

## SMALL Insights

# How can people with reduced mobility become an important driver of shared mobility?



**Publication date:**  
September 2023

Interreg  
North Sea



Co-funded by  
the European Union

SMALL

# About SMALL

SMALL is a European collaboration of municipalities, research institutes and companies who want to make sustainable shared mobility options inclusive and accessible for all users, including those with reduced mobility.

Our project stands for **Shared multimodal Mobility Accessible to ALL (SMALL)**.

As the name suggests, SMALL came to life for one specific purpose: to support the development and implementation of shared mobility solutions that are readily accessible to everyone in the European North Sea region. While at first this might seem straightforward for a project on

sustainable mobility, our mission is quite unique, as it aims to fill a significant gap that exists in the current shared mobility context: to make these novel services accessible to everyone, including people with reduced mobility.

This category includes a number of individuals, such as families and children, the elderly, and people with physical disabilities, who hold specific mobility needs, yet are not taken into consideration in the design of sustainable shared travel solutions.

Our work is co-funded by **Interreg North Sea**.

Interreg  
North Sea



Co-funded by  
the European Union

SMALL

Co-funded by Interreg North Sea



# Table of Contents

---

<b>Summary</b>	<b>4</b>
<b>Glossary: Defining the terminology in SMALL</b>	<b>6</b>
<b>Participants List</b>	<b>8</b>
<b>Target Group 1: People with physical impairments</b>	<b>10</b>
<b>Target Group 2: Elderly people</b>	<b>14</b>
<b>Target Group 3: Families and children</b>	<b>18</b>
<b>Conclusion: Delivering the change we want to see in mobility systems</b>	<b>22</b>
<b>SMALL Library</b>	<b>24</b>

# Summary

In Europe, there is little to no research regarding the shared mobility needs and preferences of people with reduced mobility, a category which includes a number of individuals, such as families and children, the elderly, and people with physical disabilities.

Indeed, specifically for the latter, **there is a strong feeling these new mobility services are currently not designed and operated in a way that ensures equivalent access for them.**

However, as shared vehicles continue to take an ever more important role in the sustainable mobility transition, SMALL wishes to break the mould by showing that people with reduced mobility can, and should, be an active part of that movement. In other words, **we envision successful travel solutions that can also be used by people with reduced mobility.** To achieve this, we are deploying and testing inclusive shared mobility solutions and find out how they can best work for people with reduced mobility. But in order to do so effectively, we had to start from the basics, talking directly to those we are trying to serve to hear what they had to say on the matter.

## Hearing from the experts: SMALL asks its users

So we organised expert roundtables, convening a group of experts from diverse and varied fields related to inclusive mobility to give us valuable insights and help us really deliver on our stated mission.

For our 1<sup>st</sup> Expert Roundtable, we started with a basic yet fundamental question: **how can people with reduced mobility become an important driver of shared mobility?**

Meaning, how can people with reduced mobility be included and recognised as a vital aspect of shared mobility design and implementation?

We approached this question from three distinct perspectives:



Fact-checking our selected target groups and identifying their needs



Understanding how we can generate effective co-creation strategies and engage with the target groups in each of our pilots



Support the development of a SMALL observatory identifying best practices of inclusive shared mobility solutions

Experts who participated in the roundtable included:



Individual advocates representing people with reduced mobility



European NGOs and associations representing people with reduced mobility



Researchers and experts focusing on accessibility in transportation



Shared mobility providers



Public transport operators

By bringing together a diverse group of stakeholders, all with relevant knowledge on the topic, we sought to get the full picture of the inclusive mobility landscape and what we would need to take into account when designing shared solutions that can work for people with reduced mobility.

The event was successful thanks to the experts' enthusiastic contributions and willingness to support our cause, which were consolidated in the development of a SMALL expert community comprising the experts and our consortium to support the development of the project.

Insights from the first Expert Roundtable are recorded and further analysed in this paper.

The aim of the document is to fill the information gap on people with reduced mobility and shared mobility, providing a unique perspective into the needs of these individuals when it comes to active mobility options, and how they can be effectively engaged with in a way that makes them part of the solution, and not just an afterthought.

This will be useful not just to the SMALL consortium and their pilots, but also to policymakers, mobility providers, and other stakeholders across the North Sea region, who may have started to think about the topic but do not yet know how to approach it.

Lastly, we seek to build on similar initiatives that have started to identify good practices in inclusive mobility, listing them at the end for future use and aligning them to best fit our mission.

# Glossary:

## Defining the terminology in SMALL

---

As mentioned, the first step towards defining the scope of SMALL's action was to identify and define our target groups. Indeed, when talking about the concept of inclusive shared mobility for all, the statement remains quite broad.

We made a first attempt of narrowing down our target by focusing on groups in society that are vulnerable to exclusion, who are confronted with physical and/or digital barriers to accessing shared mobility - we then classified these groups more succinctly as people with reduced mobility.

However, even this category includes a wide and diverse range of people, begging the question: which groups is SMALL really targeting when we say 'people with reduced mobility'?

Based on the initial definitions made by the partnership, and to make sure we would focus our efforts to make targeted, relevant impact rather than none at all, we decided that SMALL would focus on **people with physical impairments, elderly, and families and children**.

The aim of the first Expert Roundtable was to then confirm that the approach pilots were going to use to engage with these groups was correct by listening to the advice of our experts. Indeed, we

wanted to ensure we were using proper terminology: words are important, as are the narratives that are built from them, and using the right ones is a crucial starting point in supporting those we want to serve through the project.

The roundtable had a specific discussion session on acceptable terms, where some challenges linked to different languages were raised.

Indeed, terminology used in other languages to address members of groups that are vulnerable to exclusion could mean different things. A poor choice of words can lead to hindering, discrimination, and (re)victimisation of members of these groups.

Definitions for the target groups can be found below<sup>1</sup>, explaining the rationale behind our chosen terms and ensuring we are giving context to the groups we defined above.

This section provides a concise definition of the most relevant concepts and terms used within the SMALL project as well as the definition of SMALL's target groups:

---

<sup>1</sup> The definition of elderly used in this paper comprises a wide range of people with different mobility needs aged above 65 years old. We acknowledge that the specific mobility needs of people above this age might vary according to their general health condition, and therefore, impact the way they can use different shared mobility services. The SMALL project keeps this definition for the purpose of understanding how can the elderly, in a broader sense of the term, be engaged in the use of shared mobility services.

## Shared mobility<sup>2</sup>:

Defined as transportation services and resources that are shared among users, either concurrently or one after another. This includes public transit; micromobility (bike sharing, scooter sharing); automobile-based modes (carsharing, rides on demand, and microtransit); and commute-based modes or ridesharing (carpooling and vanpooling).

## Inclusive and accessible mobility<sup>3</sup>:

Defined as integrating a range of user needs across an entire traveling journey in ways which truly comprehend, appreciate and value their mobility requirements and aspirations.

## People with reduced mobility<sup>4</sup>:

This group includes every person whose mobility in transport is reduced due to any kind of impairment. Each impairment – be it temporary or permanent, physical, sensory, visual or cognitive – influences how the person interacts with the physical or digital context. Depending on the severity of their condition, people with reduced mobility may use public transportation in autonomy or with some kind of aid (a person or a device). In both cases, a higher level of guidance is needed to provide impaired people with appropriate information and access (low-floor vehicles, in-level access to stations, high-contrast screens, etc.), according to all special needs.

<sup>2</sup> Source: Shared Use Mobility Center (last accessed on 11/8/2023)

<sup>3</sup> Source: INTERTRAFFIC (last accessed on 11/8/2023)

<sup>4</sup> Source: Convention On The Rights Of Persons With Disabilities (CRPD) (last accessed on 11/8/2023)

## People with physical impairments<sup>5</sup>:

This term covers people with permanent and temporary physical disabilities who require assistance (wheelchair user, people with reduced vision, people using crutches, etc.), which is a subgroup of the broad term of people with reduced mobility. This subgroup, as well as others within the general category, are addressed within the transport domain literature with regards to spatial navigation, signage, route-planning, and rights.

## Elderly<sup>6</sup>:

People who are over 65 years old. Often, physical constraints affect travel behaviour and needs, especially when living alone and relatives are far away. The need to monitor health conditions is another important factor affecting travel choices, so easy access to healthcare services must not be neglected. Circumstances and life conditions can evolve rapidly, and the risk of social isolation is deeply increased by poor mobility choices. Moreover, a digital divide between older adults and younger people still exists. The elderly should receive appropriate training to develop the skills needed to access the digital world, and digital services should be designed in a way that is understandable and reliable for all users.

## Families and children<sup>7</sup>:

Parents / caregivers, family groups travelling with children, children up to eighteen years old. It considers the daily mobility needs of people who are care for children.

<sup>5</sup> Source: INDIMO project (last accessed on 11/8/2023)

<sup>6</sup> Source: Eurostat - A look at the lives of the elderly in the EU today (europa.eu) (last accessed on 11/8/2023)

<sup>7</sup> Source: <https://ipsn.euaa.europa.eu/ipsn-tool?q=ipsn-tool> (last accessed on 11/8/2023)

# Participants List

---

**Silke DE WAELLE**

G-Sport Vlaanderen  
Ghent, BELGIUM

**Merel VANSEVENANT**

Autodelen.net  
Ghent, BELGIUM

**Els VAN DEN BROECK**

Mobiel 21  
Leuven, BELGIUM

**Marien JOMIER**

EmTransit SPRL  
Brussels, BELGIUM

**Gabriela BARRERA**

Vrije Universiteit Brussel  
Brussels, BELGIUM

**Max WEHLIN**

Varbergs kommun  
Varberg, SWEDEN

**Daniel HERRERA**

POLIS Network  
Brussels, BELGIUM

**Isaura LIPS**

Mpact  
Ghent, BELGIUM

**Hannus KOK**

Vervoerregio Amsterdam  
Amsterdam, NETHERLANDS

**Marcel WIJNKER**

Inter  
Hasselt, BELGIUM

**Rob VAN DER BIJL**

Ghent University / Favas.net  
Amsterdam, NETHERLANDS

**Hilke VAN EVENEPOEL**

City of Leuven  
Leuven, BELGIUM

**Wim AUWERX**

Dito vzw  
Ghent, BELGIUM

**Koos FRANSEN**

STR.AAT  
Ghent, BELGIUM

**Bonnie FENTON**

Rupprecht Consult GmbH  
Köln, GERMANY

**Carlota INSERRA**

POLIS  
Brussels, BELGIUM

**Esen KÖSE**

Mpact  
Ghent, BELGIUM

**Saar FIVEZ**

De Fietsambassade Gent  
Ghent, BELGIUM

**Floridea DI CIOMMO**

cambiaMO  
Madrid, SPAIN

**Carmen BASKAUF**

VUB  
Brussels, BELGIUM

**Veerie DE MEYER**

City of Mechelen  
Mechelen, BELGIUM

**Maïte DEWINTER**

Ghent University  
Ghent, BELGIUM

**Amaury CHERCHOUR**

City of Saint-Quentin  
Saint-Quentin, FRANCE

**Jacqueline SCHEIDWEILER**

Brest Métropole  
Brest, FRANCE

**Hussein ZEIDAN**

Vrije Universiteit  
Amsterdam, NETHERLANDS

**Charlotte LJUNG**

Varbergs kommun  
Varberg, SWEDEN

**Lina KABBAJ**

POLIS  
Brussels, BELGIUM





*Photo of the participants from the SMALL 1<sup>st</sup> Expert Roundtable*

## How we've organised this report

In each of the following chapters, divided by target group, we explore specific questions pertaining to every group, in order to define targeted insights for all of them. General key insights gathered from the discussions as a whole are summarised in the conclusion. It is important to note that none of these categories and subcategories are mutually exclusive, and that they can (often do) overlap with each other.



# Target Group 1: People with physical impairments

---



## Who is the target group?

- **People with temporary disabilities:** caused by injuries or specific medical conditions (e.g. a temporary wheelchair user, a person using crutches, etc.)
- **People with hidden or chronic medical conditions:** such as heart issues, psychiatric disabilities, visual impairment, etc.
- **People with a combination of physical and mental disabilities**

## For what purposes do people with physical impairments travel?

Everyday mobility needs, such as leisure time, (voluntary) work, etc.

Mobility needs linked to personal care such as going to the doctor, going to school, leisure during rehabilitation time, etc. to continue being an independent individual.

## How do people with physical impairments perceive shared and multimodal mobility?

Shared mobility services are often perceived as not intended for people with reduced mobility.

The location of shared services is often perceived as not ideal: there is the need to think of shared mobility strategies that involve the user from the beginning to the end of their journey, thus requiring a complete visualization of the user's experience (in this case a person with a physical impairment) when using the service.

Stress is also an important factor to consider for people with physical impairments and the person accompanying them. Some common stressful situations involving traditional transport and that can be experienced when trying inclusive shared mobility services are:

- **On public transport, knowing that drivers are not obliged to help people with physical impairments.** This puts them off using the service unless they have someone accompanying them to help.
- **Those who do accompany people with physical impairments on public transport often feel stress** knowing they might not have enough time to comfortably support them in the process, such as not having enough time to put the ramp for them to wheel on.

This context requires thinking about what kind of support this target group really needs and how shared mobility services can be designed in a way that supports them while traveling rather than adding on to any stress.

## Key challenges

Shared mobility operators find it difficult from a financial point of view to change the location of their services or even to make the locations more accessible. However, this situation should not exempt the operators from providing the necessary means to improve the location and accessibility of shared mobility options. In this regard, subsidies from the city can play an important role to support the operation of inclusive shared mobility services.

Accessibility is a spectrum; certain target groups cannot be ignored just because they are not the majority of users. Instead, authorities and service providers must find a way to integrate them and provide a seamless operation.



## How can we ensure the stories of people with physical impairments are heard?

### How do we ask the right questions to the right people?

Engaging with existing disabilities organisations, support groups/advocates and online communities can be a valuable starting point for connecting with people with physical impairments.

Social media platforms and targeted surveys can also be very efficient for this target group.

Finally, if you manage to find participants for your physical event, simply make sure your engagement event or workshop is inclusive (e.g., wheelchair-friendly, close to public transport...) so you can attract a diverse range of participants that can foster meaningful conversations.



## Who are the changemakers for people with physical impairments and how should we involve them?

When establishing effective communication channels, very valuable insights can be gained from engaging with people with physical impairments. Consider using focus groups or user panels to ensure their voices are heard and they feel understood. Additionally, utilising technology platforms and digital tools can help facilitate remote participation, allowing for a wider reach. It is also important to address participation fatigue by offering incentives and demonstrating tangible benefits.

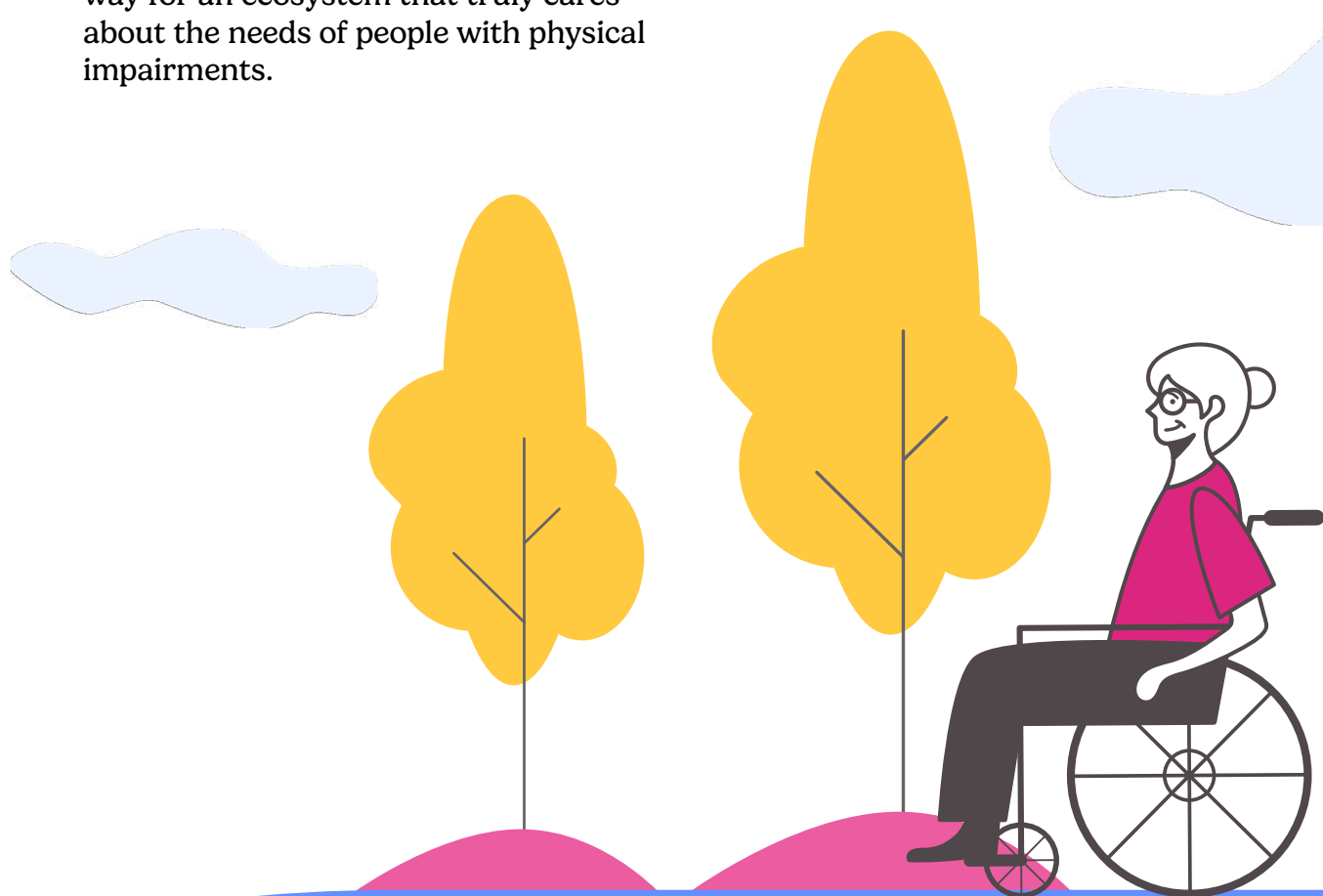
Also including the top-down perspective is very important here. One should involve policymakers, city authorities, and operators to establish supportive regulations and create space for adequate funding. This can pave the way for an ecosystem that truly cares about the needs of people with physical impairments.

## What needs to change in shared mobility for people with physical impairments and what are the main priorities for stakeholders?

Operators need to step back from the idea that focusing on this group will not have any economic impact on their business.

It is important to keep in mind that people with physical impairments often have a budget that they can invest in their travels as well.

Combined with the fact that this group often requires a public or shared transport solution, and there are significant opportunities to serve a new customer base.



# Target Group 2: Elderly people

---



## Who is the target group?

### **Elderly classified by mobility needs:**

those who want to become more mobile and those who want to make a modal shift.

### **Elderly classified by income:**

Those with higher income are usually linked to higher levels of education, which could positively impact their understanding of digital shared mobility solutions. However, it is also believed that a higher income is linked to higher car ownership, which could be a hurdle when convincing this specific target group to use shared mobility. Those with a lower level of income on the other hand could be associated with fewer digital skills, creating an extra hurdle for using shared mobility.

### **Elderly classified by health condition:**

Specific health conditions of elderly people are believed to be linked with how mobile they can be, therefore determining the type of shared mobility service they could use.

**Insight:** During the first SMALL expert roundtable, the expert discussions on this specific target group recommended that an inclusive shared mobility pilot targeting elderly people should direct its efforts towards low-income less digitally skilled people to guarantee accessibility for these groups, who are often more vulnerable.

## For what purposes do people with physical impairments travel?

Mobility needs linked to personal care such as going to the doctor, leisure and grandchildren responsibilities, doing groceries, and more. In-person socialising, vital to fighting isolation and the mental and physical problems that come with it.

Basic mobility needs to continue being an independent individual.

## How do the elderly perceive shared and multimodal mobility?

The elderly often see few or no mobility alternatives to their car. It is important to find ways to promote shared and multimodal mobility among this target group, who often rely heavily on private cars. An inclusive shared mobility solution that reduces the car ownership of this target group should be reliable and consistent in its operations.

- **Not all elderly people are sufficiently digitally skilled for shared mobility applications and digital services.** Even if they are, they might be scared when trying new apps, etc. due to legibility issues. If a shared inclusive digital mobility system is not built based on inclusive design principles, we can assume it will not be used by the elderly.
- **Shared mobility is often thought to be more flexible than public transport,** but the key is to make it reliable to cater to the SMALL target groups, particularly the elderly who can rely on their private car. It should be available on demand and when needed, making a reliable timetable a highly valued feature.

## Key challenges

### **Linked to public space:**

City centers are not accessible for inclusive shared mobility. Some physical adaptations should be made for these services so they can be more efficient.

### **Linked to vehicle access regulations:**

Access to the city center by car is becoming more restricted due to vehicle

access regulations. This impacts the elderly's mobility choices, as they rely heavily on private cars. There is a window of opportunity for inclusive shared mobility solutions to fill this gap; however, authorities should be flexible in the enforcement of access regulations towards shared mobility services by always granting inclusive shared mobility services to have full accessibility within the city, for instance.



**Human contact and communication:**

For shared mobility to be inclusive, there is the need to invest in human contact. On-street campaigns could be a good way to communicate, as well as the option to receive help through phone call. Cash payments should also be made available.

**Experience:**

Trusted people from the target groups should be seen using and testing the services. For this, it is important to involve the target groups' social circles.

**Clarity about cost and affordability:**

Service providers should offer clarity and reliability on the prices of their services.

## How can we ensure the stories of the elderly are heard?

### How do we ask the right questions to the right people?

Insights regarding elderly groups put more emphasis on the accessibility and inclusivity aspects of co-creation. It was acknowledged that no fixed solutions exist, since engaging with the elderly can be more challenging due to their high reliability on cars. It is important to explore whether ownership or sharing suits their needs best without pointing out explicitly their reduction of mobility.

Engagement with the elderly should trigger a positive effect for their self-image, providing empowerment, and instilling notions of pride instead of the feeling of being exposed or stigmatized. The aim is to integrate solutions into the co-creation process and find various methods to reach out to them, including consultations with representatives, encounters during city events or during their daily activities (e.g., at the grocery store), and punctual trials. However, when rolling out trials, their scalability in the lives of elderly people should be taken into consideration. It is important to keep in mind that there is more than just the trial phase and they still need solutions for every day. Logistical issues like how to pay for the solution after the trial has ended must be considered in the trial process.

Regularly bringing together diverse communities fosters a sense of shared responsibility, which can facilitate engagement with the elderly.



## Who are the changemakers for the elderly and how should we involve them?

When engaging with the elderly, it is vital to involve diverse groups and determine who is missing from the target audience. Digital skills and access to technology, cultural factors, language skills, and empathy were identified as key considerations. Engaging intermediaries and organizations working with the target group can help overcome these challenges. To address communication barriers, adapting language and providing clear explanations can also be effective. In regard to the topic of shared mobility, familiarising individuals with new concepts such as micromobility is also essential.

## What needs to change in shared mobility for the elderly and what are the main priorities for stakeholders?

The elderly and their carers or companions are often not aware of the variety of solutions that exist. Having relevant information can help them make more informed decisions rather than decisions based on need in a given moment. A lot of people have free access to public transport after a certain age, but the perception of public transport remains as expensive.

Besides that, operators and cities should not hold back to provide adjusted solutions for this group supporting their unique needs. For example, the elderly often use bikes to transport their groceries or as a support while walking rather than actually riding them. Engaging in conversations to identify

suitable solutions and after that, offering alternatives such as second-hand bicycles can be beneficial for the target group.

It is not a secret that social contact is very important for people of all ages. With the digital character of shared mobility, the match with this group seems to be difficult. However, even with digital solutions, it is possible to include human aspects, such as a helpdesk to call for assistance<sup>8</sup>. It is good to consider the establishment of social contact points with dedicated personnel to assist potential users with their travels. This tackles social isolation and exposes elderly people to non-car travel habits for a later stage of life when they may no longer be able to drive.

<sup>8</sup> INDIMO D1.4 Barriers to the design, planning, deployment and operation of accessible and inclusive digital personalised mobility and logistics services\_v2.0 (indimoproject.eu)



# Target Group 3: Families and children

---



## Who is the target group?

- **Children traveling with parents:** Divided in leisure trips and accompanying trips.
- **Children traveling without parents:** Mostly for home-school trips and school trips in general.
- **Families traveling with children on vacation:** Family groups who do not reside in the city and want to explore it.
- **Caregivers:** Those who accompany any of the above-mentioned groups.

## For what purposes do families and children travel?

- **School trips:** In France, children often have to travel during school time to other venues for activities such as having lunch, and other events commonly organized with nearby schools.

**Insight:** Active mobility will create better quality of life for children in the city in general but there will also be the need to educate children at schools on traffic rules.

- **Family trips:** These can be classified in two types, necessary trips and leisure trips. Necessary trips are usually linked to commuting to school, doctor's appointments etc, whereas leisure trips are linked to family vacations, visiting relatives, and leisure time in general.

**Insight:** It is important for parents to be aware of the different shared mobility options that are safe and suitable for their children.

## How do families and children perceive shared and multimodal mobility?

The perception overall is that shared mobility is not meant for children. In most cases, shared mobility options do not accommodate children, such as with smaller bikes.

There is a perception of the need to take extra caution and safety measures when including children in shared mobility. Whether it is for school trips or family trips, children need supervision from a caregiver. This also creates needs related to the flexibility of the services and their proximity to the potential users. These added needs are often perceived as a burden to the successful adoption of shared mobility for families and children.

Digital mobility solutions, e.g., journey planning apps, MaaS apps, and others, need to become more interactive and attractive for families and children to use: an app should be more than just information. Gamification could be a way to make these apps more appealing, educational, and user-friendly for parents.



## Key challenges

- **Parents are concerned** about the safety of their children while using shared mobility.
- **Adding an extra step during their leisure time** such as using a shared mobility app for families with children could be stressful for young families.

## How can we ensure the stories of families and children are heard?

### How do we ask the right questions to the right people?

In the context of families and children, questions arose about parental approval, divided group opinions, and the focus of co-creation activities. Engagement strategies should include involving teachers, directors, and ministers responsible for schools, leveraging gamification to influence parents' decisions, and exploring input from various stakeholders like local shops and leisure time services.

### Who are the changemakers for families and children and how should we involve them?

For families and children, engaging parents and obtaining their input at each step is important. Clear and transparent communication among different departments is crucial, as is involving other stakeholders such as local businesses and leisure time services. Engaging teachers, directors, and ministers responsible for schools can also be valuable as they are in continuous contact with this target

group, especially in the framework of shared mobility services implemented during school time.

## What needs to change in shared mobility for families and children and what are the main priorities for stakeholders?

Considering parent's impact on the travel choices of children, it is necessary that there is a change of perception with the parents towards more sustainable and shared solutions.

The main concern of parents is the safety of their children when they are travelling, with or without them. This is why parents tend to use the car as the first choice to drive their children to school or other leisure time activities.

Bikes were a focus point of discussions: How can we make sure to promote the bike as a valuable and safe travel option for children?



## The insights from the roundtable focus on three actions:

**1. Collaborate with relevant authorities to develop programs, such as bike trainings in schools.** In France, there is a program to promote cycling among children. Through this awareness campaign, children will be more comfortable using bikes.

**2. Working with volunteers can decrease car dependency.** In Barcelona, every week hundreds of children are guided to their schools by parent and teacher volunteers. The Bici bus<sup>1</sup> has shown its value through the safety that comes along with children cycling in groups and being under the supervision of adult cyclists.

<sup>1</sup> <https://www.reuters.com/business/cop/barcelonas-bike-bus-scheme-kids-encourages-green-transport-habits-2022-11-28/> (last accessed on 11/8/2023)

**3. Make sure to provide a fleet of bikes that is accessible for parents.** Buying a bike is often a burden for parents. In Belgium, 'Op Wielekes'<sup>2</sup> provides several bike libraries where parents can lease a bike custom for their children's needs. However, providing a bike fleet often brings along extra costs. These costs can be tackled through partnerships with stakeholders such as local industries, civil society organisations, and labour market to make this kind of solutions more scalable.

<sup>2</sup> <https://www.opwielekes.be/> (last accessed on 11/8/2023)



# Conclusion:

## Delivering the change we want to see in mobility systems

---

If shared mobility operators and policymakers wish to deploy truly inclusive shared mobility solutions that work for people with reduced mobility, they must take into the account the following:

### Listening to user needs:

Those who design shared mobility services often lack the perspective these users have, resulting in a lack of understanding of their daily lives and necessities. Before we convince end-users of the possibilities and the need for change, a perspective shift from possible changemakers is required.

A lot can be gained from just listening to the needs of end-users. This can help changemakers, such as cities and operators, create services that meet

at least the basic requirements for the end-users. However, even when there is a willingness to listen, challenges arise in obtaining sufficient responses from end-users within limited timeframes. Overcoming participation fatigue and obtaining the right information from end-users were also identified as challenges. Finally, while co-creation is important, it should be complemented by top-down approaches to establish legal frameworks, secure funding, and manage financial risks effectively.

### Unlocking the value of co-creation:

By engaging with end users in the design and implementation process of a shared mobility solution, we can ensure that their perspective is heard and represented, which will lead to more accessible and inclusive shared mobility in overall. Through social innovation and empowerment, co-creation can enable the creation of not only solutions, but a system that truly enhances the lives of people with reduced mobility.



## Understanding the financial challenge:

While each target group has their own key challenges linked to their specific needs, sometimes these can overlap, especially since these categories are not mutually exclusive and individuals can belong to more than one. One common challenge that came up in all discussions, and that must be taken into account at all times, is the financial challenge, where people with reduced mobility may not have the financial capacity to use shared mobility options. Questions need to be raised on what kind of solutions local governments can create to support users in this regard and make the service not just physically accessible, but also financially.

## Frequent and clear communication:

It is crucial that pilots inform their end-users about their existence and encourage interest. Having conversations in smaller groups allows for a more personal connection and creates opportunities for more community-based co-creation. However, the effort to make change and start conversations should also come from both the mobility operators and city sides. For example, sharing knowledge and acknowledging the thresholds within the public space that might be of value, is essential. We must also recognize that not all stakeholders may actively participate in co-creation processes: some may prefer to receive services without direct involvement, for instance.

## Raising awareness:

In regard to shared mobility, not everyone is aware or understands the concept. Before promoting shared mobility, it is essential for the operators and cities to be aware of the challenges and seize opportunities to make shared mobility accessible for all. Besides that, managing expectations is key. A balance should be found between the empowering aspect of co-creation and the importance of public functions and not sidelining the importance of regulation and public space. However, this should not hold us back from creating the safe spaces for people to express their needs comfortably.



## Changing the narrative:

We should not aim for just inclusive solutions; we should aim for a more inclusive travel ecosystem that can benefit us all. For this to happen, stakeholders should focus on making a smaller, more tailored impact rather than attempting to target everyone. The challenge here is that people with reduced mobility are often perceived as “costly” or “non-profitable”, which leads to them being excluded as potential user groups. A shift in the narrative can lead to people with reduced mobility being seen as an investment in society rather than an extra cost. A more positive approach and narrative is needed where every step, every interaction with people with reduced mobility, when executed properly, contributes to positive change.

A specific step in the right direction is to not reinvent the wheel, and rather focus on the synergies between target groups: see what is being done by other organisations, operators, and cities, and capitalise on that. This will make the process less expensive overall. Finally, support from the public administration for private operators to address particular user needs, might be the first step towards a more accessible and inclusive design of vehicles.





# SMALL Library

---

## Identification of user needs

**Springer Book:** Keseru, I. & Randhahn, A. (2023). Towards User-Centric Transport in Europe 3: Making Digital Mobility Inclusive and Accessible. Springercham.

### INDIMO Deliverable - Analysis

**Framework:** Delaere, H., Di Ciommo, F., Shahar, E.K. & Vanobberghen, W. (2020). INDIMO deliverable: Analysis Framework of User Needs, Capabilities, Limitations & Constraints of Digital Mobility Services. INDIMO D1.1 Analysis framework. [[indimoproject.eu](http://indimoproject.eu)]

### INDIMO Deliverable - User Needs

**and Requirements:** Capaccioli, A., Di Ciommo, F., Gabor Banfi, M., Giorgi, S., Lamoza, T., Rondinella, G., Shahar, E.K., Spector, M., Tu, E., Vanobberghen, W. & Vermeire, L. (2021). INDIMO deliverable: User needs and requirements on a digital transport system. INDIMO D1.2 User needs and requirements on a digital transport system\_v2.0.

### INDIMO Deliverable - Users Capabilities

**and Requirements:** Di Ciommo, F., Kilstein, A. & Rondinella, G. (2021). INDIMO deliverable: Users capabilities and requirements. INDIMO D1.3 Users capabilities and requirements\_v2.0.

**Dignity Project Publication:** Bradley, M., Clarkson, P.J., Goodman-Dean, J., Hoeke, L., KLuge, J., Nesterova, N., Roca Bosh, E. & Waller, S. (2022). Dignity project publication: Interacting with Computers, Volume 33, Issue 4, July 2021, Pages 426–441. [<https://doi.org/10.1093/iwc/iwac014>]

**Mobycon Academy Video:** Mobycon Academy. Accessible Cities - Seeing the city through a different lens With Guest Maya Levi: An immersive interview with a wheelchair user discussing its mobility experience in the city of Delft, NL. [<https://youtu.be/knpDMq6wab0>]

## Identifying barriers and drivers for shared mobility

**Conference Proceeding: Identification of barriers and drivers for an inclusive digital mobility system from a stakeholders' point of view:** Basu, S., Delaere, H., Keseru, I. & Macharis, C. (2021). Identification of barriers and drivers for an inclusive digital mobility system from a stakeholders' point of view. [Identification of barriers and drivers for an inclusive digital mobility system from a stakeholders' point of view — Vrije Universiteit Brussel ([vub.be](http://vub.be))]

**Conference Proceeding: Inclusive and accessible mobility: how to address the needs of vulnerable people?** Basu, S., Delaere, H., Keseru, I. & Macharis, C. (2021). Inclusive and accessible mobility: how to address the needs of vulnerable people? [Identification of barriers and drivers for an inclusive digital mobility system from a stakeholders' point of view — Vrije Universiteit Brussel ([vub.be](http://vub.be))]

**INDIMO Deliverable - Barriers to the design, planning, deployment and operation of accessible and inclusive digital personalised mobility and logistics services:** Basu, S., Delaere, H. & Keseru, I. (2021). INDIMO deliverable: Barriers to the design, planning, deployment and operation of accessible and inclusive digital personalised mobility and logistics services. [INDIMO D1.4 Barriers to the design, planning, deployment and operation of accessible and inclusive digital personalised mobility and logistics services\_v2.0 ([indimoproject.eu](http://indimoproject.eu))]

**Dignity Deliverable - Literature review Effects of digitalization in mobility in society:** Hoeke, L., Nesterova, N., Noteborn, C. & Patrocínio Gonçalves, M. (2020). Dignity deliverable: Literature review Effects of digitalization in mobility in society. [[PowerPoint Template \(dignity-project.eu\)](http://PowerPoint Template (dignity-project.eu))]

**Trips Deliverable - Prioritised list of potential inclusive mobility solutions and barriers to adoption:** Bagnasco, M. & Kroenig, A. (2021). Trips deliverable: Trips Deliverable - Prioritised list of potential inclusive mobility solutions and barriers to adoption. [[D4.3-A-Prioritised-List-of-Potential-Inclusive-Mobility-Solutions-and-barriers-to-adoption-TRIPS.pdf \(trips-project.eu\)](http://D4.3-A-Prioritised-List-of-Potential-Inclusive-Mobility-Solutions-and-barriers-to-adoption-TRIPS.pdf (trips-project.eu))]

**Book: How to make Shared Mobility Rock: A Planner's Guide to the Shared Mobility Galaxy:** Karbaumer, R., & Mets, F. (2021). How to make shared mobility rock: A planner's guide to the shared mobility galaxy. Shared-North. [[https://share-north.eu/wp-content/uploads/2022/05/Shared-Mobility-Guide\\_ENGLISH.pdf](https://share-north.eu/wp-content/uploads/2022/05/Shared-Mobility-Guide_ENGLISH.pdf)]

# Acknowledgements

## Lead Authors

**Esen KÖSE** (Mpact)  
**Daniel HERRERA** (POLIS)  
**Carlotta INSERRA** (POLIS)

## Editing

**Bonnie FENTON** (Rupprecht Consult)  
**Sami ANGSTHELM** (Bax & Company)  
**Benedict GARDNER** (Bax & Company)

## Design

**Mathis FAY** (Bax & Company)

**Interreg  
North Sea**



Co-funded by  
the European Union

SMALL

Co-funded by Interreg North Sea



**Contact us:**

[contact@sharedmobilityforall.eu](mailto:contact@sharedmobilityforall.eu)

If you have comments, questions or insights to offer based on our report, we'd love to hear from you !

