e.g. systems for monitoring behaviour and measuring the impact of the nudge.
Human resources	Implementing incentive-based nudges requires a multidisciplinary team to design, execute, and evaluate these interventions effectively. Key human resources include behavioural scientists, HR and organizational leaders, communication specialists, data analysts, financial experts, technology specialists, policy makers or strategists, training and development teams, community engagement coordinators.

Skills / critical features for success	Immediate gratification, aligning rewards with user motivations. Sustaining motivation beyond initial engagement and cost of implementing reward systems.
Benefits of the techniques for active mobility	Incentive-type nudges for year-round active mobility combine financial rewards, gamification, and social incentives to sustainably promote walking, cycling, or public transport use. Key benefits include immediate motivation through tangible rewards, long-term habit formation via gamification, scalability and cost efficiency, targeted engagement for occasional users, synergy with health and environmental benefits, flexibility across contexts.
Example cases	Interest free loans for transport passes. Free and convenient public transport for all citizens (e.g. Luxembourg, Tallinn, Hwaseoung, Dangjin). People are defaulted to using free public transport and walking maps, while car passes require extra steps to request, the outcome is higher public transport use and awareness of year around active mobility options. Link Business public transport card instead of car leasing. Link Free parking on P&R facilities for public transport users. Link Parking policy to nudge car drivers to use bikes (no parking space or very expensive). Internal challenges to nudge employees and/or students to prefer active mobility.
Links to further information	Nudging green mobility: A comparative analysis on various nudges for mobility behaviour in the city of Turku. Link

Launch the nudges and monitor the effectiveness

When putting the nudges into practice, make sure to communicate them clearly, including their benefits. You might also want to test them in a small trial first before rolling them out on a bigger scale. Then measure the success through observations, surveys or alike and gather feedback. This works the best if you can compare your nudged group to a group that was not affected by the intervention. Pay a special attention to possible unintended consequence on your target group and beyond for the entire population.

Refine the nudges based on data and insights

If your nudge was a success, use the learnings to develop it further. You might want to change small elements and see how they influence the behaviour, or you might want to roll it out on a bigger scale.
If it didn't work well, then make sure to look at what you can learn to reassess it: Was the nudge noticed? Were there problems in the coordination or implementation? Understanding behaviour is complex and it most likely needs several iterations to be successful.

It can be concluded that nudges represent an effective policy intervention tool in the field of mobility, with the potential for broader application when tailored appropriately *(Junghanns, 2024)*. **Nudges are a complement to the traditional policy instruments rather than a substitute for coercive measures** (laws and regulations) and **economic tools** (e.g. fiscal incentives, subsidies, taxes or fees).

Changing the physical environment have been reported as one of the most effective instruments to influence travel behaviour, especially in combination with other instruments.

For example, road planning with lines, colours, signs and humps that may greatly influence driving speeds, driving patterns and in general guide the flow of traffic. Policy packages to promote better choice in private mobility are considered a critical success factor for using nudge. This is because mobility behaviour is complex and influenced by a great number of parameters, starting from where the location of home is, the daily routines of people and the transport options offered by public and private actors *(Lehner et al, 2016)*.

Image by Amy Gunn. LED Green Wave Technology, signaling green wave to commuters.

Based on the synthesis of findings across the studies, following table 2 summarizes guidelines for planners who are interested in implementing nudging interventions to promote sustainable mobility.

Table 2. Guidelines for nudging

Guidelines for implementing nudging	
1. Personalization	Tailor interventions to individual preferences, travel patterns, and motivations. Personalized travel planning and route suggestions have shown promise in influencing behaviour.
2. Leverage Mobile Technology	Utilize smartphone applications as a platform for delivering nudges, as they allow for real-time interventions and data collection.
3. Combine Nudge Types	Implement a mixed approach that combines different types of nudges (e.g., educative, social reference, environmental, and incentive) to address multiple aspects of decision-making.
4. Provide Immediate Feedback	Incorporate features that give users immediate feedback on the environmental impact of their choices to reinforce sustainable behaviours.
5. Foster Community Engagement	Utilize social reference nudges and community challenges to create a sense of collective effort towards sustainable mobility.
6. Consider Long-term Effects	Design interventions with long-term behaviour change in mind, addressing potential habituation effects and sustaining motivation beyond initial engagement.
7. Adapt to Local Context	Tailor interventions to the specific geographic, cultural, and infrastructural context of the target area.
8. Ensure Ethical Implementation	Consider privacy concerns and avoid negative social pressure when implementing social reference nudges.
9. Integrate with Existing Systems	Design nudging interventions to complement and integrate with existing transportation infrastructure and services.
10. Monitor and Evaluate	Implement robust monitoring and evaluation processes to assess the effectiveness of interventions over time and across different user groups.

Mixed approaches were rated as highly effective but with moderate to high resource requirements. Incentive nudges showed some evidence of seasonal variation and had high resource requirements. Environmental nudges had the lowest resource requirements but were rated as only moderately effective.

Implementation and Monitoring

For monitoring the effectiveness of engagement related activities, it is recommended to use the "YRAM Monitoring Guidance user manual" by Gdańsk University of Technology *(Oskarbski et al, 2024).* The YRAM Monitoring Guidance is designed to assist public authorities in effectively monitoring active mobility and evaluating the impact of various interventions. The guidance focuses on identifying the necessary data required to estimate key performance indicators (KPIs) and methodologies for assessing these KPIs.

KPI-s related to citizen activation

Level of service for pedestrians and cyclists

The measured (i.e., counted) number of pedestrians and bicyclists in a specified area for a designated period of time

Physical activity level per capita, the portion of the population that is physically active, health attributes

The proportion of total trips by transportation mode

The perceived satisfaction of public spaces.

Security perception, volume/speed values, reported perception about crime-related security in the city transport system (including freight and public transport, public domain, bike lanes and roads for car traffic and other facilities such as car or bike parking)

Comfort during active mobility

Satisfaction from participating in active mobility

Attitude towards active mobility

The commercial impacts (e.g., change in revenue, spending habits) and the ability to access retail establishments (e.g., the mode used to access the establishment) by pedestrians and bicyclists as a result of transportation investment

The YRAM Monitoring Guidance appendix 1 specifies the required data, calculations, data sources, and whether the KPI is weather or lighting-dependent for each KPI.

Also, monitoring process description can be found from ***the YRAM Monitoring Guidance.***

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Examples from BATS pilots

Examples from Gdynia (Poland)

- The first BATS experiment was the campaign focusing on promoting YRAM among kindergarten and primary school children and their parents. **Campaign "Sustainable Mobility for Kindergartens and Schools" autumn and winter edition** took place from October to December 2024.

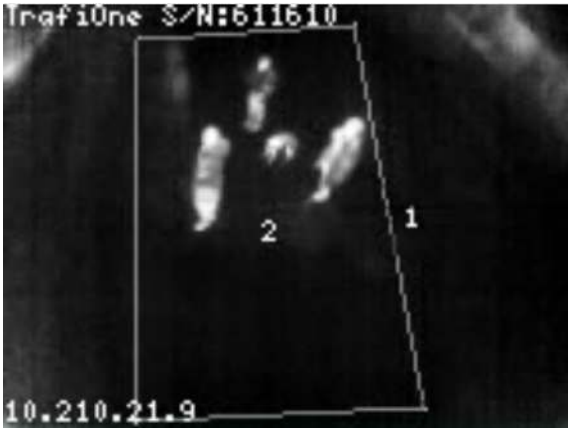
The campaign has been carried out in Gdynia for twelve years, but until the BATS project only in summer and spring time. The autumn and wintertime pilot focused on the promotion of year-round active mobility in 8 educational institutions, including 4 kindergartens and 4 primary schools (0-grade).

- Stage one - preparation and distribution of promotional and educational materials

- Stage two – active mobility, cycling and scootering to schools and kindergartens
- Stage three – workshops in schools and kindergartens
- Stage four – analysis of follow-up surveys with children, parents, teachers

Based on the presented data, an increase in the share of walking (+4.5%), public transport (+4.3%), car (+2.3%) and combining walking and car trips (+1.6%) was observed. On the other hand, a significant decrease was recorded in the use of bicycles and scooters (-12.7%). The observed results indicate that the choice of bike or scooter is strongly dependent on the season and weather conditions.

- The second BATS experiment in Gdynia is focused on one intersection of the R10/13 (EV10/13) route and testing the instalment of detection methods - thermal imaging sensors counting the number of pedestrians and cyclists and recognising them when approaching an intersection.



Based on the results, introduction of methods of dynamic traffic signal control considering specific groups of travellers and weather conditions. Optimizing traffic signal program and improving conditions for active mobility.

Examples from Hamburg-Altona (Germany)

- The first BATS experiment is focused on adding specific protective elements to the new cycling lane to increase perceived (and real) safety by cyclists that are also optimised for dark hours and winter conditions.

For the engagement of citizens, On-spot survey on perceived safety of cyclists and pedestrians on BATS pilot site in the Reventlowstreet in Hamburg-Altona was done.

In a morning and afternoon public engagement session in early March 2025 the Hamburg team wanted to know from cyclists and pedestrians, how they feel about the renewal of the main intersection in the Reventlowstreet.

Especially if the newly installed Protective Elements have improved their perceived safety. Within the quick survey of six main questions, the slightly elevated bicycle path in the middle of the road was also in focus, as it is an absolute novelty and unique in Hamburg. Over 120 people participated. While the overall feedback was positive (over 80% of cyclists felt safer than before the renewal, 50% of pedestrians felt safer than before) also helpful views and remarks were received on where adjustments are needed.

As a thank you, each participant received an organic apple with BATS Logo, as well as one of holographic stickers and a BATS postcard with further information about the project.

Overall, the survey was a great success and a nice way to get direct and meaningful feedback from everyday users of the intersection.

- The second BATS experiment in Hamburg-Altona is focused on specific light interventions (e.g. hanging light/projections/ "gaming“) to help to overcome feelings of fear and discomfort.

Examples from Kalundborg (Denmark)

- The first BATS experiment focuses on creating a continuous bicycle connection between Kalundborg City and Campus / Biotech City, which is used all year round. This will include setup and testing of innovative facilities aimed at improving the convenience for cyclists in adverse environments.

- The second BATS experiment will focus on increasing safety through better lighting on this dark part of the connection between Kalundborg City and Campus/Biotech city.

- The third BATS pilot will be carrying out a campaign to increase citizens' awareness and willingness to cycle all year round. The campaign must also draw attention to the bicycle connection between Kalundborg city centre and the campus / biotech city. The local campaign will use the Danish national campaigns for students *Touring together*, biking to work *We bike to work*, and winter biking.

Online survey was conducted in the end of 2024 to provide Kalundborg Municipality with a stronger foundation for future transport planning and to determine what measures are needed to encourage more citizens to choose cycling over driving. A total of 364 people participated in the survey. The results indicated that transportation infrastructure and safety have a significant impact on people's choice of transportation. Many are dependent on cars, but there is an interest in cycling more if the infrastructure improves. The three most common reasons respondents do not choose to cycle in their daily lives are: the distance between home and workplace/study, poor weather conditions, and a general preference for a more convenient mode of transport. Increasing the number of bicycle lanes, better maintenance and improved lighting were mentioned as the most important measures that could encourage more people to choose cycling.

This means that Kalundborg Municipality can strengthen cycling by:

- Creating more and wider bike lanes, especially on dangerous stretches.
- Improving maintenance, including better salting and snow removal in winter.
- Increasing lighting on cycling routes so more people feel safe, especially during the dark winter months.

Examples from Kiili (Estonia)

- The first BATS experiment focuses on campaigning and awareness raising activities together with and in the local school to show possibilities and engage students and staff to walk and cycle more.

Engagement of Kiili's high school students (and their parents and teachers) in special event for increased active mobility (bicycling) through organizing a Cycling Day *"Rattarõõm"* – Joy of cycling.

Cycling Day was organized in the end of April (2025) which in Estonia usually marks the beginning of cycling season.

Cycling day had different events and attractions for increasing participation:

1. Bycycle maintenance
2. Setting up a bycycle track
3. Obstacle courses, cycling games
4. Sport shop point of sale
5. Snack cafe
6. Rap artist säm

Cycling day was the main event of Cycling week in Kiili which was promoted in municipal social media and newspaper.

- *The second BATS experiment will investigate existing infrastructure maintenance in Harjumaa analysing the pedestrian and bicycle (mostly shared) street design principles for better winter maintenance in this area. It will include mapping of maintenance problems in cooperation with local municipalities and preparing the recommendations for street design to facilitate winter maintenance + minimum requirements for active mobility infrastructure maintenance.*

Examples from Klaipeda (Lithuania)

- The first BATS experiment focuses on installing lights that display traffic signs that reflect in the snow, or any other road surface. That increases the safety of the traffic, which can increase the usage of bicycles in the non-season.

The process involved discussions with Lithuanian Cyclists Association (end of Dec 2024) and municipality and procurements for both projectors and cycle lane separators.

First test

Second test

The first test for installation of projection lights for increased perceived safety in the dark was found unsuccessful due to low visibility of the projected lights.

- The second BATS experiment focuses on installing the weather monitoring station that measures the pavement surface condition and displays real-time information on the dashboard and online. The goal is to increase the safety of the traffic and the usage of bicycles in the non-season.

Examples from Porvoo (Finland)

- The first BATS experiment will focus on the preparation of the gamified 3D modelling of Porvoo's new walking and cycling bridge with the focus on winter conditions and use. The virtual reality model serves as a platform for digital interaction that supports political decision-making and resident participation. The 3D model will be used to collect user opinions to support the design and implementation of the bridge. The 3D model can be connected to City of Porvoo 3D model, thereby forming part of the wider city planning toolkit.

- In the second BATS experiment the new framework for winter maintenance and monitoring by winter agents will be developed and piloted in winter 2024-25 and the full citizen engagement to the programme will be conducted in winter 2025-26.

Examples from Umeå (Sweden)

- The first BATS pilot case in Umeå explored how better communication with the public regarding winter maintenance, e.g. with real-time information about which bicycle-roads are being ploughed first, will improve cycling conditions during wintertime.

The objective was to improve winter maintenance services through better communication and feedback loops with citizens.

The first BATS pilot in Umeå aimed to improve winter cycling conditions by enhancing communication with the public. All feedback was submitted through Umeå Municipality's error reporting system, where a specific category for "Winter Scouts" was created. This contributed to those working with winter maintenance to involve citizens' opinions to a greater extent. In return, participants received quick responses, prioritised attention to their feedback, a goodie bag as a thank you for participating and they were also asked to complete a final survey at the end of the project.

- The second BATS experiment aimed to explore innovative solutions for enhancing traffic safety using lighting technology. One of the key features being tested was the projection of road markings directly onto the ground, using visual cues to clearly indicate pathways for pedestrians and cyclists (similar to Klaipeda).

This approach seeks to improve visibility and safety, even under challenging winter conditions. In the future, it could be possible to apply this technology in other places in the municipality.

The objective was to increase number of cyclists and pedestrians during winter season by making it safer. Reflective light projections are meant to increase traffic safety, provide information and awareness of the locations of walking and biking paths.

- The third BATS experiment was a Campaign to offer citizens the opportunity to loan electric bikes, free of charge, to promote YRAM. The aim was to encourage citizens to try a new mode of transport relatively long-term that would lead to new sustainable travel habits. It was done in collaboration with bike shops that store the bikes and repair them while Umeå oversaw bookings etc.

Activity started with a pilot group of people working in Volvo.

Checklist for creating a campaign

based on the material from BATS partner Umeå

Description of workflow (choose one)

- Work out a concept together with the procured agency
- Procure a consultant/agency that, in competition with others, can present a proposal. If you decide to make a procurement, there is good support available in that process from the municipality's procurement department.
- Develop the concept yourself and run the campaign with support from the agency or communications unit.

Preparations

- What skills (e.g. communicator, traffic planner, administrator) are needed and who should be involved in implementing the campaign?
- If additional people need to participate in the implementation, then make sure that everyone reserves the time in the calendar.
- Distribute tasks and schedule reconciliation meetings. Feel free to create an activity document in OneNote or Teams with meeting notes and other notes.
- Use “Report Template" and start filling in what is possible in the planning stage.
- Check with your manager if the activity takes place in the evening or weekend when participating staff are to receive overtime pay.

Communication plan

- Advertisements must be booked well in advance by the agency or the municipality's communicator.
- If printed matter such as flyers and posters are needed, it must have time to be produced, printed and delivered.

Permit application

- Is a police permit needed to use a specific location?
- Or permission needed to carry out any photo/film work?
- Apply well in advance, at least 4 weeks before implementation

Report

- Document your activities
- If photography is carried out during the event, make sure that the images are GDPR secured.

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Appendix 1

Modular Citizen Survey questionnaire template for YRAM

Description of survey

This is a modular template for a questionnaire that targets citizens and could be used as an inspiration to conduct a survey within a certain city or area.

The questionnaire consists of six blocks: Travel habits, Motivation for active mobility during winter, Safety for cycling and walking all year round, Community engagement, Satisfaction and Background information. Below a description of each block is provided.

The idea is not to use all the blocks in one survey. Instead, it is recommended to use up to two blocks along with the Background information block. Choose the blocks based on what type of data is relevant to collect in the city or area.

It is important to make sure that the questions are adjusted to fit into the local context. For example, what is defined as summer and winter in the region, currency and the type of modes of transport available within the city or area where the survey is conducted. And if there is no snow or ice during the winter in the local context, update the options about snow and ice removal to a more suiting option. Also, make sure to include an introduction of the survey and explain why the survey is conducted and what the responses will be used for.

The text written in *italic* in the modular questionnaire is a description and should be deleted before the survey is opened for respondents.

Travel Habits

The travel habits block collects information about the respondents' travel habits during the winter compared to the rest of the year. This block does not focus on how often the respondent walk or cycle but rather creating an overall picture about what is their most frequent journey and how long it is there and what mode of transport their predominantly use comparing winter and summer.

The purpose of this block is to gain an understanding of different target groups and their behaviours within the region or area where the survey is conducted. It identifies which target groups to focus on to promote year-round active mobility (YRAM). For example, those who live within a certain distance and occasionally take the bike or walk to their most frequent journey could be considered "low-hanging fruit" and more easily influenced.

This block consists of eight questions.

Motivation for active mobility during winter
The purpose of this block is to gain an understanding of the respondent's motivations and barriers to walking and cycling during the winter. The block will give an insight into target groups different motivators and barriers for active mobility during the winter. Additionally, it will show what could encourage the target groups to walk or cycle more often. For example, depending on the specific motivators and barriers a certain target group has, campaigns could be designed and adjusted accordingly to encourage YRAM.

This block consists of nine questions.

Safety for cycling and walking all year round
The purpose of this block is to gather specific examples from respondents' daily routes and identify areas where safety improvements are needed. For instance, a respondent might indicate that a specific tunnel feels unsafe, and a potential solution could be improved lighting.

This block aims to gain an understanding of different target groups and their safety concerns within the city or area where the survey is conducted. It identifies which areas to focus on to enhance safety for the users. Using a heat map allows respondents to easily pinpoint specific locations on a map rather than providing an address, which the respondent might not know. The heat map reduces the risk of respondents skipping the question or not completing the survey. Although a heat map cannot be provided in this template. If that would be interesting in your case, ask a statistics or GIS team for support.

This block consists of eight questions.

Community engagement
The purpose of this block is to create an overview of the different movements and communities where the respondents live. It gathers an understanding of how aware the respondents are of these movements and how much they engage in them.

By knowing the extent of respondents' engagement in these activities, one can identify which target groups or organizations are active or not. With information about which local organizations are likely to encourage YRAM or raise awareness about YRAM or the climate for example, a collaboration could be initiated. This provides an opportunity to ask these organizations what they think could be done in the city or the area to encourage YRAM. Additionally, understanding what motivates respondents to participate in community activities can help design campaigns to encourage YRAM.

This block consists of five questions.

Satisfaction
The purpose of this block is to collect a brief status of respondents' satisfaction with the cycling and walking infrastructure. This block aims to gain an understanding of different

target groups' perceptions and experiences within the city or area where the survey is conducted. It identifies which areas to focus on to improve infrastructure. For example, those who express dissatisfaction with certain aspects of the infrastructure could be targeted for specific improvements to enhance their experience and encourage more frequent use.

This block consists of four questions.

Background information
This block aims to gather information about respondents' demographics, household composition, and the types of transport they have available. Using this information together with information from the other blocks campaigns could be targeted on certain household compositions within a certain geography.

This block consists of twelve questions.

Travel Habits

1. **What is your most frequent journey?**
   - To work/school/university
   - To leisure activities/daily errands/friends
   - To places for recreation and well-being
   - Other, please specify:

2. **Approximately, what is the distance of your most frequent journey (door to door)?** If the distance varies, choose the most frequent distance.
   - Less than 3 km
   - 3-5 km
   - 6-10 km
   - 11-20 km
   - 21-50 km
   - More than 50 km
   - I don't know

3. **How do you most often travel to and from work, studies, or other activities that you regularly visit, during the winter?** By winter we mean October to March

Choose the option you use most frequently.

- On foot
- Bicycle
- Public transport
- Car alone
- Car with members from the household
- Carpooling (through an app or an agreement with colleagues/neighbours or others)
- By a combination of several modes of transport
- Other, please specify:

4. **Which modes of transport do you combine during the winter?** By winter we mean October to March

This is a conditional question to question 3. If the respondent has answered "By a combination of several modes of transport" this question will show.

Select the options you combine:

- On foot
- Bicycle
- Public transport
- Car alone
- Car with members from the household
- Carpooling (through an app or an agreement with colleagues/neighbours or others)

5. **How do you most often travel to and from work, studies, or other activities that you regularly visit, during the summer?** By summer we mean April to September

Choose the option you use most frequently:

- On foot
- Bicycle
- Public transport
- Car alone
- Car with members from the household
- Carpooling (through an app or an agreement with colleagues/neighbours or others)
- By a combination of several modes of transport
- Other, please specify:

6. **Which modes of transport do you combine during the summer?** By summer we mean April to September

This is a conditional question to question 5. If the respondent has answered "By a combination of several modes of transport" this question will show.

- On foot
- Bicycle
- Public transport **to add options relevant to region e.g. bus, tram*
- Car alone
- Car with members from the household
- Carpooling (through an app or an agreement with colleagues/neighbours or others)

7. **Choose the modes of transport below that are accessible to you within a 15-minute walk from your place of departure/home during winter and indicate how often they are available. If a mode of transport is not accessible within 15 minutes, choose" Never available".** By winter we mean October to March

For each mode of transport below, you can choose from the following options:
Always available, Often available, Sometimes available, Rarely available, Never available, I don't know.

- Bus/tram
- Metro
- Train
- Car sharing system
- Bicycle sharing system
- E-scooter sharing system

8. **Choose the modes of transport below that are accessible to you within a 15-minute walk from your place of departure/home during summer and indicate how often they are available. If a mode of transport is not accessible within 15 minutes, choose" Never available".** By summer we mean April to September

For each mode of transport below, you can choose from the following response options:
Always available, Often available, Sometimes available, Rarely available, Never available, I don't know.

- Bus/tram
- Metro
- Train
- Car sharing system
- Bicycle sharing system
- E-scooter sharing system

Motivation for active mobility during winter

9. **How often do you cycle on the following occasions during winter?** By winter we mean October to March

Matrix question

For each statement below, you can choose from the following options:
Every day, Several times a week, Once a week, Once a month, Less frequently, Never.

- To and from work/school/university
- To and from leisure activities/daily errands/friends
- For exercise, recreation and well-being

10. **What factors, if any, influence on how often you cycle during winter?** By winter we mean October to March

Please select up to three options:

- Level of snow and ice removal on cycle paths
- General condition of the cycle paths (e.g., potholes, cracks, uneven surfaces etc.)
- The general of lighting on the cycle paths
- Access to secure bicycle parking
- Access to weather-protected parking for the bicycle (garage or bike shelter)
- Access to equipment for winter cycling (e.g., winter gear for the bicycle and/or winter clothing)
- Access to changing/shower facilities at the destination
- The experience of safety in traffic
- Fear of slipping on the ice or on slippery surfaces
- Noise levels (from traffic)
- Possibility of transporting goods on the bicycle
- Possibility of transporting children on the bicycle
- Possibility combining cycling with public transport
- My appearance when arriving at the destination
- The distance to the destination
- I don't know
- Other, please specify:

11. **What factors, if any, affect your experience of safety when cycling?** By winter we mean October to March

Please select up to three options.

- The amount of motor traffic
- The amount of heavy motor traffic
- Intersections
- Encounters with other cyclists in shared spaces and/or on the cycle paths
- Encounters with e-scooters in shared spaces and/or on the cycle paths
- Encounters with pedestrians in shared spaces and/or on the cycle paths
- Lack of physical barriers separating cyclists from motor traffic
- The number of cycle paths
- The amount of signage
- The amount of lightning
- The width of cycle paths
- I don't know
- Other, please specify:

12. **Please describe how the factors you chose in the previous question affect your experience of safety when cycling.**

This is a conditional question to question 11. If the respondent has answered on any of the options except "I don't know" this question will show.

Open answer

13. **Which of the following options could encourage you to cycle more frequently during winter?** By winter we mean October to March

Please select up to three options.

- Owning a bicycle
- Owning an electrical bicycle
- Owning a cargo bike
- Owning winter gear for the bike and/or winter clothing
- Employer benefits (e.g., benefit bike and/or wellness hour)
- Snow- and ice-free cycle paths
- Access to weather-protected parking at my destination
- Opportunity to change clothes and/or shower at my destination
- Access to bicycle-sharing systems
- Increased knowledge about winter cycling
- Improved personal fitness
- Improved mental health
- Saving money
- Reduced emissions
- I don't know
- Other, please specify:

14. **How often do you walk on the following occasions during winter?** By winter we mean October to March

Matrix question.

For each statement below, you can choose from the following options:
Every day, Several times a week, Once a week, Once a month, Less frequently, Never.

- To and from work/school/university
- To and from leisure activities/stores/friends
- For exercise, recreation and well-being

15. **What factors, if any, affect how often you walk during winter?** By winter we mean October to March

This is a conditional question to question 12. If the respondent has answered " Once a week", "Once a month", "Less frequently" or "Never" this question will show.

Please select up to three options.

- General condition of the pedestrian paths (e.g., potholes, cracks, uneven surfaces etc.)
- Level of snow and ice removal on pedestrian paths
- The general of lighting on the pedestrian paths
- Availability of equipment for walking during winter (e.g., winter clothing, shoes etc.)
- Access to changing and/or shower facilities at the destination
- The experience of safety in traffic
- Possibility in transporting goods
- My appearance when arriving at the destination

- The distance to the destination
- I don't know
- Other, please specify:

16. **What factors, if any, influence your experience of safety when walking?** By winter we mean October to March

Please select up to three options.

- The number of motor traffic
- The amount of heavy motor traffic
- Intersections
- Encounters with cyclists in shared spaces and/or pedestrian paths
- Encounters with e-scooters in shared spaces and/or pedestrian paths
- The number of crosswalks and pedestrian signals
- Lack of physical barriers separating the pedestrian paths from the motor traffic
- The number of pedestrian paths
- The amount of signage
- The amount of lighting
- The width of shared spaces and/or pedestrian paths
- I don't know
- Other, please specify:

17. **Please describe how the factors you chose in the previous question affect your experience of safety when walking.**

Open answer

18. **Which of the following options could encourage you to walk more frequently during winter?** By winter we mean October to March

Please select up to three options.

- Owning equipment for walking during winter (e.g., winter clothing, shoes etc.)
- Employer benefits (e.g., wellness hour)
- Snow- and ice-free pedestrian paths
- Opportunity to change clothes and/or shower at my destination
- Improved personal fitness
- Improved mental health
- Saving money
- Reduced emissions
- I don't know
- Other, please specify:

Safety for cycling and walking during the winter

19. **How often do you cycle on the following occasions during the winter?** By winter we mean October to March

This question is also in the block "Travel habits". If both blocks are included in the survey, make sure it is only asked ones.

Matrix question

For each statement below, you can choose from the following options:
Every day, Several times a week, Once a week, Couple of times a month, Less frequently, Never.

- To and from work/school/university
- To and from leisure activities/daily errands/friends
- For exercise, recreation and well-being

20. **Consider the route to your most frequent destination when cycling during the winter. How would you rate your overall experience of safety when cycling this route?** By winter we mean October to March

This is a conditional question to question 19. If the respondent has answered " Every day", "Several times a week", "Couple of times a week", "Couple of times a month" this question will show.

- Always safe
- Most often safe
- Neither
- Not so often safe
- Never safe
- I don't know

21. **Is there a specific location that makes you feel less safe on that route? If yes, please specify where that location is and describe why.**

This is a conditional question to question 20. If the respondent has answered "Most often safe", "Neither", "Not so often safe", "Never safe" this question will show.

To this question a map of the specific city/area could make it easier for the respondent to mark the location on the map and is recommended.

Open answer

22. **Could any of the following options contribute to make you feel safer on your most frequent destination during the winter?** By winter we mean October to March

This is a follow-up question to question 21.

Please select up to three options.

- Less amount of cars
- Less amount of heavy traffic
- Lower speed limits
- Separated car traffic from the cycling paths
- Improved snow and ice removal of the cycle paths
- Improved lighting on the cycle paths
- Improved quality of the cycle paths (e.g., smooth and comfortable to cycle on)
- Improved signage on the cycle paths
- Secure bicycle parking
- More people on the route
- Other, please specify:

23. **How often do you walk on the following occasions during the winter?** By winter we mean October to March

This question is also in the block "Travel habits". If both blocks are included in the survey, make sure it is only asked once.

Matrix question

For each statement below, you can choose from the following options:
Every day, Several times a week, Once a week, Couple of times a month, Less frequently, Never.

- To and from work/school/university
- To and from leisure activities/daily errands/friends
- For exercise, recreation and well-being

24. **Consider the route to your most frequent destination when walking during the winter. How would you rate your overall experience of safety when walking this route?** By winter we mean October to March
    - Always safe
    - Most often safe
    - Neither
    - Not so often safe
    - Never safe
    - I don't know

25. **Is there a specific location that makes you feel less safe on that route? If yes, please specify where that location is and describe why.**

To this question a map of the specific city/area would make it easier for the respondent to mark the location on the map.

This is a conditional question to question 24. If the respondent has answered "Neither", "Not so often safe", "Never safe" this question will show.

Open answer

26. **Could any of the following options contribute to make you feel safer on your most frequent destination during the winter?** By winter we mean October to March

Please select up to three options.

- Less amount of cars
- Less amount of heavy traffic
- Lower speed limits
- Separated car traffic from the pedestrian paths
- Improved snow and ice removal of the pedestrian paths
- Improved lighting on the pedestrian paths
- Improved quality of the pedestrian paths (e.g., smooth and comfortable to walk on)
- Improved signage on the pedestrian paths
- A more crowded route
- Other, please specify:

Community engagement

27. **Are there any local movements or organizations in your area that promote active mobility or the environment?**

For example, environmental conservation societies or cycling or walking advocacy organizations.

- Yes
- No (If the answer is no, there will be no further questions about community engagement)
- I don't know

28. **Which of the following types of movements or organizations exist in your area?**

Select all that apply

- Public transport advocacy groups/organisations
- Pedestrian advocacy groups/organisations
- Cycling advocacy groups/organisations
- Environment groups/organisations
- I don't know
- Other, please specify:

29. **In the last year, have you participated in any of these movements or organizations in your area?**
    - Yes, actively
    - A few times
    - No

30. **How likely are you to participate in the local movements or organizations in your area?**
    - Very likely
    - Likely
    - Neither
    - Not so likely
    - Not at all likely
    - I don’t know

31. **What would motivate you to participate in local moments or organizations?**
    - Meet new people
    - Skill development
    - Making a positive change in the local community
    - Making a positive change in the world
    - Other, please specify

Satisfaction with walking and cycling infrastructure

32. **During the winter, how would you rate your experience with the cycling infrastructure in your area regarding:** By winter we mean October to March

Matrix question

For each statement below, you can choose from the following options: Very dissatisfied, Quite dissatisfied, Neither, Quite satisfied, Very satisfied, I don't know

- Snow and ice removal of the cycling paths
- Lighting on the cycling paths
- The amount of cycling paths
- Quality of the cycling paths (e.g., smooth and comfortable to cycle on)
- Signage on the cycling paths
- Bicycle parking

33. **During the winter, how would you rate your overall experience with the cycling infrastructure in your area?** By winter we mean October to March
    - Very dissatisfied
    - Quite dissatisfied
    - Neither
    - Quite satisfied
    - Very satisfied
    - I don’t know

34. **During the winter, how would you rate your experience with the pedestrian paths in your area regarding:** By winter we mean October to March

Matrix question

For each statement below, you can choose from the following options: Very dissatisfied, Quite dissatisfied, Neither, Quite satisfied, Very satisfied, Don't know/No opinion.

- Snow and ice removal of the pedestrian paths
- Lighting on the pedestrian paths
- Availability of pedestrian paths
- Accessibility of the pedestrian paths
- Quality of the pedestrian paths (e.g., smooth and comfortable to walk on)
- Signage on the pedestrian paths

35. **During the winter, how would you rate your overall experience with the pedestrian infrastructure in your area?** By winter we mean October to March
    - Very dissatisfied
    - Quite dissatisfied
    - Neither
    - Quite satisfied
    - Very satisfied
    - I don’t know

Background information

36. **What is your gender identity?**
    - Female
    - Male
    - Non-binary
    - Prefer not to say
    - Other, please specify:

37. **How old are you?**
    - 17 and under
    - 18–23 years
    - 24–29 years
    - 30–35 years
    - 36– 41 years
    - 42– 47 years
    - 48– 53 years
    - 54–59 years
    - 60–65 years
    - 66 years and older

38. **What is your civil status?**
    - Single
    - Married or domestic partnership
    - Live-apart partner
    - Widowed
    - Prefer not to answer
    - Other, please specify:

39. **Are there any children in your household under the age of 18?**
    - Yes
    - No

40. How many children under the age of 18 live in your household?

This is a conditional question to question 38. If the respondent has answered "Yes" this question will show.

- 1
- 2
- 3
- 4 or more

41. **Where in [X] do you live?**

Options to this question should be determined by the city or municipality conducting the survey.

42. **Please indicate the total monthly income for all members of your household before taxes.**

Options to this question should be determined by the city or municipality conducting the survey to ensure the correct currency and options are within relevant scopes.

43. **What is your highest level of completed education?**
    - Incomplete primary education
    - Primary education
    - Secondary education (high school)
    - Bachelor's degree (or equivalent)
    - Master's degree
    - PhD

44. **What is your current employment status?**

If multiple options apply, select the one that best represents your main occupation.
    - Employed
    - Self-employed
    - Student
    - Retired
    - Unemployed
    - On parental leave
    - On sick leave

45. **Do you or anyone in your household own a car?**
    - Yes
    - No

46. **How many cars does your household own?**

This is a conditional question to question 44. If the respondent has answered "Yes" this question will show.
    - 1
    - 2
    - 3
    - 4 or more

47. **Do you or anyone in your household own any of the following means of transport?** *Matrix question*

For each statement, please select one of the following options: 1, 2, 3, 4 or more, None, I don't know.
    - Bicycle
    - Electric bicycle
    - Longboard and/or skateboard
    - Electric scooter
    - Electric wheelchair
    - Moped
    - Segway, hoverboard and/or similar

Appendix 2

A template for a focus group protocol

Aim: .....
Time and place: .....
Participants: *[consider if anonymization is needed]*
Moderators:

1. Introduction (ca 5-10 minutes)

- Welcome participants and introduce moderators.
- Explain the purpose of the discussion.
- Set expectations: open discussion, no right or wrong answers, all perspectives are valuable.
- Outline the structure and estimated duration (typically: 60-90 minutes).
- Obtain verbal consent for participation and, if applicable, audio recording.

2. Warm-up questions (ca 10 minutes)

- A round with participants' introducing themselves
- General introductory questions

  [examples:
  - How do you usually get around in your daily life?
  - What is one word that comes to mind when you think about walking or cycling in your neighbourhood? Etc]

3. Main discussion topics (ca 50-60 minutes)

Topics related to the main aims of the session, phrased in an open and encouraging manner

4. Closing and next steps (ca 10 minutes)

- Summarize key points discussed.
- Ask participants if they have any final thoughts or suggestions.
- Explain how their input will be used and any follow-up actions.
- Thank them for their participation and provide contact information for further engagement.