VIEWS
OF ELDERLY PERSONS
ON FUTURE MOBILITY

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Our Motto

DO IT FOR US, DO IT FOR EVERYBODY

The 2020 European Sustainable and Smart Mobility Strategy highlights key actions for making new mobility solutions affordable, accessible, and safe for all passengers, including those with specific access needs. Here we present the mobility needs of elderly persons and their attitudes towards future mobility solutions, comparing their responses to those from people with disabilities and non-disabled participants. Our findings indicate that elderly people, people with disabilities, and non-disabled users share many of the same transit needs and priorities. These findings indicate that a large portion of society would benefit from inclusive transit, a number far greater than the 135 million Europeans with disabilities.

In a nutshell, our findings suggest that an interactive, real-time, accessible journey planner would motivate users from all sectors of society to travel and make their journeys more independent, faster, easier, nicer, and safer. Bikesharing, e-scooters, and motorbike taxis are largely rejected in their current format. Microtransit, ride pooling and robotaxis are promising alternatives, but we should pay special consideration to their accessibility. Cycle lanes hold a promise for participants upon modification.

Our findings indicate that making transit accessible benefits the majority of Europeans, regardless of their age, disability status, or gender. We offer policy and industry recommendations for consideration based on these results.

Our conclusions

IN BRIEF

Our Survey
METHOD

The survey was accessible online from November 2020 to February 2021. Elderly citizens were targeted, but the survey was open to everybody to allow comparisons between different groups. Around 100 questionnaires were completed by researchers on behalf of elderly citizens, who sometimes lacked the digital skills necessary to participate online.

Our survey represents the views of **349 persons** living in **28 European countries**. Our sample was relatively gender-balanced, with **56.7% women,** and included **131 non-disabled respondents**. The mean age of respondents was **51.84** years, with more older respondents as a result of the recruitment strategy.

The participants were asked to assess nine emerging mobility systems:
- accessible journey planner
- Bikesharing
- e-scooters
- motorbike taxis
- cable cars
- microtransit
- ride pooling
- robotaxis
- cycle lanes
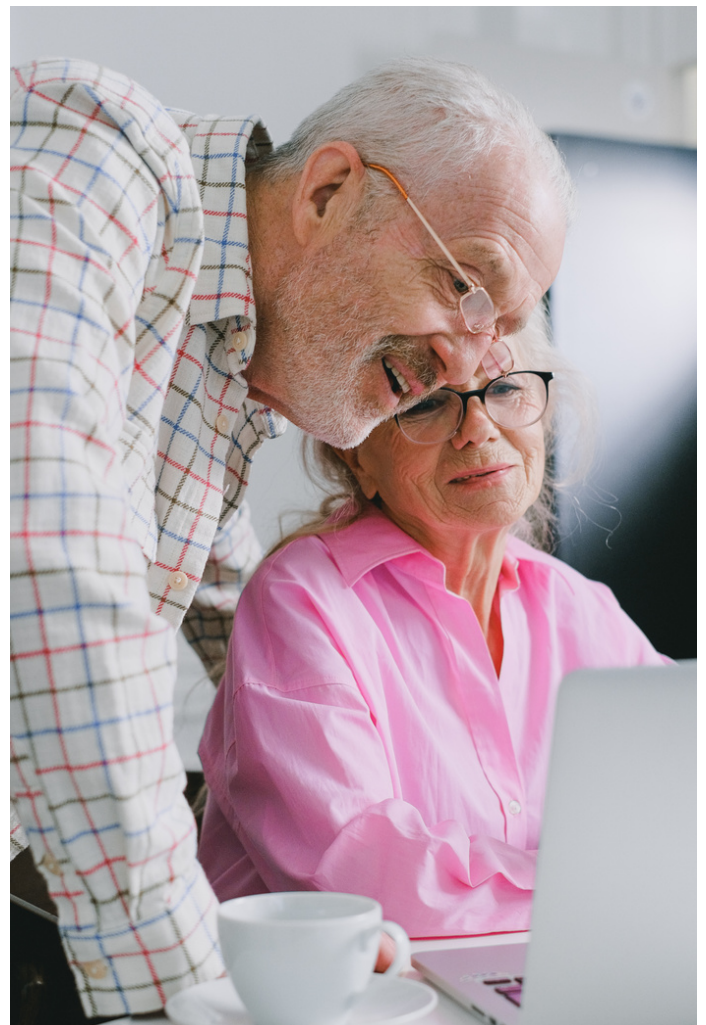
Our Survey
FINDINGS

The **accessible journey planner** was the single most favoured solution across all user groups (75.9%). In contrast, **Bikesharing** (32.7%), **e-scooters** (21.8%), and **motorbike taxis** (37%) scored low on all these dimensions and were the least favoured by all users. **Cable cars** (61.9%), **microtransit** (66.8%), **ride pooling** (63%), and **robotaxis** (70.5%) earned positive results for a variety of travel purposes, including commuting, attending scheduled appointments, shopping, and socialising. Men and women share many of the preferences; however, men answered slightly more positively about **bike-sharing, cable cars, cycle lanes**, and **e-scooters**, whereas women preferred **microtransit, ridepooling**, and **robotaxis.** Overall, the ranking of preferences was the same between the first and second surveys.

Participants were asked to evaluate which solutions would motivate them to travel by indicating which transit systems they thought would make journeys independent, faster, easier, and nicer. The most highly ranked options were:
1. Accessible journey planner
2. Robotaxis
3. Microtransit
4. Cycle Lanes
5. Ridepooling

Surprisingly, **accessible journey planners** ranked first among all user groups: disabled, non-disabled, and the elderly. All indicated that knowing the accessibility of their journey from start to finish would motivate them to travel more.
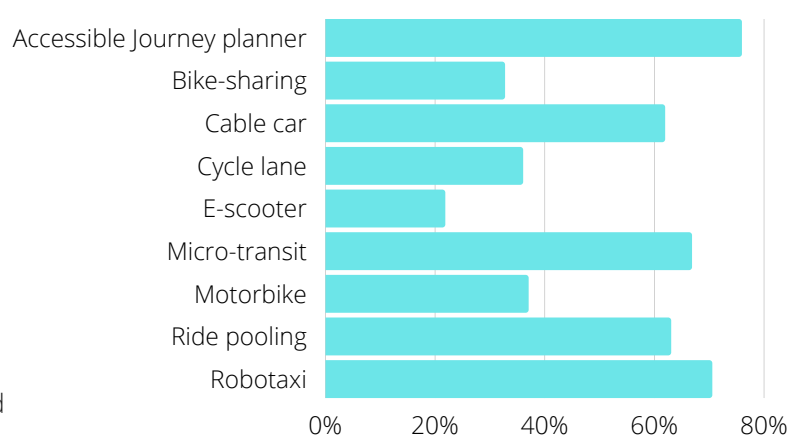
The comparative analysis between different survey respondents found similar preferences across all groups. **ridepooling** was accepted by 64.6% of non-disabled, 63.7% of disabled, and 67.8% of elderly respondents. **Microtransit** scored similarly across user groups (65.2%, 67.7%, and 67.8%, respectively), as did **robotaxis** (74.2%, 68.2%, and 67.9%). **Accessible journey planners** were favoured at similar rates among persons with disabilities (77.4%) and non-disabled groups (73.5%), albeit a bit less among the elderly (53.7%).

There was some divergence between groups; elderly respondents and people with disabilities responded more negatively than non-disabled participants to **Bikesharing, e-scooters,** and **cycles lanes.** On the whole, though, participants across user groups favoured similar options.

These findings indicate that accessible, on-demand mobility solutions benefit user groups across society, and should not be considered a concern exclusive to people with disabilities.
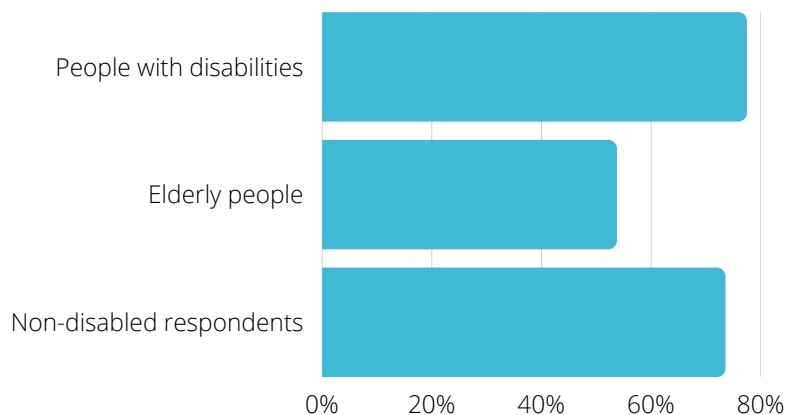
ACCESSIBILITY
FOR ALL

ACCESSIBLE JOURNEY PLANNERS DESIRED BY ALL USER GROUPS

Our results indicate that persons with disabilities and non-disabled participants share concerns about accessibility. Both groups were overwhelmingly in favour of **accessible journey planners.** 77.4% of people with disabilities recorded positive responses to this option, along with 73.5% of non-disabled respondents. Elderly people responded with slightly less interest, at 53.7%, which could be attributed to barriers accessing digital tools.

60% of users indicated that they expect **accessible journey planners** to increase their independence and make their journeys easier. 55% of respondents also said such a tool would make their journeys faster, nicer, and safer.

Accessible journey planners stood out in both surveys as a tool with high user approval across all groups. These results indicate that accessibility is a major consideration across all user groups, not just people with disabilities.

In addition to helping people with disabilities and elderly people plan their transit journeys, **accessible journey planners** could help non-disabled groups, such as parents travelling with small children or travellers carrying luggage, plan their journeys in the most convenient way.

Although more research is needed to demonstrate the value of this tool to the wider population, our results indicate that accessibility information should be included in mainstream planners to improve service provision.

ON-DEMAND AND AUTONOMOUS SOLUTIONS

Respondents across all user groups responded positively to **on-demand and autonomous options. Ride pooling** received positive responses from 63.6% of non-disabled respondents, 63.7% of persons with disabilities, and 67.8% of elderly people. **Microtransit** garnered similar responses, with favourable reactions from 65.2% of non-disabled users, 67.71% of participants with disabilities, and 67.8% of elderly respondents. So too did **robotaxis,** with approval ratings of 74.2% from non-disabled people, 68.2% of people with disabilities, and 76.8% of elderly participants.

In fact, when users were asked which options would motivate them to use transit, **robotaxis** ranked second, behind **accessible journey planners.** Around 55% of respondents said **robotaxis** would make them travel more and become more independent, while around 50% expect **robotaxis** to make journeys faster, easier, and nicer. Some respondents appear to be uncertain about the safety of the technology, as only 43% responded **robotaxis** would make their travel safer.
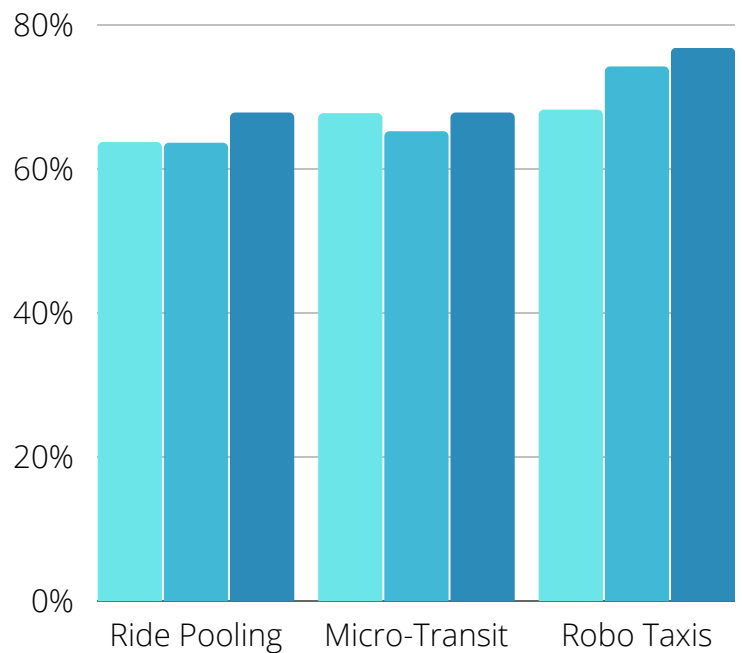
In phase 1 of the questionnaire, which surveyed people with disabilities, **robotaxis** did not receive such high approval ratings. This indicates that there may be safety and accessibility concerns for people with disabilities that do not exist among elderly and non-disabled users.

Overall, these results indicate the importance of making on-demand and autonomous mobility options available across society. Elderly people and people with disabilities should be engaged as these technologies are designed and deployed, to ensure they are accessible and meet the needs of all user groups.

Overall

OUR POLICY RECOMMENDATIONS

To solve door-to-door accessibility issues, we suggest a systemic approach that requires greater collaboration across urban planning, transport planning, social services, and education systems. In particular, policy-making should:

- Incorporate accessibility information into mainstream public transit planning tools and information resources.
- Invest in transit solutions that meet the needs of users across different groups, paying particular attention to the overlapping needs of the elderly, people with disabilities, and non-disabled users.
- Raise the digital competence and confidence of elderly people and persons with disabilities to improve their access to transportation tools.
- Ensure greater collaboration between urban and transport planning to design accessible routes and modes of transport.
- Invest in the accessibility of cities and transport infrastructure.
- Invest in public campaigns to improve social attitudes and transport etiquette towards citizens with all types of disabilities and access needs.
- Make mandatory the participation of disability and accessibility experts in standards development for vehicles, mobility systems, and transport services.
- Update and upgrade the laws and policies on EU transport accessibility and passenger rights and their enforcement across member states.
- Invest in a European Accessible Design Centre of excellence that can provide relevant expertise to European companies.

A look at the

FUTURE

MOBILITY SYSTEMS INDEX

Accessible journey planners: Accessible journey planners are online systems or mobile apps that you can search for how you can travel with public transport from point A to B when you use a wheelchair or you want to avoid walking up and downstairs.

Motorbike taxis: Motorbike taxis are a taxi service on a small motorbike (like a scooter or a moppet). You can book a ride on a mobile app. The scooter driver picks you up from your location and drops off at your destination. You have to wear a helmet and there is usually a small space to store stuff on the bike. Sometimes, bikes are electric. Motorbike taxis are very popular in Asia, because you don't have to get stuck in traffic and they are cheaper. This is also great for city traffic and pollution, but would it be good for you?

E-Scooters: E-Scooters are electric-powered scooters that can be picked up from a nearby location in the city and dropped off at another location in the city. You can use a mobile app to find one close to you, and also pay for it and unlock it so you can use it. A scooter should be driven on the road or a cycle lane, (not the pavement) and can reach around 30 kilometers per hour. You are expected to balance on a scooter to drive it, and you can control the speed and break from the bar handles. Hiring e-Scooters for short city rides have become very popular in many cities.

Microtransit: Microtransit is a minibus service that can only service your local area. Imagine that you plan a long journey and you need to reach the main rail station, but to get there is really complicated. You book a Microtransit service, via a mobile app. The minibus will not pick you up from your doorstep, but from a nearby location and drop you off at the rail station.

Ridepooling: Ride pooling is a kind of shared taxi. Imagine that you need to go across town. You book a taxi via a mobile app. The taxi also picks up other people that are going in the same direction. It might take a little longer as the car needs to stop to let people on and off on the way to where you are going. The ride is cheaper than a normal taxi, but you have to share, and sometimes you are not brought all the way to your doorstep.

Bikesharing: Bikesharing is a scheme of public bicycles that can be rented out for a (short) period of time. Bikes can be picked up from a nearby and dropped off at a nearby parking dock or outside one's destination (for dockless systems). A mobile app shows you where you can find one, and also allows you to check it out and pay for it via your phone. The bicycle should be driven on the road or cycle lanes (not the pavement), wearing a helmet. The users should be able to ride a bicycle, and, of course, watch out for road traffic. Although there are some electric-assisted bikes, most rental bicycles require manpower and may (or may not) have gears. Increasingly cities dedicated cycle lanes, usually located next to car lanes.

Cycle lane: A cycle lane is a visibly marked road lane dedicated to cycling, and more recently to e-scooters too. Perhaps other micro-mobility solutions may be able to use these in the future. Cars are not allowed to drive or park on them. The lanes are usually 1.5 meters wide, and cycles and scooters can reach a speed up to 50 kilometers per hour. While there are no cars on these lanes, riders still need to be able to steer their cycle or scooter to avoid other riders and follow instructions and signs to navigate.

Cable Cars: Cable cars are cabins on steel ropes high up above ground that go from one station to another. The cabins can fit 10-20 people, depending on their size. Cable car cabins are at ground level and can be stopped so that wheelchair users can easily get on and off. Station staff is usually available at these getting on and off points for assistance. Cable cars are becoming popular because they avoid road traffic, are relatively inexpensive and they don't take much space to build, they are electric and hence less polluting and run automatically which makes them cheap to run.

Robotaxis: Robotaxis are autonomous cars that are driven by artificial intelligence which checks the road and traffic via sensors, GPS and other smart technologies that communicate with other cars and the road infrastructure. Very likely these cars will also be electric. Because they are driverless, these taxis will be more affordable, and you will be able to book a taxi by a mobile app.

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.

Special thanks to our field workers
Isabel Ortega and Aya Wietzorrek
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CONTACT INFORMATION

Tally Hatzakis
Trilateral Research Ltd.
tally.hatzakis@trilateralresearch.com

www.trips-project.eu

https://www.linkedin.com /groups/13851288/

@eu_trips