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D I G E S T

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Transport and Older
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Transport technology and older people



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The number of older people is increasing, especially those over 85. To meet their mobility and transport needs, there is a growing dependency on technology. While technology has the benefit to deliver significant benefits, it could risk loss of independence. This study examined what needs to change to enable a greater number of older travellers to access new technologies. It makes several recommendations for future research and greater user-centred design.

The number of older people aged over 65 is set to increase for at least 20 years. This has implications for mobility and engagement with transport technology.

In the public transport environment, efforts have been focused on modifying vehicles and physical infrastructure such as stations, stops and equipment (e.g. ticket machines), to enhance accessibility, while policy and legislation have defined duties of care for transport providers towards older people. However, there is a lack of information and service provision for older travellers. Journey planning websites cannot provide the complete detailed information. Therefore, there is a need for better provision of accessibility-related information on multimodal door-to-door journeys.

While there has been increases in the number of older drivers and the distance they travel, they still drive less than younger drivers do. Many older drivers compensate for their perceived declines by age-counteractive behaviours (i.e. avoiding what they perceive as difficult driving situations). In-vehicle technologies (e.g. navigation systems, night vision systems, adaptive cruise control, parking assistance and intersection assistance) are likely to be beneficial to older drivers. However, there are issues associated with the wholesale adoption of in-vehicle technologies due to, for example, complex interfaces.

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TRIMIS is an open-access information system to map and analyse technology trends, research and innovation capacities, as well as monitor progress in all transport sectors.

TRIMIS is developed and managed by the Joint Research Centre on behalf of the European Commission.

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This study addressed two research questions: (1) What needs to change to enable greater numbers of older travellers to access transport technologies? (2) What are the key barriers to engaging with new and emerging technologies for older people?

To answer these, one-to-one interviews were conducted with 32 older people and 4 experts. A thematic content analysis was undertaken to analyse interview transcriptions to determine keywords, phrases or sentences that occurred repeatedly, in patterns or clusters, within or across groups. These were then collected into five major themes.

- **Mobility** is important to older people and, while they may show a decline in some cognitive functions that may affect travel behaviour, there are strong possibilities that the brain's plasticity allows for continued learning and in continuing to travel and to be mobile. This was reflected by the participants where even an 96-year-old still drove a car. In addition, the diverse nature of the older population means that new technology must be adapted to those with reduced cognitive function.
- The **digital divide** would seem to be a more important issue than age or using new technology in relation to travelling. While almost every person will access new technology and use it in a simple way, the level of engagement of most of the population will continue to be limited. Therefore, developments in new technology should allow for a simple functionality with further functionality hidden until requested. There is a challenge to be met bridging the gap between tech-savvy and non-tech-savvy individuals.
- While **technology** has the potential to remove some barriers: innovations providing a seamless, door-to-door experience could simplify planning, enabling journeys and potentially increasing levels of independent mobility for older people. In relation to public transport, journey information that may be beneficial includes: availability of all supporting features such as toilets, seating, refreshments, and physical accessibility. For those travelling by car as a driver or passenger, there is additional information needed on parking availability, queues and hold-ups, roadworks, and any specific issues such as bus lanes.
- There are many issues around **ergonomic** aspects, including making design easy to understand and simple to operate. The participants pointed out that smartphones were problematic as the displayed letters are too small to see and press.
- To achieve **good design**, it needs to be user-centred and inclusive. Designers need to understand the criteria that people use to discriminate 'good' from 'bad' design of technology, to investigate the actual meaning of need, utility and relevance (of products, devices) to older users as part of user-centred design.

The study concludes by arguing that future transport for older people has to be personalised and bespoke. This will mean that older people can travel independently using different modes. It could involve established and new solutions such as mobility-as-a-service, autonomous vehicles, and for some older people, things such as e-bikes that have GPS. It may also mean emphasising personalised and individual transport means rather than shared transport.