Micromobility, Equity & Accessibility

Introduction

1. Access to safe, comfortable, affordable, and enjoyable transportation is not available for everyone, and its access is greatly dependant on personal identities, such as race, gender, income, age, and ability.

2. Prioritizing equity and accessibility in transportation planning is not only essential to social and environmental justice, but also tends to yield cost-effective ways of improving mobility beyond specific target user groups (a phenomenon known as the curb or curb cut effect).

3. E-bikes, e-scooters, and other similar small, lightweight electric vehicles are becoming increasingly mainstream. Understanding the opportunities and challenges such e-micromobility devices bring through an equity and accessibility lens is essential to transportation planning that meets the needs of all road users.

Opportunities through micromobility to enhance equity

4. E-bikes and cargo bikes in particular can provide a means of extending convenient non-car options for elders, parents and guardians, and folks with certain disabilities or injuries. While North American research is limited, findings from studies in Europe and Aotearoa New Zealand also suggest that e-bikes can increase cycling rates and distances travelled among all users, but that this effect is greater for women than for men.

5. The greater distances and terrain conditions such as hills that e-micromobility devices can handle compared to manual alternatives can open up new opportunities in suburban areas, and/or as a means of independent youth mobility, that doesn't require cars.

6. While cost can still be prohibitive for low income individuals, e-micromobility devices overall require lower investment compared to personal automobiles, particularly through shared mobility schemes.

7. Pilot programs in some North American cities suggest that e-scooters open new mobility opportunities for racialized communities in ways that other forms of sustainable transportation do not.

8. Facilitating modal shifts from higher to lower carbon modes and modes that are compatible with lower-carbon infrastructure – particularly personal car use to active and public transit modes – is important from an environmental justice perspective given the disproportionate public health and climate change related impacts of car dominant transportation schemes on groups including racialized communities, women, LGBTQIA+ individuals, elderly people, and people with disabilities.

Equity related challenges in micromobility

9. Shared micromobility systems, such as bike share or e-scooter companies such as Lime, can either require that devices be only be picked up and parked at their set stations

(docked models), or can allow devices to be picked up or parked from anywhere (dockless models). While dockless models offer more flexibility for riders and can lower barriers to riding in areas with fewer service stations, dockless systems make it easier for riders to leave devices in precarious or even hazardous places. Sidewalks often become obvious public spaces to park devices in the absence of dedicated parking spaces on roads. Dockless sidewalk parking can over clutter sidewalks, which disproportionately present a safety and access barrier for folks with certain disabilities, parents with strollers, and elderly populations who are especially reliant on clear sidewalks.

10. If micromobility services are not adequately distributed, resourced, and accessible, transport inequities can be exacerbated. This is especially true for docked shared mobility schemes and "by-the-minute" rental systems, which structurally limit and even penalize users who live and use devices in areas with few stations and longer distances between destinations.

11. Over-reliance on digital access tools, such as mobile apps that are often required to access shared micromobility models, can exacerbate the digital divide and present barriers to groups including elderly people, people with certain disabilities (e.g. intellectual or visual disabilities), and foreign language speakers. This is especially true for reliance on personal devices that need to use data.

12. While more affordable compared to personal cars, the up-front and maintenance costs of owning or renting devices can still present a barrier to both low-income individuals and to groups such as women and caregivers.

13. While e-micromobility in many places is seeing increasing diversity among users, these devices may still be perceived as catering to young, wealthy white men, who made up the majority of early adopters and in some cities are still grossly overrepresented among users. For example: most studies have shown that the majority of e-scooter users are men and young, and many suggest that perceptions about young men taking greater risks deter women and older individuals from taking up e-scooter use. Such perceptions can also be exacerbated by the fact that the micromobility retailer and mechanic industry is extremely white and male dominated. This can deter non-male and racialized individuals both from riding and from accessing adequate maintenance of owned devices.

14. The higher speed of e-devices compared to manual bikes and scooters can present safety concerns for manual cyclists and pedestrians on paths, trails, and even within bike lanes, particularly lanes that are not physically separated from cars. This is particularly a concern for groups including elderly people, people with disabilities, and children and their families, who may have less capacity to react spontaneously and may be more vulnerable in collisions.

15. From an environmental justice perspective, it is critical that e-micromobility devices draw users from personal cars to have the potential to be more beneficial than harmful, both in terms of local and global effects. The negative health, social, and ecological impacts of lithium, nickel, cobalt and rare earth metal mining needed to produce batteries (and their industries) like those used to power e-micromobility devices are serious, and disproportionately impact Black, Indigenous, and communities of colour, low income communities, and communities in the Global South (as can be seen, as just one example, through the ongoing wars tied to the cobalt mining industry in the Democratic Republic of Congo). The maintenance and disposal of these batteries also presents health and environmental hazards.

Looking forward

16. To leverage the opportunities micromobility presents in terms of equity and accessibility, it is essential to treat micromobility as part of public transit service spread rather than as a luxury.

17. Improving the safety of active transportation infrastructure as a whole in a way that accommodates e-micromobility devices is essential to unlocking the potential for these devices to address equity and accessibility gaps in transportation systems. Key measures include creating separated bike lanes, widespread traffic calming measures, and providing ample and accessible service stations and on-street device parking.

18. Expanding financial support options for low-income groups to rent, buy, and properly maintain micromobility devices can help encourage their safe uptake and amplify the potential benefits these devices can provide to low-income communities, particularly through increased connectivity with public transit systems. Expanding the number, distribution, and quality of shared mobility service stations and supporting more affordable longer-term and group checkout options in particular can help to ensure investment in micromobility schemes doesn't simply exacerbate current inequities.

19. With safer infrastructure, expanding the availability of affordable e-cargo bikes may present an opportunity to improve transport equity among groups including women, recent immigrants, single parents and/or parents with young children, and individuals in multi-generational households, as these groups tend to be disproportionately involved in caregiving and/or have other travel needs involving multiple people that benefit from carrying capacity.

20. Expanding non-digital options to access shared micromobility devices, such as expanding device check-out schemes offered through libraries, can help to mitigate the digital divide. Expanding the range of languages digital tools such as apps needed to access shared mobility schemes offer can also reduce barriers for users.

21. Dedicated strategies to increasing representation and visibility of users and those employed in the micromobility industry who are not men and/or white can help to lower barriers for marginalized groups related to perceptions of exclusivity and/or hostility.

Additional Resources

22. Giulia Oeschger, Giulia, Carroll, Páraic and Caulfield, Brian (2020) "Micromobility and public transport integration: The current state of knowledge," Transportation Research Part D: Transport and Environment, Volume 89.

23. Jin, Scarlett T. and Sui, Daniel Z. (2024) "Shared micromobility and equity: A comparison between station-based, hybrid, and dockless models," Transportation Research Part D: Transport and Environment, Volume 129.

24. Parnell, K. J., Merriman, S. E., and Plant, K. L. (2023) "Gender perspectives on electric micromobility use," Human Factors and Ergonomics in Manufacturing and Service Industries, Volume 33.

25. Transportation for America (2024) "Equity – Shared Micromobility Playbook"