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A Cross-sector Micromobility Research Roadmap

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Micromobility—including shared, loaned, and leased bikes, e-bikes, and e-scooters—holds significant promise in supporting more sustainable travel. It supports first- and last-mile connections to public transit and reduces vehicle miles traveled (VMT) and associated emissions. However, the micromobility sector faces persistent challenges, and the path forward to delivering sustainable and equitable services remains unclear.

To help chart that path, our research team conducted a Delphi study via two online surveys of micromobility stakeholders (N=45). Based on the findings, this brief presents a research roadmap that reflects the priorities of government, industry, and advocacy groups. It highlights where stakeholder perspectives align and where they diverge—laying the foundation for more targeted and collaborative research, policy, and practice.

Key Research Findings

In the second survey, participants ranked 10 core research topics that they helped define in the first survey. Table 1 presents the rankings, from highest to lowest priority, based on average rankings among each stakeholder group and across all participants. Infrastructure Needs emerged as the top overall priority and was among the top three for each stakeholder group. Societal Impacts also ranked in the top five across all groups. However, priorities diverged in key areas. For example, Financing Models was industry's top priority but ranked near the bottom for government and advocacy groups. Advocates prioritized Equity highest, while government ranked it second and industry eighth.

Research Topic Summaries

Infrastructure Needs: Identify high priority locations for micromobility street facilities and types of facilities required; analyze facility usage patterns and impacts on uptake and safety.

Equity: Assess micromobility availability, affordability, ease of use, and adoption among disadvantaged communities, with a focus on equity-priority populations and lower-density communities.

Societal Impacts: Evaluate environmental and social impacts, such as VMT reduction, lifecycle emissions, and health and quality of life benefits based on trip data and use patterns.

Safety: Document accident and (minor and severe) injury rates and evaluate contributing factors and solutions (e.g., presence and type of street facilities, traffic volumes, speed, and vehicle design).

Best Practices for Regulation: Identify best practices, including model standards/templates, for local ordinances

Table 1. Micromobility Research Priority Rankings by Stakeholder Group

Advocates	Government	Industry	ALL
Equity	Societal Impacts	Financing Models	Infrastructure Needs
Infrastructure Needs	Equity	Infrastructure Needs	Equity
Safety	Infrastructure Needs	Best Practices for Regulation	Societal Impacts
Societal Impacts	Safety	Societal Impacts	Safety
Multimodality	Best Practices for Regulation	Public Service Delivery Models	Best Practices for Regulation
Best Practices for Regulation	Multimodality	Safety	Financing Models
Public Service Delivery Models	Best Practices - Service Design	Consumer Adoption	Multimodality
Best Practices - Service Design	Public Service Delivery Models	Equity	Public Service Delivery Models
Financing Models	Financing Models	Multimodality	Best Practices - Service Design
Consumer Adoption	Consumer Adoption	Best Practices - Service Design	Consumer Adoption

related to operating hours and areas, parking and road use rules, Americans with Disabilities Act compliance, speed limits, user education, license and insurance requirements, pricing, and integrating payment with public transit services.

Financing Models: Identify and analyze models for public investment in micromobility, e.g., subsidies (and their return on investment); private-public partnerships; and models to support sharing, loaning, and leasing.

Multimodality: Broaden focus to include microtransit, neighborhood electric vehicles, and privately owned e-bikes and e-scooters—addressing roles, ownership models, and service integration.

Public Service Delivery Models: Examine how public agencies can manage or integrate micromobility services, including their incorporation into public transit systems and the barriers to doing so.

Best Practices for Service Design: Identify service design features (e.g., vehicle types) that increase usage and achieve societal benefits, through empirical studies or surveying programs.

Consumer Adoption: Investigate user preferences, demographic trends, adoption barriers, and effective strategies for outreach, pricing, and education to boost participation.

Conclusion

These research priorities offer a roadmap for future funding and inquiry. Grant-making agencies can use these rankings to guide proposal calls—for example, focusing on each group's top concern: Equity (advocates), Societal Impacts (government), and Financing Models (industry). Also, some stakeholders may be unaware of relevant existing research or find it inapplicable. Future research should build on the existing evidence base while prioritizing dissemination to stakeholders to ensure usability and impact.

More Information

This policy brief is drawn from the project "Shared Micromobility Research Roadmap" available at https://www.ucits.org/research-project/2023-53/. For more information, please contact Angela Sanguinetti at asanguinetti@ucdavis.edu.

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