



Panteia

Research to Progress

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Assessing digital travel information services for persons with disabilities and reduced mobility

Maria Rodrigues
2 december 2020

What is problem?

- The barriers that persons with disabilities and reduced mobility experience when accessing digital travel information services:
 - Lack of specialized information to support them managing mobility challenges
 - Lack of services that provide and present information in ways suitable to cognitive and sensory impairments

Aim of the project:

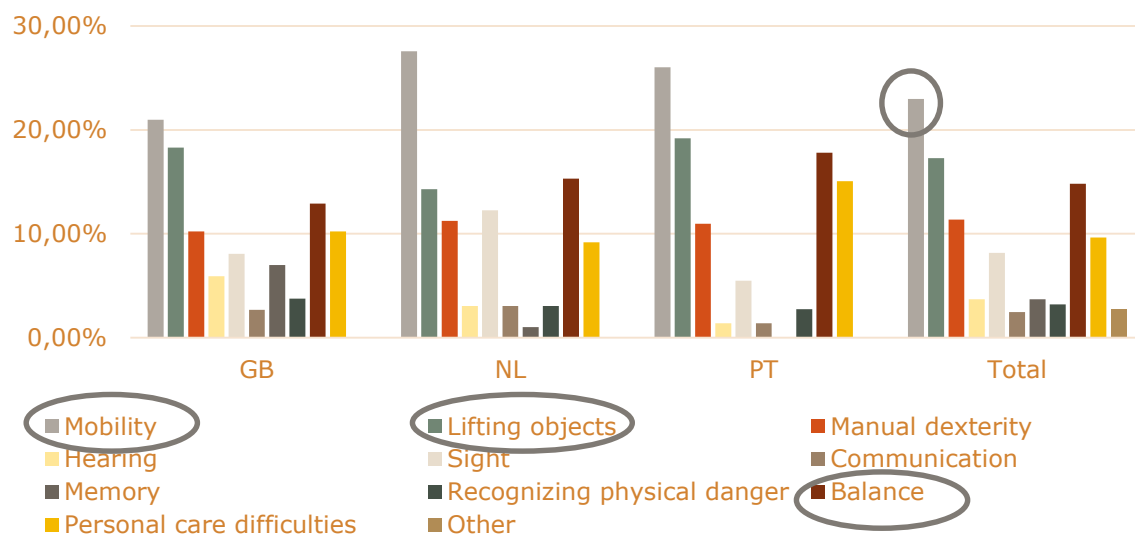
Explore and assess the current information services that assist travellers experiencing impairments or mobility difficulties

- Travel expectation survey targeting people with disabilities and reduced mobility from PT, UK and NL (#130)
- Assessment of current digital transport information systems (#125)



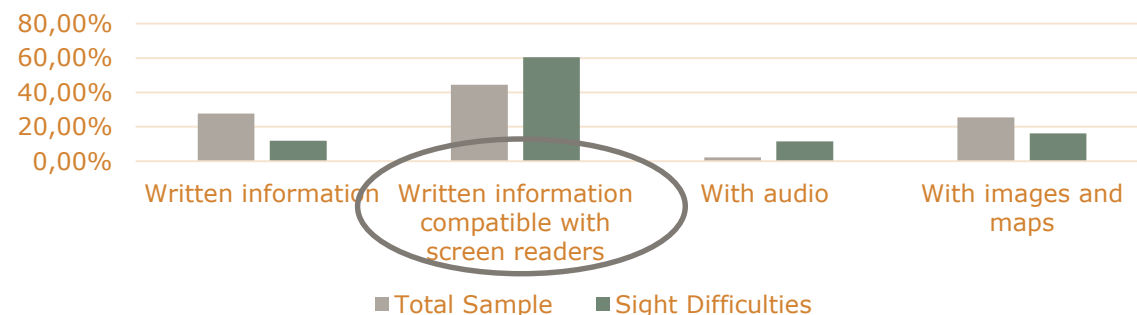
Travel expectation survey

Do you experience difficulties with any of the following?

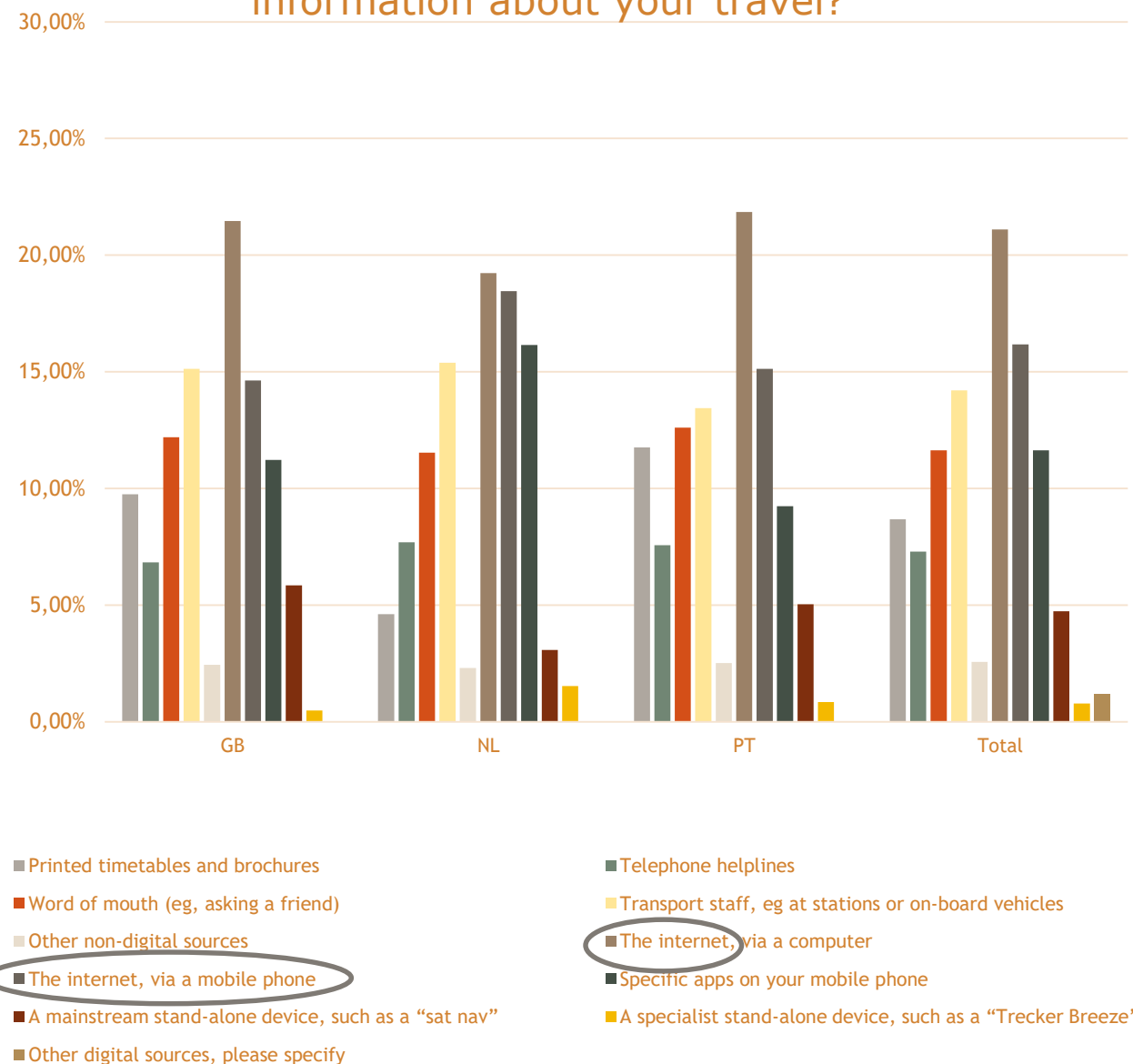


Indicate the most important ways the information and services are presented

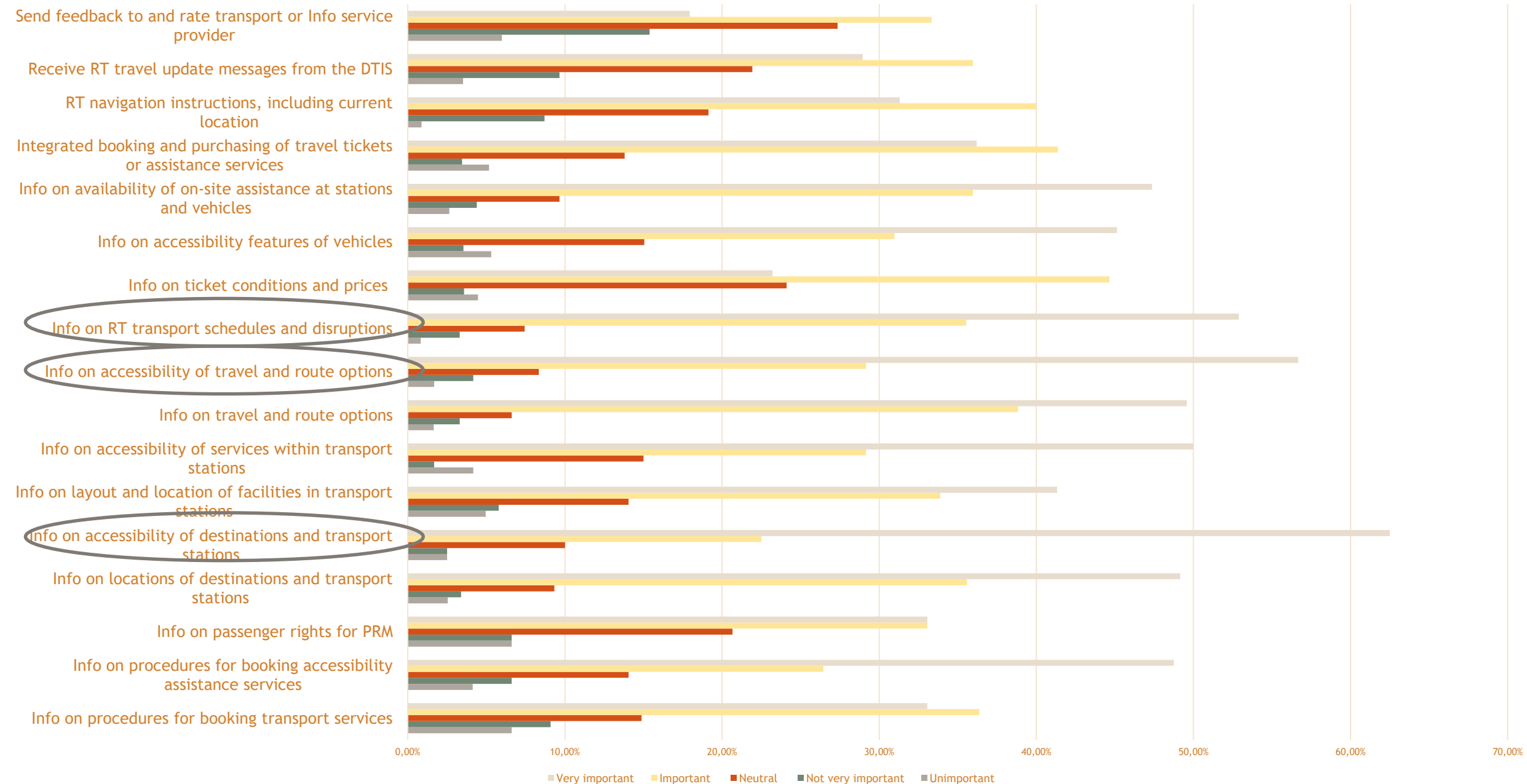
Total sample vs Sample with sight difficulties



Which sources do you make use of to access information about your travel?



Rate the importance of the DTIS functions



Key findings from survey

- Mobility, lifting objects and balance are the most mentioned difficulties
- Lower satisfaction level about information about local public transport
- Difficulties related with physical access to transport. This suggests that people might not use digital means to access information because they simply cannot access the transport service itself
- The accuracy of the information provided is a very important characteristic of digital systems together with the credibility and the reliability

[Plan a journey](#)

From

To

Leaving: now [change time](#) >

[Hide preferences](#) <

[Plan my journey](#)

[My Journeys](#) [Recents](#)

[Plan a journey](#) and add to favourites for quick access in the future.

Public transport **Cycling** **Walking**

Travel by [select all](#) [deselect all](#)

<input checked="" type="checkbox"/> Bus	<input checked="" type="checkbox"/> Tube
<input checked="" type="checkbox"/> National Rail	<input checked="" type="checkbox"/> DLR
<input checked="" type="checkbox"/> London Overground	<input checked="" type="checkbox"/> TfL Rail
<input checked="" type="checkbox"/> River Bus	<input checked="" type="checkbox"/> Tram
<input checked="" type="checkbox"/> Emirates Air Line	<input checked="" type="checkbox"/> Coach

Show me

<input checked="" type="radio"/> The fastest routes	<input checked="" type="radio"/> No accessibility requirement
<input type="radio"/> Routes with fewest changes	<input type="radio"/> Use escalators, not stairs
<input type="radio"/> Routes with least walking	<input type="radio"/> Use stairs, not escalators
	<input type="radio"/> Step-free to platform only
	<input type="radio"/> Full step-free access

Preferences

I only want to walk for a maximum of

My walking speed is

Travel via

Enter a location to travel via

Search outside London ☐

Optimise for walking

I'd rather walk if it makes my journey quicker ☐

☐ Save these preferences for future visits

[Plan my journey](#)

9292 travels with you

Let's go!

[Planner](#) [Extra options](#)

Extra transfer time

[Default](#) +5 min.

Transportation types

☒ ☒ ☒ ☒ ☒

Plan accessible [i](#)

☒

[Plan my journey](#) →

Plan accessible ✕

You are planning an accessible journey. The planner will take the accessibility of the stop, as well as the vehicle into account. If a train is included in the travel advice, it means that NS travel assistance is available at the station. Lastly the planner counts in 5 extra minutes at a transfer.

Need more information about planning with accessibility?

Read more about it [here](#).

Travelling with a disability

- > NS Travel Assistance
- > Travelling with a guide dog or other aids.
- > Information about the train boarding direction

Travelling with a visual impairment

- > NS Travel Assistance
- > Travelling with OV-chip Plus
- > Travelling with a guide dog or other aids.
- > Information about the train boarding direction
- > Where to find the guide lines.

Arrange directly

- > Requesting NS Travel Assistance
- > Travelling with OV-chip Plus
- > Ordering a taxi to and from the station
- > Request an OV-Begeleiderskaart

OV-Begeleiderskaart

With an OV-Begeleiderskaart one companion can travel with you for free.

[More information](#)

Extra facilities in the train

Our trains feature special wheelchair spaces and priority seats.

[View the facilities at the station](#)

Extra station facilities

We provide extra support at the station as well.

[View the facilities at the station](#)

Reisinformatie nodig?

[Meer informatie](#)

Assistance during your journey

People with a disability can use NS Travel Assistance for free.

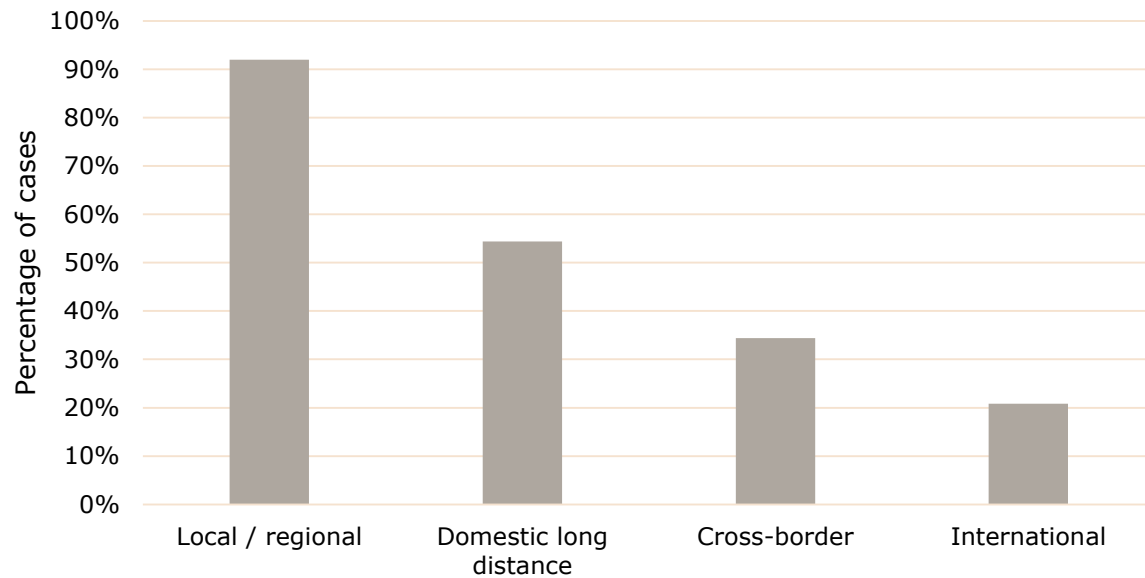
[More information](#)

Assessment of the digital information tools

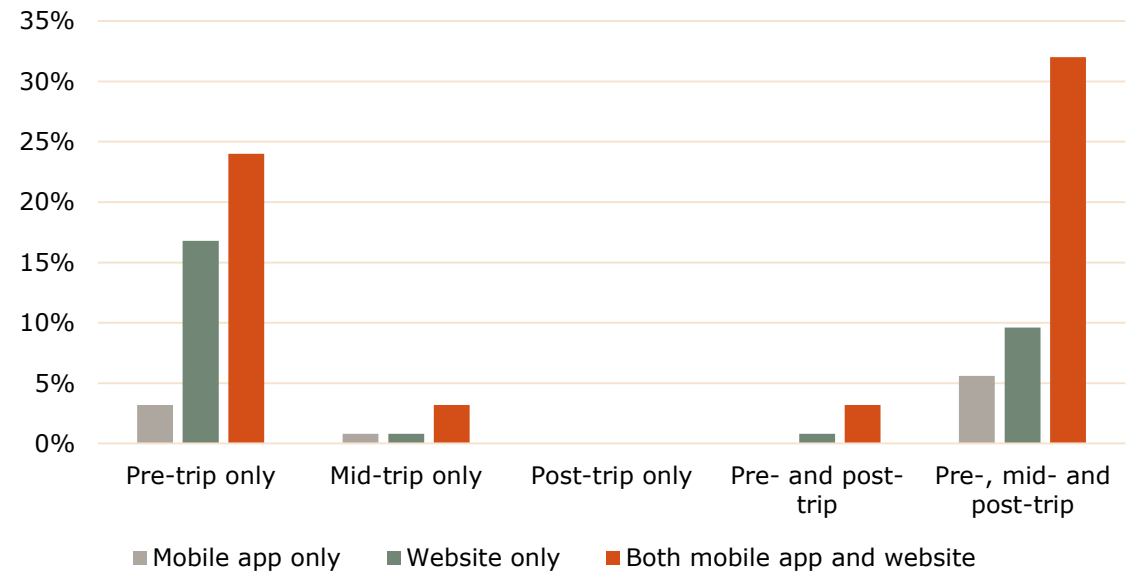
Sample

- 125 covering all EU member states plus Iceland, Norway, Switzerland

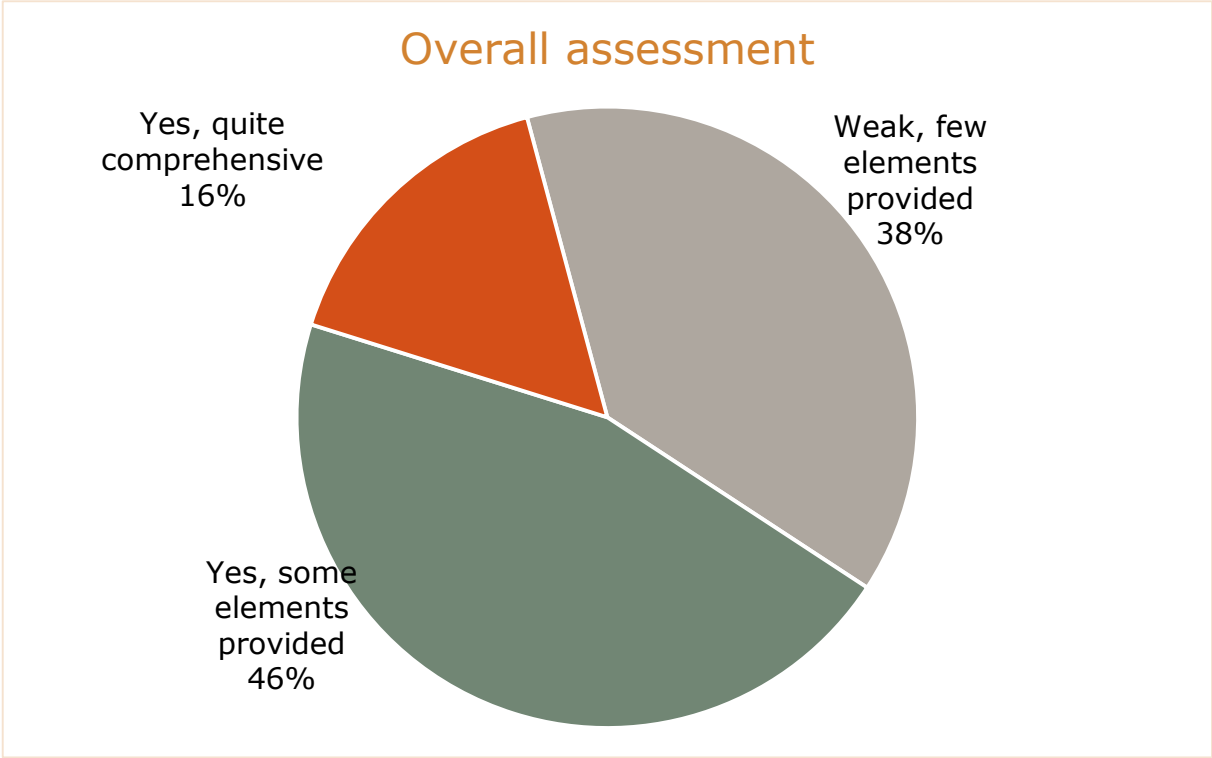
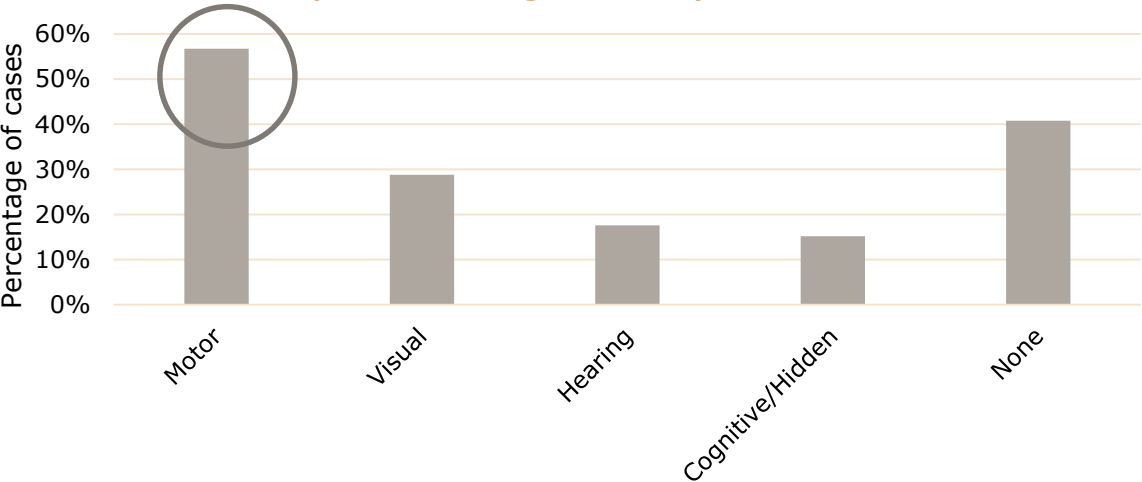
Geographical coverage of the DTIS



DTIS channels for different trip segments



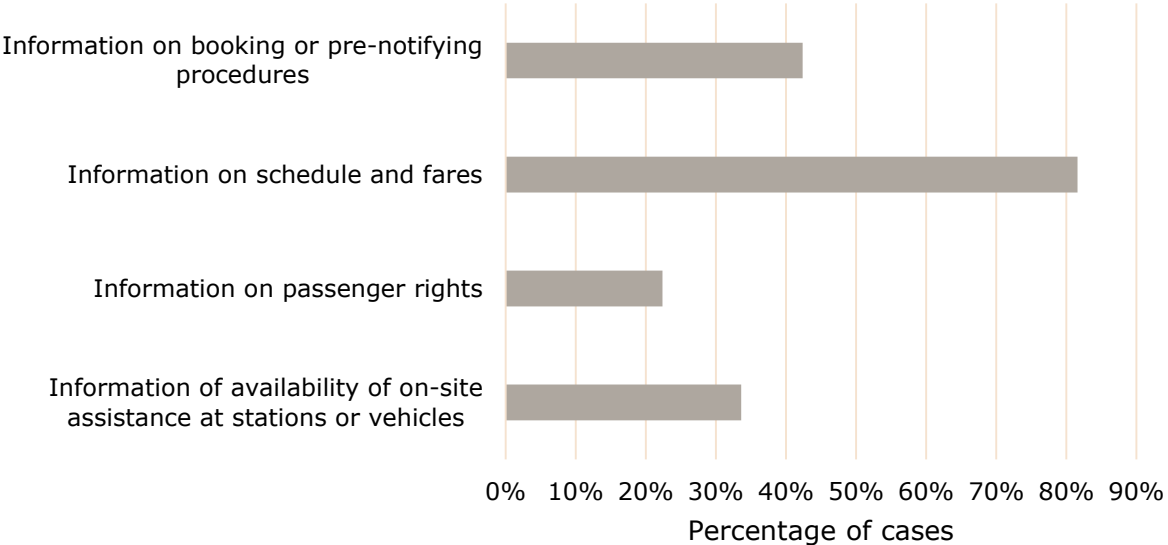
Whether DTIS provides PRM-specific information according to the type of impairment generally served



Information type	No information	Descriptive text ONLY	Audio ONLY	Maps & Images ONLY	Descriptive text AND Audio	Audio AND Maps & Images	Descriptive text AND Maps & Images	ALL FORMS
Location of transport nodes	8%	17%	1%	18%	1%	0%	54%	1%
Layout and facilities of transport nodes	46%	13%	1%	16%	2%	0%	22%	0%
Design and accessibility of vehicles	59%	26%	0%	4%	1%	0%	10%	0%
Accessibility of ticketing and booking facilities	64%	26%	0%	2%	2%	0%	7%	0%



DTIS providing additional information



Evaluation of digital transport information systems: criteria used

- PRM oriented information (target groups),
- Multimodality,
- Type of information provided (pre-trip, on-trip, posts-trip)
- Functionalities offered
- Use of services (schedules, fares)
- Real time information
- Satisfaction



Key findings from the DTIS assessment

- There is insufficient and inadequate service catered to persons with disabilities. While there are a great deal of travel information services being provided, the challenge of a DTIS to provide an inclusive service to individuals of strongly differing needs and capabilities remains difficult
- The availability and quality of data on accessibility-related aspects of travel are a constraint faced by providers

Concern: until this data becomes more widely available, the enormous potential that new information technologies have for improving the travel experience of persons with disabilities and reduced mobility will not materialize.

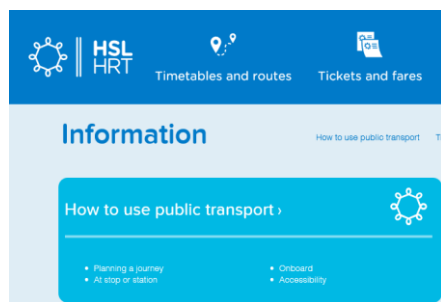
Improving the procedures for generating and maintaining this data – be that via crowd-sourced or official mechanisms, or a mix approach – should be a priority over the coming period.

Recommendations

- **Presenting route and line information** – avoiding information overload and also for those with cognitive impairments;
- **Making use of accessibility criteria in journey planning** – catered to needs;
- **Presenting station accessibility information** – some users want to have detailed information on all stages of accessibility, rather than a generic assessment of accessibility;
- **One stop page for accessibility information** – reaching a webpage where all the links to accessibility information and services should be easy;
- **Motivating innovation in the field** – Compliance to regulation vs Innovation;
- **Quality and availability of data** – need for improvement and innovation
- **Presenting to those with visual impairment** – innovative technologies may also be employed for mid-trip use, such as dedicated standalone tools or mobile apps.

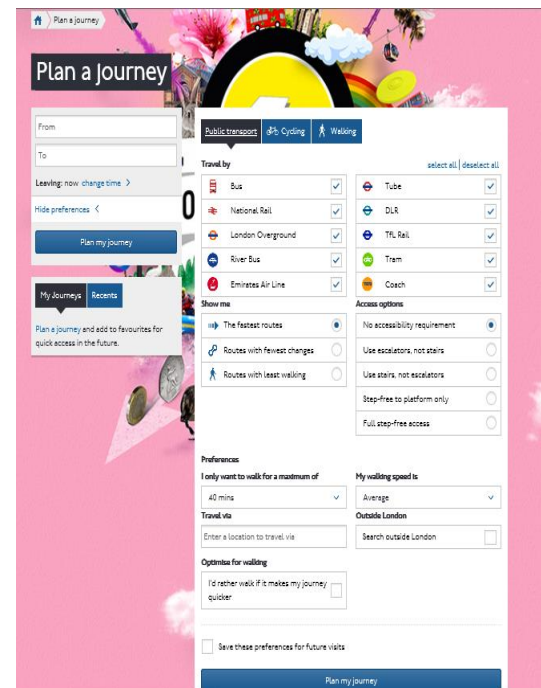
Thank you for your attention!!!

Maria Rodrigues
m.rodrigues@panteia.nl



Helsinki Journey Planner

<https://www.hsl.fi/en>



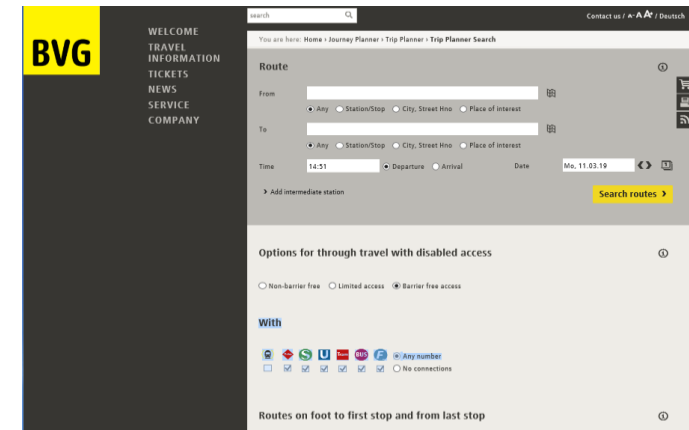
Transport for London

<https://tfl.gov.uk/plan-a-journey>



Vianavigo

<https://www.vianavigo.com/accueil>



Berliner Verkehrsbetriebe (BVG)

<https://www.bvg.de>

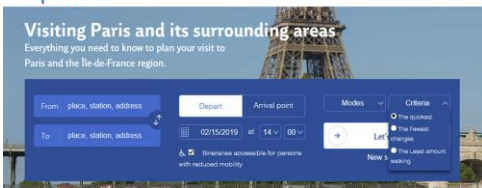


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Tisséo

<https://www.tisseo.fr>

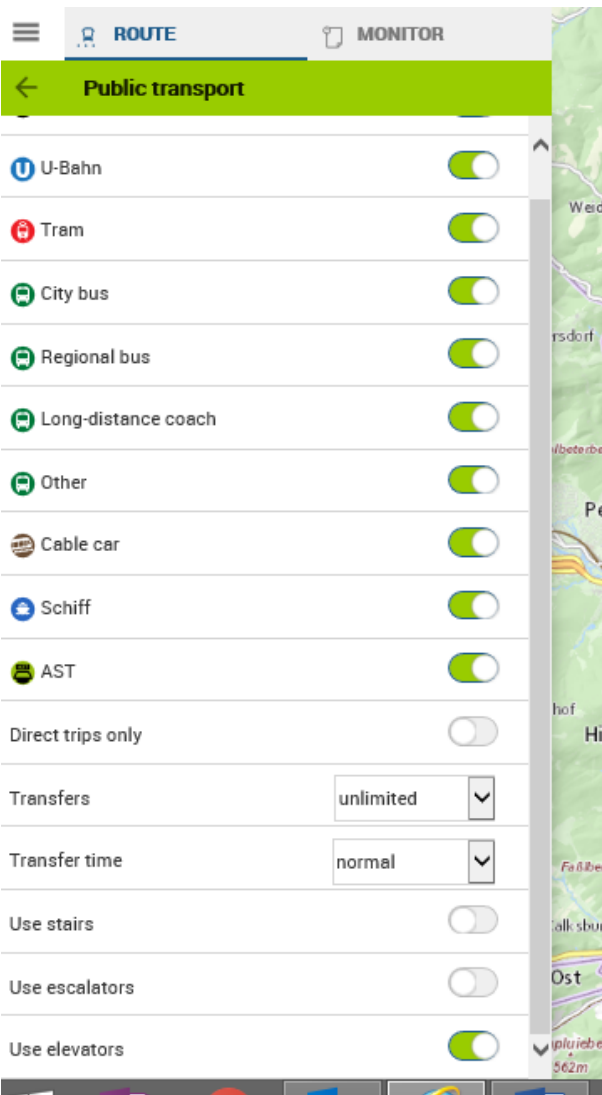


Gare du Nord			
	Ascenseur	Escalator montant	Trottoir roulant
	Ascenseur UFR	Escalator descendant	
Dernière mise à jour le 30/09/2019 à 15:39			
Actualiser			
Légendes			
● En service			
● Hors service			
● Inconnu			
⚠ En fonction travaux			
Type	Localisation	Etat	
EM4	De : (M) (S) Vers : Salle d'échange	●	
EMC	De : (M) (S) Direction Bobigny Vers : Salle d'échange	●	

RATP

<https://www.ratp.fr/en/visite-paris/english/visiting-paris-and-its-surrounding-areas>

1A	Viru keskus - Viimsi keskus	M T W T F S S	●	★	Show on map
2	Mõigu - Reisisadam (A-terminal)	M T W T F S S	●	★	Show on map
3	Veerenni - Randla	M T W T F S S	●	★	Show on map
4	Väike-Õismäe - Tiskre	M T W T F S S	●	★	Show on map
5	Männiku - Metsakooli tee	M T W T F S S	●	★	Show on map
6	Merivälja Pansion - Metsakooli tee	M T W T F S S	●	★	Show on map



Von A nach B
<https://anachb.vor.at/>



Motor	Hearing	Visual
Entrance	Can stay	Ticketing
Fully Accessible	Fully Accessible	Fully Accessible
Can find path	Boarding	Exit
Accessible with Personal Assistance	Accessible with Personal Assistance	Fully Accessible



Transporlis, the transport operator in Lisbon

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Ns Reisplanner

<https://www.ns.nl/en/journeyplanner>

Barrier-free access

☒ I would like to receive information on barrier-free access for all search results.

☒ I am only interested in barrier-free connections.

☒ I am only interested in connections that do not require advance notice.

☐ I am also interested in connections that require advance notice.

Zürcher Verkehrsverbund

<https://www.zvv.ch>