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Overview

The white paper describes our **Mobility Divide Index (MDI)**; a **user-centric methodology and metrics aiming to measure** the level of **accessibility** of public transport services from a user perspective.

The Global Goals and the 2030 Agenda for Sustainable Development emphasises the significance of providing transport systems accessible to all citizens, including persons with disabilities.

Accessibility of public transport has previously been defined based on operational assumptions and objectified metrics.

We took a **breakthrough stance!**

*Accessibility
is in the
“eye of the beholder”*

We viewed accessibility as an indicator of user experience and sought to provide a comprehensive evaluation framework that reflects disabled users' experience with the view to inform policy directions, investment decisions, and transport plans paving the way for a more inclusive mobility.

Our MDI approach is based on a **co-design methodology** resulting in a set of **user-centric indicators**, reviewed, rated, prioritised and validated by persons with different disabilities.

We account for **differences in mobility services across six important user experience dimensions** as an index of the accessibility divide between persons with disabilities and non-disabled citizens.



Accessibility in the age of COVID-19

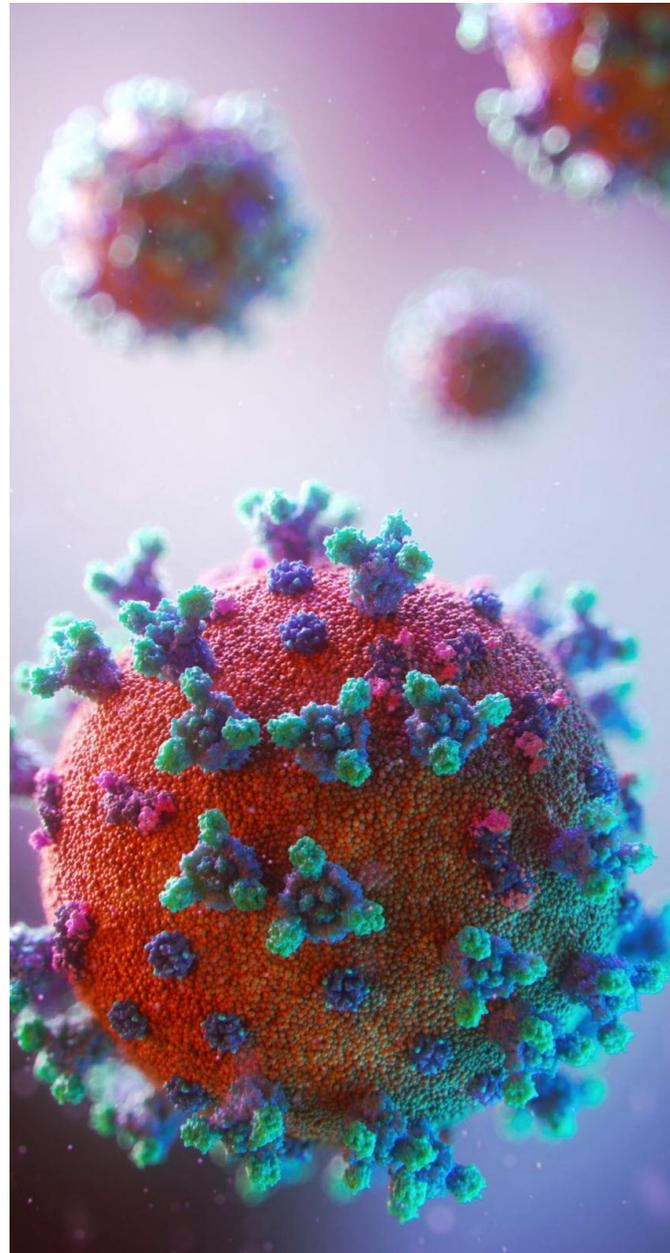
COVID-19 impacted the accessibility of public transport in various critical ways for persons with disabilities’.

Safety and Convenience aspects were significantly influenced by pandemic-related risks and restrictions.

Persons with disabilities revealed that:

“the reduction of the number of entrances at the mean’s access point and the closure of the buses front doors, the social distancing preventing the communication with the drivers, the reduced assistance and the reduced communication caused by wearing masks, but also the difficulty to keep social distancing due to insufficient space, poor ease of movement and presence of too many people on board, have enormously exacerbated our safety inequalities”.

People with disability are also disproportionately impacted by the deviations from usual habits and routines they rely on preventing them to benefit from a convenient journey which complies with their needs and expectations .



“Traveling during the COVID-19 pandemic is particularly challenging for people with disabilities who rely on public transportation services more than the rest of the population”

What gets measured, gets done

We need to make sure that we measure the right things, to make sure we do things right. Our user research highlights that from a user perspective accessibility is a door-to-door issue.

Yet, existing accessibility indicators essentially ignore the users' experience of their door-to-door journeys. They do not reflect multimodal approaches tailored to the needs and requirements of different users into a **composite, holistic, user-centric, metric**.

In addition, **to provide persuasive information to direct policy and practice, we need a core mass of disabled users to use such a metric** to assess public transport services and hence we need a tool to be **user-friendly to use**.

From an institutional perspective, the MDI can only be useful only if it provides actionable information, i.e. info that researchers, planners and policy makers can easily relate to, understand their practical implications of and can translate it into change actions.

Otherwise, even the most comprehensive and technically sound tool will not be adopted in day-to-day practice to bear any real impact.

“You get what you measure”

Anonymous



Co-designing the Index



We wanted to shift the balance of power allowing end-users to play a central role in the design of the MDI.

We facilitated groups of persons with disabilities to reflect on what affect their journeys. We worked closely with local user teams in the 7 partner cities (Lisbon, Zagreb, Bologna, Cagliari, Brussels, Sofia, Stockholm) to co-design the MDI.

The teams comprise persons with disabilities who are experienced disability rights activists and people working directly with persons with disabilities across project pilot cities.

We worked together via online workshops to:

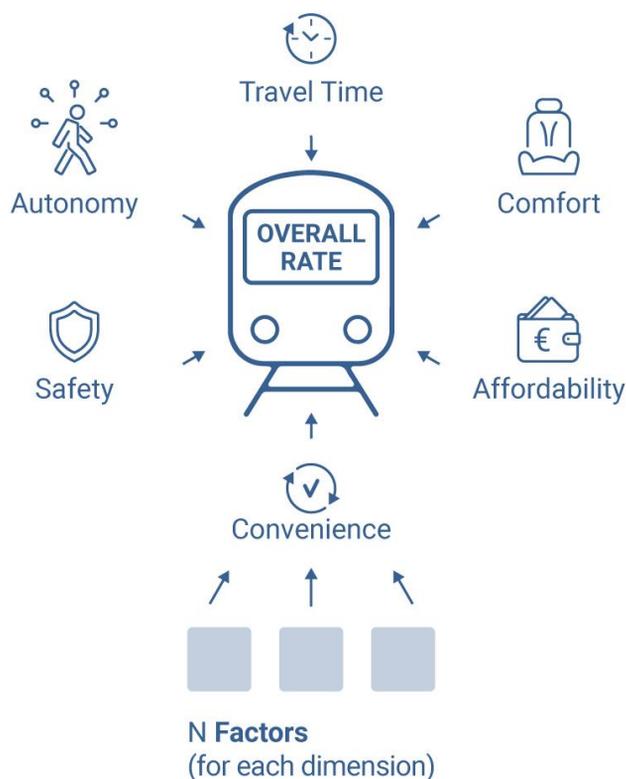
- **Investigate** the main factors that can influence the travel experience of people with different types of disabilities;
- **Provide definitions** to each factor;
- **Cluster and re-cluster** these factors into dimensions
- **Researched** the relative **importance** of each dimension to weight the loading of these factors and dimensions.

The MDI structure

This effort has resulted into a **multi-dimensional, composite index** reflecting users' experience comprising **6 dimensions**:

- **Travel Time:** the time necessary to reach the destinations including extra waiting, delays, or slowdown
- **Autonomy:** the ability to travel autonomously, with no need for assistance
- **Comfort:** the easy access and use of the transport services, equipment and facilities
- **Convenience:** the condition of fitting in well with travellers own needs and expectations
- **Affordability:** the condition of not requiring relevant extra costs resulting in financial hardship
- **Safety:** the condition of not being exposed to unreasonable risks

Each dimension represents a **discreet number of factors** that influence travel experience of persons with various disabilities.



“A composite index can simplify complex matters into a single number”



THE MDI IS A
COMPOSITE INDEX

What can we offer people with disabilities? What do we want from them?

Persons with disabilities have the opportunity to test and fine-tune the **MDI tool**, an easy tool that make their voice heard. We want them to **use it** and give us feedback!

In this view, we developed an **online survey** (available in different languages) where people with different types of disabilities can answer few simple questions about their travel experience on public transport services in their cities.

The survey aims to collect information about the accessibility level of public transport services **to expose the existing gaps** between people with and without disabilities (in terms of Travel Time, Autonomy, Comfort, Safety, Convenience and Affordability).

The collected data will be processed by a **proper algorithm** to determine the overall accessibility rating of the public transport services.



What can we offer municipalities, transport authorities and transport operators? What do we want from them?

Benefits to municipalities and transport authorities:

- Provide them with recommendations for policy changes
- Highlight which investment priorities will have the biggest impact for citizens

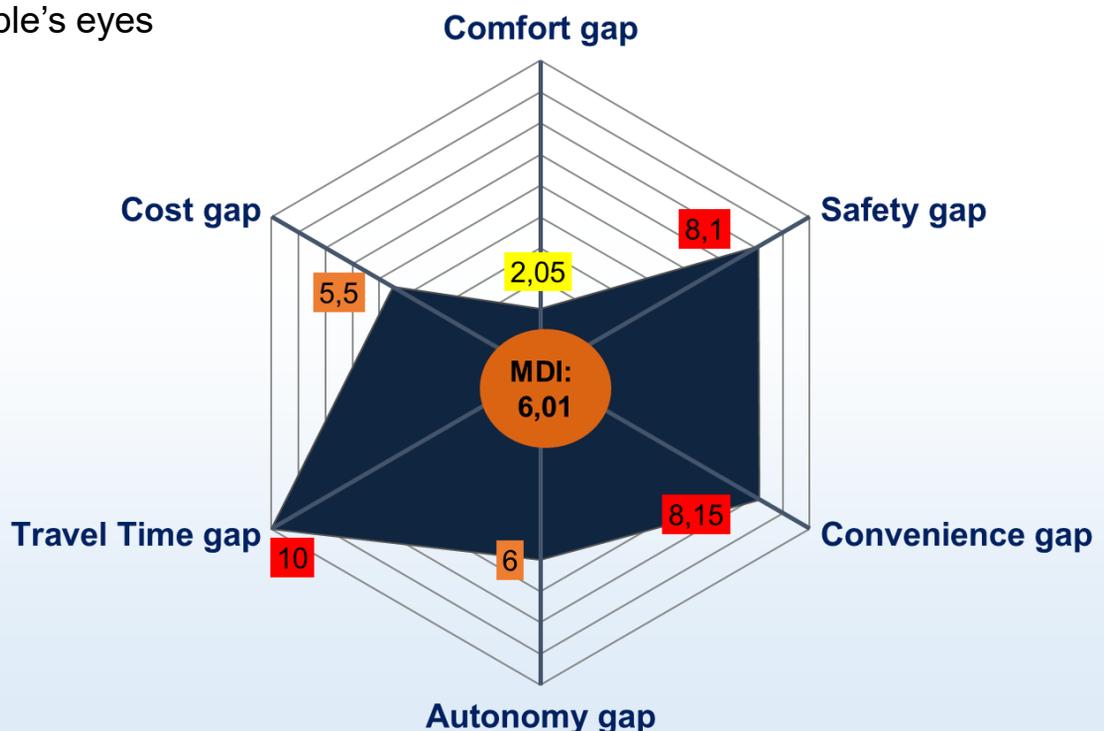
Benefits to transport operators:

- Pinpoint and prioritise the operational gaps to provide direction for service innovation and improvements
- Highlight investment priorities that will have a real impact in people's eyes

In such view, we defined the MDI **overall rating** as a value ranging from 0 to 10, where 0 means that “equal access opportunities” (i.e. no mobility divide exists between people with and people without disabilities).

While 10 means “awful inequity” (i.e. a huge divide exists between people with and people without disabilities). We represent the overall MDI in a **radar chart** (see the example below).

In this example, the overall rate is an intermediate value **6.01**. This means that the service is not completely accessible by users with disabilities and the main issues concern travel time, safety and convenience aspects, while less inequities relate to comfort.



Our Ambition and Next steps

Through the MDI the **accessibility concept** takes on a new meaning: Accessibility must reflect people with disabilities views and is an issue that concerns all stakeholders of the system who had to work hand-in-hand with disabled and their representative organizations to design and construct transport networks, infrastructure and vehicles that are accessible to all users of the transport system.

“The more reduced the mobility divide, the higher accessibility is ensured”

We will engage citizens, municipalities, transport authorities and transport operators in 7 European cities to :

- **Test and tune the MDI methodology**
- **Evaluate the current accessibility level** of the local transport services
- **Pinpoint the operational gaps** to be addressed to tackle the mobility divide through the design and implementation of new inclusive mobility solutions
- **Measure of the impact** of such **solutions** on the mobility divide

A New Approach to Designing Transport Systems Free of Mobility Barriers



“TRansport Innovation for disabled People needs Satisfaction” (TRIPS).

The EU-funded project, TRIPS, aims at making public transport more accessible for persons with disabilities, elderly voyagers, and really everyone.

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