Use of Transportation technologies in later life Fatemeh Hatami, Anu Siren, Steve O'Hern.
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Purpose Transportation is vital for maintaining the mental and physical well-being and independence of older adults [1]. Limited transportation options can lead to social isolation and depression [2]. However, barriers to accessing transportation can be overcome with innovative transport solutions such as shared services, MaaS, and e-bikes. These transportation technologies may serve many older adults' needs, yet, compared to younger adults, their adoption is often perceived as lower and occurs at slower rates [3,4]. Age alone, however, should not be treated as the sole indicator of transportation technology acceptance, as it risks excluding older adults from transportation design and policymaking. Instead, it is important to consider different age groups and examine other factors (e.g. lifestyle, social interaction and innovation attribute factors) that motivate or hinder transportation technology acceptance within each age group. However, little is known about these motivating and hindering factors among the older population. This study addresses this gap by identifying factors that affect older adults' decision to adopt transportation technologies and compare these factors with younger adults. **Method** To understand what shapes older adults' (>55 years old) decision to adopt transportation technologies including shared services, MaaS, electric vehicles and e-bike, we examined Social Influence and Disruptive Low Carbon Innovations (SILCI) dataset from the UK [5]. We included total number of 1387 responses from older and younger adults for analysis. We used descriptive analysis for comparing factors across four groups of older and younger adopters and older and younger non-adopters. We used hierarchical logistic regression analysis only for older population (n=550) to investigate the determinants of adoption and non-adoption of new transportation technologies among them. Determinants included i) demographic factors such as gender, education and income, ii) lifestyle factors such as technology and environmental activities, iii) social interaction factors such as hearing good things from friends and norms and iv) technology attribute factors such as perceptions of usefulness and relative advantage when adopting transportation technologies **Results and discussion** The study identified notable differences between older adopters and non-adopters. Older adopters were more engaged in technological activities, more influenced by social interactions, pro-environment and perceived these technologies as money-saving and easy to use. On the other hand, non-adopters were more likely to face barriers such as limited digital literacy and reported a lower perceived need for new transportation technologies. Comparing older and younger adopters, this study shows clear differences between older and younger adopters in demographics, lifestyle, and social interaction factors because of different life stages; however, their perception of technology was very similar. These findings show that despite age differences, both older and younger adults are willing to adopt transportation technologies if they find these technologies helpful. In other words, while age may be associated with transportation technology adoption, it is not the decisive factor, and innovation attributes are more influential in shaping adoption decisions than age. These findings emphasize the importance of innovation attributes and design of transportation technologies that should be accessible, appealing, and supportive of older adults' needs.

References

1. Fagerström C, Borglin G. Mobility, functional ability and health-related quality of life among people of 60 years or older. Aging Clin Exp Res. 2010 Oct;22(5–6):387–94.
2. Jackson S, Firth J, Firth J, Veronese N, Gorely T, Grabovac I, et al. Social isolation and physical activity mediate associations between free bus travel and wellbeing among older adults in England. JOURNAL OF TRANSPORT & HEALTH. 2019 June;13:274–84.
3. Ho CQ, Mulley C, Hensher DA. Public preferences for mobility as a service: Insights from stated preference surveys. Transportation Research Part A: Policy and Practice. 2020 Jan;131:70–90.
4. Nansubuga B, Kowalkowski C. Carsharing: a systematic literature review and research agenda. JOSM. 2021 Dec 17;32(6):55–91.
5. Wilson C. Social Influence and Disruptive Low Carbon Innovations [Internet]. UK Data Service; 2019. Available from: https://reshare.ukdataservice.ac.uk/854723/

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