



Summary Workshop Report

Informal Transportation Counts!

Reimagining the Techno-Social Infrastructure for Collecting Data on Informal and Shared Mobility in LMICs

VREF



SHARED-USE
MOBILITY CENTER



GlobalNetwork
for
PopularTransportation





Introduction and workshop methodology

Thursday, March 16, 2023, was Paratransit Day at the Transforming Transportation Conference, the World Bank and the World Resources Institute's annual conference in Washington, D.C. Paratransit Day was co-organized by the World Bank's Sub-Saharan Africa Transportation Program (SSTAP), Digital Transport for Africa (DT4A), World Resources Institute (WRI), and the Global Network for Popular Transportation (GNPT).

As part of the Paratransit Day's activities, GNPT, a project of the Shared-Use Mobility Center (SUMC), ran a workshop to reimagine the techno-social infrastructure for collecting data on informal and shared mobility in LMICs.

The participatory workshop asked these questions:

"How can we bridge the existing global data gaps on informal and shared mobility in low- and middle-income countries?"

More than fifty people joined the in-person workshop held at the World Bank offices in D.C. The participants were from different countries. Researchers, program officers, development officers, and transportation professionals were in the room. They represented nonprofits, private companies, development organizations, multilateral banks, and public institutions.

The Volvo Research and Educational Foundations sponsored the event for its program on [Informal and Shared Mobility in Low and Middle-Income Countries \(ISM\)](#). VREF says, "The primary objective of the "Informal and Shared Mobility in Low and Middle Countries" (ISM) program is to contribute to strengthening equity and sustainability in urban transport by supporting research that creates new knowledge to inform stakeholders better, to govern, design or develop informal and shared mobility, thereby contributing to better access to goods and services for all."

"What techno-social infrastructure do we need to collect and maintain data on informal and shared mobility in low- and middle-income countries?"





Informal and shared mobility

Agile City Partners, in *Who counts what? What counts where?* A global scan of data collection efforts in informal and shared mobility (a forthcoming memo) said:

Shared mobility and informal transportation are addressing mobility and employment needs worldwide. Operating largely outside the centralized, formal transportation provided by government or standard public-private business models, these systems affect the movement of people and goods. They facilitate the creation of income-generating opportunities and investments, and they also have the potential to address other sustainability concerns, such as reducing the environmental impact of the transport sector. But how and to what degree is not commonly understood...

We know data is critical in bringing visibility to this vital sector. Data is needed to understand the opportunity at hand to improve the lives of people working in and using these systems, but also how the sector can contribute to other goals such as environmental sustainability, economic development, and better governance.

The participants in the March 16th workshop in D.C. imagined the system/s that could collect data on informal transportation. The results of this workshop will help shape a roadmap for developing guidance documents, tools, partnerships, further research, and technology investments to close the informal and shared mobility transport data gap.

The participants first sketched out the goals and values that should guide data collection efforts as a group. Then, they divided into teams, they explored the skills and capacities that a local or national entity would need. They imagined what a responsible institution would look like, along with its remits.

This paper shares the broad outputs of the group and team discussions. GNPT and VREF hope it serves as a starting framework for roadmaps and plans that could lead to more tools, new partnerships, more research, and technology investments to address the gaps in the information the world collects about informal and shared mobility.

Andrea San-Gil Leon, Zayra Domini Abraham, and Benjamin de la Peña from GNPT designed and ran the workshop, guided by Holger Dalkmann (VREF Senior Adviser).



WHY?

WE ASKED:

"What goals, values, and principles should guide how we collect, store and maintain data about informal and shared mobility?"

Our participants said:

1. Commit to open data, data standards, and interoperability.
2. Ensure data inclusivity and protection for vulnerable members of society.
3. Promote equity, access, and empowerment for local communities through data.
4. Adopt community-led, collaborative approaches to co-create data and methods.
5. Uphold local control and data sovereignty¹.
6. Foster representative, inclusive, and intersectional² data for advancing social justice.

7. Safeguard privacy and ensure secure storage and collection of data.
8. Prioritize relevant data to address critical questions on transportation's impact on individuals and communities.
9. Ensure data is human-readable, understandable, and explainable (No black boxes).
10. Utilize data and information to enhance understanding of sustainability while promoting sustainable data collection, storage, and maintenance practices.
11. Maintain well-documented, peer-reviewed, and validated data with transparent collection methods.
12. Tailor data selection and collection to the local context, prioritizing local concerns.



¹ Data sovereignty: "the idea that data are subject to the laws and governance structures of the nation where they are collected" (https://en.wikipedia.org/wiki/Data_sovereignty); and "a group or individual's right to control and maintain their own data however they see fit, which includes the collection, storage, and interpretation of their data" (<https://purdue.edu/critical-data-studies/collaborative-glossary/data-sovereignty.php>)

² Intersectionality: "(the) primarily a tool for understanding invisible power relations and how they shape inequality, not identity. Intersectionality looks at "interlocking" systems of oppression and how these play out in individual's lives." (<https://www.gov.scot/publications/using-intersectionality-understand-structural-inequality-scotland-evidence-synthesis/pages/3>)

WHAT?

WE ASKED:

"What data, statistics, or indicators about informal and shared mobility should municipalities and countries (public agencies) collect?"

Our participants said:

Social

Such as gender, race, economic class, and other social issues

Stakeholders

Such as ownership of companies and fleets, data about operators, data about drivers, and data about users and non-users. (Demographic data should be disaggregated to reveal gender, race, economic, and social issues.)

Service and Demand

Such as origin-destinations, modal shares, ridership, availability (hours), accessibility, and user experiences (especially for vulnerable users).

Territorial and Geographic

Such as land uses, housing and housing types, road network and road conditions, infrastructure, and local weather

Operations

Such as routes, fleet counts and configurations (modes, propulsion/fuels, year), passenger wait times, service schedules, fares, etc.



WHAT?

WE ASKED:

"What data, statistics, or indicators about informal and shared mobility should municipalities and countries (public agencies) collect?"

Our participants said:

Business

Such as organizations and organizational arrangements or models, revenues, wages and incomes, workforce and employment data, licensing requirements, physical and financial assets

Community and Governance

Such as participation of organized groups and communities, leadership, decision-making, policies, and regulations

Safety

Such as road crashes and incidents, injuries and fatalities, harassment and assaults

Development

Data to inform SDGs, such as emissions (SDG 13), women's empowerment (SDG 5), access to transportation (SDG 11.2), and employment generation and economic empowerment (SDG 8).

HOW?

WE ASKED:

"How should these data, statistics, or indicators about informal and shared mobility be collected?"

Our participants said:

Devices that gather data (on-vehicle or through sensors), such as telemetry and GTFS, but don't rely on devices and machine-generated data alone. Use methods such as:

1. On-site observations
2. Community interviews and conversations
3. Reviewing existing contracts



4. Reviewing existing policy or planning documents
5. Using questionnaires or surveys (household survey, fare survey, user surveys)



6. Interviews with actors that are most informed about the sector, including drivers
7. Institution and organization mapping to understand who are the official players, and the other political and social players (invisible players)

They also said (reiterated) the need to ensure that data and information are also collected (and shared) in different local languages and that methods and approaches respect and protect privacy.



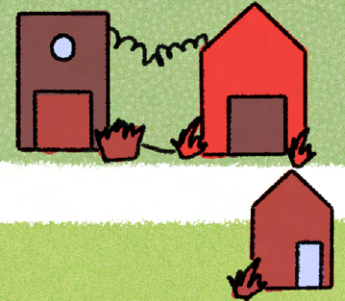
WE ASKED:

"What technical capacities, technologies, partnerships and organizational setups should we have to collect the critical data, statistics, or indicators about informal and shared mobility?"

Our participants said:

On capacities:

1. The ability to utilize data effectively.
2. Sufficient funding to support data collection efforts. Adequate staffing to manage and oversee data collection activities.
3. Accessible maintenance procedures to ensure data integrity and availability.
4. A comprehensive catalog of available data resources.
5. A strong contextual understanding of the data and its relevance.
6. Trust-building measures among stakeholders to foster data collaboration.
7. Availability of intermediaries to facilitate data sharing and exchange.
8. Internal data management systems and repositories for efficient storage and retrieval.
9. Offline data storage capabilities for safeguarding sensitive information and ensuring safety.
10. Hardware for data collection and storage (e.g., smartphones, sensors, tablets, storage systems. etc.)



WE ASKED:

"What technical capacities, technologies, partnerships and organizational setups should we have to collect the critical data, statistics, or indicators about informal and shared mobility?"

Our participants said:

On partnerships

1. Partner with universities and students to enhance data collection, analysis, and research efforts.
2. Work with data collection companies to ensure comprehensive and accurate data gathering and storage.
3. Collaborate with national transport authorities to establish standardized data collection practices and data management frameworks.
4. Support transport associations or unions to facilitate data sharing and maintenance protocols.
5. Work closely with operators and drivers to collect and maintain relevant data on transportation operations.
6. Collaborate with local startups and developers to innovate data collection methods and storage solutions.
7. Partner with bigger cities to exchange knowledge and best practices in data management for transportation systems.
8. Collaborate with development banks to secure funding for data collection initiatives and data infrastructure.
9. Partner with NGOs or community-based organizations to gather community-level data and ensure proper storage and maintenance.



WE ASKED:

"What technical capacities, technologies, partnerships and organizational setups should we have to collect the critical data, statistics, or indicators about informal and shared mobility?"

Our participants said:

On limitations and challenges:

1. Staff turnover can lead to inconsistent data collection practices and a loss of institutional knowledge.
2. Insufficient political support can hinder long-term commitment to data initiatives and limit their sustainability.
3. Corruption can compromise projects, damage trust, and erode data integrity and reliability.
4. A lack of staff can impede timely and thorough data collection, storage, and maintenance activities.
5. Inadequate funding can limit the resources available for proper data collection, storage, and maintenance.
6. Neglecting project maintenance can result in deteriorating data quality and accessibility over time.
7. Limited time and skills can restrict the thoroughness and accuracy of data collection, storage, and maintenance efforts.
8. Not adhering to the right data standards can hinder compatibility, interoperability, and usability.



WE ASKED:

"What technical capacities, technologies, partnerships and organizational setups should we have to collect the critical data, statistics, or indicators about informal and shared mobility?"

Our participants said:



On strategies:

1. **Start small, build incrementally:** Begin by focusing on a specific area or pilot project, gradually expanding the scope as you gain experience and demonstrate successful outcomes.
2. **Implement training and capacity-building initiatives:** Conduct workshops and training programs to raise awareness among authorities about the importance of data collection, storage, and maintenance.
3. **Provide technical and economic support to change champions:** Offer assistance, resources, and funding to individuals or groups actively driving change in data practices, supporting their efforts to advocate for improved data collection, storage, and maintenance.
4. **Strengthen enforcement mechanisms:** Implement robust enforcement mechanisms to ensure compliance with data collection, storage, and maintenance requirements, fostering accountability and maintaining data quality.
5. **Consider establishing a data hub to integrate data from public agencies and private companies:** Create a centralized platform or data hub to aggregate and integrate transportation data, ensuring comprehensive and standardized data collection and storage practices.
6. **Develop and adhere to data standards:** Establish and adhere to data standards to facilitate the consolidation and collection of data, ensuring consistency and interoperability across different sources and systems.

WE ASKED:

"Create a logo of a public agency responsible for collecting and maintaining transportation data about informal and shared mobility. The logo's elements should show the public agency's most important responsibilities. They should also propose a name for the agency."

Our participants were divided into groups and sketched out their ideas, then shared them with the whole group. We asked ChatGPT to create descriptions from their sketches and notes. Then, we asked our artist to draft the logos based on ChatGPT's description.

Group 1

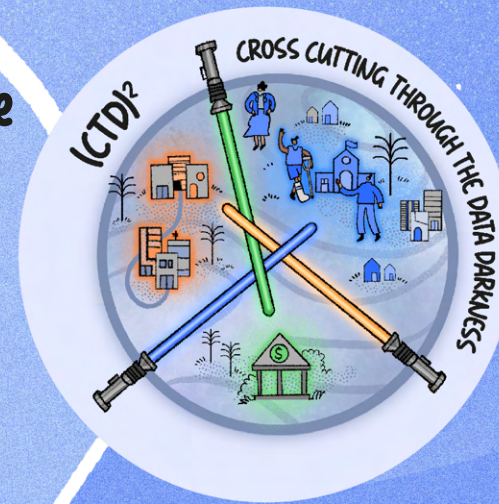
Agency:

CCTTDD (Cross-cutting through the data darkness)

ChatGPT says:

The logo for the public agency responsible for collecting and maintaining transportation data about informal and shared mobility is a powerful representation of collaboration, progress, and unity. At the forefront of the logo are three prominent lightsabers, symbolizing the agency's role in illuminating the transportation landscape and cutting through the darkness of data scarcity.

The lightsabers, each representing a distinct color, visually represent the three primary stakeholders in the transportation ecosystem: government, private companies, and communities. The colors are carefully chosen to represent each sector's unique perspectives and contributions while highlighting the agency's commitment to fostering collaboration and partnership.



In a regal shade, the government's lightsaber signifies authority, governance, and policy-making. It represents the agency's partnership with governmental bodies to ensure data collection and maintenance align with regulatory frameworks and support evidence-based decision-making.

The private companies' lightsaber, depicted in a vibrant and innovative hue, symbolizes the dynamic and entrepreneurial spirit of the industry. It signifies the agency's collaboration with private entities in the transportation sector, acknowledging their vital role in sharing data and promoting technological advancements in informal and shared mobility.

The community's lightsaber, portrayed in a warm and inclusive tone, represents the collective power and involvement of the people. It signifies the agency's commitment to engaging and empowering local communities, recognizing their invaluable insights and experiences in shaping transportation policies and practices.

The three lightsabers intersect and overlap, forming a harmonious and balanced composition, illustrating the agency's focus on facilitating collaboration and synergy among these stakeholders. Surrounding the lightsabers is a circular motif, symbolizing unity, continuity, and the cyclical nature of data collection and maintenance.

The logo captures the agency's mission to unite government, private companies, and communities to pursue comprehensive and accessible transportation data. It evokes a sense of progress, collaboration, and enlightenment while demonstrating the agency's dedication to transparency, inclusivity, and the advancement of the transportation ecosystem.

Group 2

Agency:
Chief High Commissioner of All Movement



ChatGPT says:

The logo for the public agency responsible for collecting and maintaining transportation data about informal and shared mobility is a vibrant representation of collaboration, connectivity, and inclusivity. The logo incorporates elements that symbolize the key stakeholders and their strong relationships with the agency, creating a dynamic and diverse transportation ecosystem.

At the heart of the logo is an iconic representation of an autorickshaw, jeepney, or cycle rickshaw – a recognizable symbol of informal transportation. This choice highlights the agency's commitment to embracing and understanding the unique needs and challenges of the informal transportation sector and their integral role in the overall transportation landscape.

Interwoven throughout the logo are interconnected threads, forming a network representing collaboration and participatory work. These threads symbolize the agency's strong relationships with stakeholders, weaving together their collective efforts in shaping transportation policies and practices.

To represent the banking sector, a subtle elements such as a financial symbol or icon is incorporated, signifying the agency's close collaboration with financial institutions. This element represents the agency's ability to secure funding streams, facilitate financial transactions, and ensure sustainable transportation solutions within the informal sector.

Academic representation is included through a symbolic element like a graduation cap or a book, highlighting the agency's strong ties with academia. This signifies the agency's emphasis on research, knowledge sharing, and innovation in transportation data collection and maintenance for informal and shared mobility.

An iconic symbol representing drivers, such as a steering wheel or a driver's cap, is incorporated to acknowledge the pivotal role they play in the informal transportation ecosystem. This element reflects the agency's commitment to drivers' representation, welfare, and engagement in shaping policies and practices that directly impact their livelihoods.

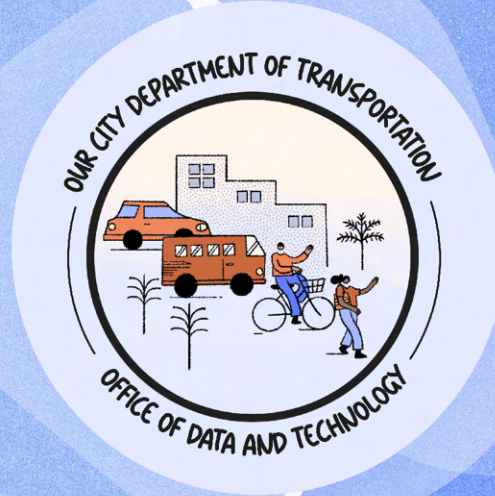
The logo also features a distinctive element representing the city government, such as a city skyline or an emblem, symbolizing the agency's close collaboration with local government bodies. This showcases the agency's commitment to aligning transportation data collection and maintenance with urban planning, policies, and informal and shared mobility regulations.

Finally, the logo incorporates a subtle motif representing passengers, such as silhouettes or abstract figures, emphasizing the agency's dedication to meeting their needs and enhancing their experience within the informal transportation sector.

Overall, the logo conveys a sense of vibrancy, connectivity, and collaboration within the informal and shared mobility landscape. It reflects the agency's commitment to working closely with the banking sector, academia, non-profit organizations, drivers' associations, city government, and passengers. The logo evokes a feeling of unity, progress, and shared responsibility, showcasing the agency's dedication to connecting passenger needs with operators, promoting sustainable solutions, and advancing the informal transportation sector through data-driven decision-making.

Group 3

Agency:
Our City Department of Transportation



ChatGPT says:

The logo for the public agency responsible for collecting and maintaining data about shared and informal transportation is a dynamic representation of innovation, connectivity, diversity, and progress. The logo prominently features vital modes of transportation – a car, a small bus, a bicycle, and a walking figure – symbolizing the various ways people move and highlighting the agency's comprehensive approach to transportation data.

At the center of the logo, there is a distinctive element resembling interconnected wires. These wires represent the integrated data system that connects the different transportation elements, demonstrating the agency's commitment to seamless data collection, storage, and maintenance. The interwoven wires symbolize the interconnectivity of data, creating a robust and reliable foundation for informed decision-making and progress in the transportation sector.

The car, bus, bicycle, and walking figures are arranged harmoniously, representing diverse shared and informal transportation modes. Each element showcases the agency's focus on capturing data from various transportation options, ensuring a comprehensive understanding of mobility patterns and needs.

The integrated data system, represented by the wires, envelops and connects all the transportation elements, emphasizing the agency's mission to create a holistic, data-driven approach to transportation. It signifies the agency's role in unifying data from various sources into a cohesive and integrated system, facilitating comprehensive analysis and decision-making.

The logo's overall design exudes a sense of movement, energy, and progress. It conveys the agency's commitment to leveraging data to drive advancements and improvements in shared and informal transportation. The logo's composition and integrated data system element symbolize the agency's dedication to connectivity, collaboration, and the continuous flow of information to benefit all stakeholders involved in the transportation ecosystem.

Group 4

Agency:
TransAtlantis Data Conductor (National
Data Foundation)



ChatGPT says:

The logo for the public agency responsible for collecting and maintaining data about shared and informal transportation is a compelling representation of connectivity, trust, and collaboration. At its core, the logo features a tree, symbolizing growth, stability, and the foundation of the transportation data ecosystem.

The tree stands tall and strong, representing the agency's role as the National Data Foundation for shared and informal transportation. Its branches reach out in various directions, symbolizing the network of stakeholders involved in data collection and maintenance. Each branch represents a key stakeholder group, including citizens, unions, media, NGOs, government, and academia.

The branches of the tree act as catchers, gracefully capturing and organizing the data flowing through the transportation ecosystem. They demonstrate the agency's role in aggregating and harmonizing information from different sources, ensuring a comprehensive and accurate representation of shared and informal transportation.

The tree's roots extend deep into the ground, symbolizing the people at the heart of the transportation data system. The roots represent the citizens, the drivers, and the passengers, highlighting their indispensable role in generating data and their importance in shaping transportation policies and practices.

Flowing towards the tree is a river of information, depicting the continuous stream of data from various stakeholders. The river represents the collaboration and exchange of information among citizens, unions, media, NGOs, government, and academia, all contributing to a robust and dynamic data ecosystem.

The logo's overall design evokes a sense of trust, growth, and interconnectedness. It symbolizes the agency's commitment to fostering collaboration, transparency, and reliable data flow. The tree, as the central element, represents the agency's foundation, ensuring the integrity and accessibility of shared and informal transportation data.



In summary and what's next

The participants emphasized the importance of commitment to open data, standards, and interoperability while ensuring inclusivity, protection, and empowerment for vulnerable individuals. They highlighted the need for community-led approaches, data privacy, and prioritization of relevant data to address transportation's impact on communities. Additionally, they emphasized the significance of sustainable data practices, transparency, and tailoring data collection to local contexts.

Participants identified various categories of data for collection, including operational data such as routes, fleet information, passenger wait times, and fares. They also emphasized the importance of stakeholder data, including ownership details, operator information, and demographic data disaggregated by gender, race, and socioeconomic factors. Additionally, participants highlighted the need for data on social issues, service and demand, territorial and geographic factors, business aspects, community and governance, safety, and development indicators aligned with the Sustainable Development Goals (SDGs).

Participants recommended combining data collection methods, including devices that gather data through telemetry and GTFS, but not relying solely on devices and machine-generated data. They emphasized the importance of on-site observations, community interviews, reviewing existing contracts and policy documents, and using questionnaires or surveys to gather insights from households, fare users, and drivers. They also highlighted the significance of mapping institutions and organizations involved in the sector and considering the inclusion of different local languages while respecting privacy in data collection and sharing processes.

Participants emphasized the importance of technical capacities, partnerships, and organizational setups for collecting critical informal and shared mobility data. They highlighted the need for effective data utilization, sufficient funding, adequate staffing, accessible maintenance procedures, comprehensive catalogs, contextual understanding, trust-building measures, intermediaries for data sharing, internal data management systems, and offline storage capabilities. They recommended collaborating with universities, data collection companies, transport authorities, associations, startups, cities, development banks, and NGOs. They acknowledged challenges and limitations such as staff turnover, political support, corruption, funding, maintenance, skills, and data standards. Strategies included starting small, capacity-building, supporting change champions, enforcement mechanisms, data hub establishment, and adherence to standards.

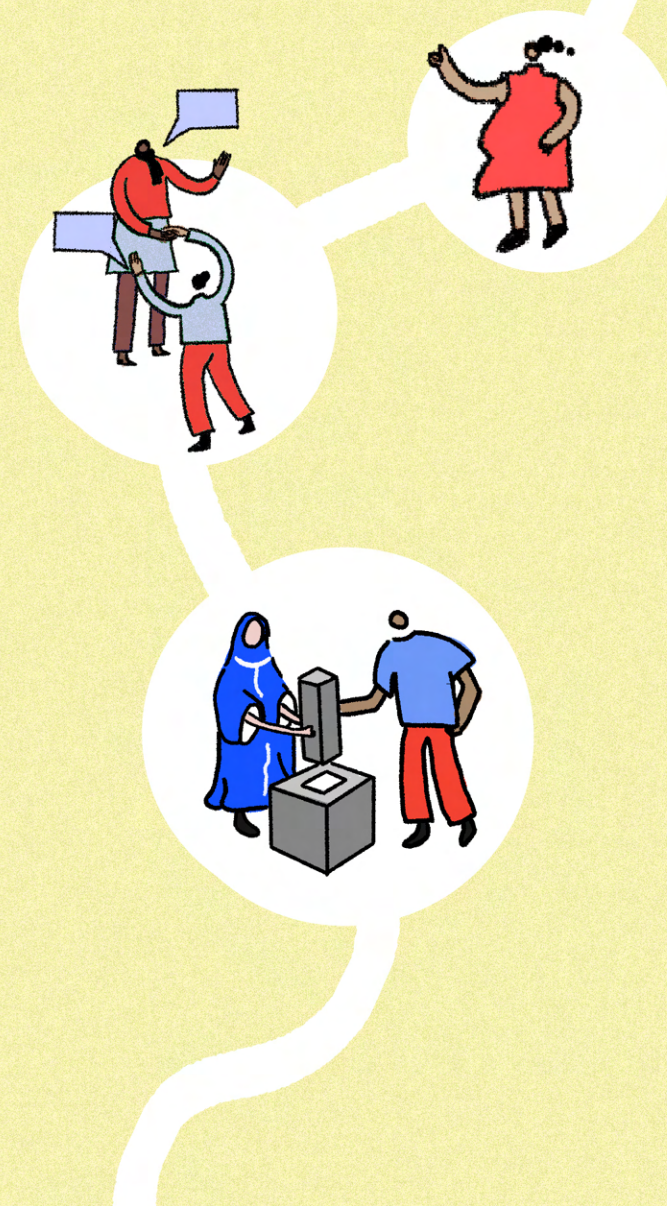
The conversations at the workshop generated ideas for further convenings especially around the mobilizing attention and energy to informal transportation at upcoming conferences. One of the ideas that emerged post the event is the establishment of a standardized and global data collection reporting protocol for informal and shared mobility. The aim is to promote consistency and comparability of data collection practices worldwide for researchers working in shared mobility, particularly informal transportation.





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ACP - Agile City Partners
CETUD - Conseil Exécutif des Transports Urbains de Dakar
Climate Champions Team
CSUD - Center for Sustainable Urban Development, Climate School, Columbia University
DBSA - Development Bank of South Africa
DT4A - Digital Transport for Africa
FCD0 - Foreign, Commonwealth, and Development Office
GIZ - Deutsche Gesellschaft für Internationale Zusammenarbeit
GNPT - Global Network for Popular Transportation
ITDP - Institute for Transport Policy & Development
ITWF - International Transport Workers Federation
KhartouMap
NUMO - New Mobility Alliance
SLOCAT - Partnership on Sustainable Low Carbon Transport
SSATP - Africa Transport Policy Program (World Bank)
SUM4All - Sustainable Mobility for All (World Bank)
SUMC - Shared-Use Mobility Center
TUMI - Transformative Urban Mobility Initiative
UCB - University of California, Berkeley
UCL - University College London
VREF - The Volvo Research and Educational Foundations
WB - The World Bank Group
WRI - World Resources Institute





About The Shared-Use Mobility Center

The Shared Use Mobility Center (SUMC) is a 501(c)(3) non-profit working to replace car-centric transportation with people-focused shared mobility to fight climate change, promote equity, and strengthen community. By connecting the public and private sectors, piloting and supporting mobility projects, conducting research and program evaluation, and providing policy and technical expertise to agencies and operators, SUMC seeks to extend the benefits of shared mobility for all. SUMC provides technical assistance and implementation support to public agencies and community-based organizations across the country, having served as technical advisor on some 120 innovative mobility projects since 2014. As the convener of the annual National Shared Mobility Summit, SUMC has been at the center of the evolving shared mobility industry since its earliest days and continues to play a key role in connecting the people, services, and knowledge that keep the sector moving forward.



About VREF

VREF, the Volvo Research and Educational Foundations is the collective name under which four foundations collaborate to finance research and education in the areas of transportation, environment, and energy. Since the turn of the Century, these foundations – through VREF – have focused on the area of Future Urban Transport (FUT) with the subtitle, “How to deal with complexity.” The overriding goal is to strengthen accessibility for all groups while at the same time radically reducing the negative local and global environmental impacts of transportation.

The four VREF foundations are:

- the Volvo Research Foundation,
- the Volvo Educational Foundation,
- the Dr. Pehr G. Gyllenhammar Foundation,
- the Håkan Frisinger Foundation for Transport Research.



About the Global Network for Popular Transportation

The Global Network for Popular Transportation (GNPT) is a global network of researchers, consultants, advocates, companies, agencies, and institutions committed to changing how the world sees popular transportation. GNPT believes that popular transportation can play a crucial role in decarbonizing transportation through a Just Transition, and that these systems can be powerful engines for economic mobility and for creating more sustainable and inclusive cities. GNPT is a project of the Shared-Use Mobility Center.

About Design and Layout

www.36estudio.com



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