

Barriers and Benefits of Community-Based Research (CBR) in Transportation Geography: Insights and Experiences

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This research brief is one of a series of briefs that shares findings from research conducted as part of Mobilizing Justice's Theme 1, which aims to understand the experiences of people, especially those facing transport-related social exclusion, across different transportation modes.

OVERVIEW

Mobilizing Justice's case study researchers examine how equity-deserving groups in Canada experience exclusion in transportation using community-based research (CBR). Conversations amongst the case study researchers reveal that CBR is infrequently utilized within their transportation research networks, despite its potential to provide valuable insights into the lived experiences of transportation systems (Thurman et al., 2025). While the benefits of CBR have been documented in other disciplines, there has been limited examination of why it remains underutilized in transportation scholarship and what factors enable or constrain its adoption. This gap motivated a formal investigation into the barriers and benefits of conducting CBR in transportation research through individual and group interviews.

Findings indicate that barriers continue to limit the integration of CBR into transportation research, despite its potential to create meaningful benefits. This research brief describes the study methodology, explores four key themes that emerged: perceptions of community-based research, guiding principles, challenges, and benefits, and highlights recommendations for strengthening transportation research and practice through the broader adoption of community-based approaches.

METHODS

Individuals affiliated with the *Mobilizing Justice Partnership* who had CBR experience in transportation geography were invited by email to participate in a semi-structured interview. Between July and December 2025, 7 virtual interviews occurred with 11 participants. Participants represented diverse roles, including graduate students, researchers, professors, policy professionals, urban planners, and health promoters. Their work focused on identifying mobility needs amongst underserved populations in Canadian communities, with attention to intersectional factors affecting transportation access. Research areas included rehousing, needs assessments, travel barriers, transportation planning, transport-related austerity and health outcomes, and links between transportation and substance use. Projects involved collaborations with advocacy groups, governments, community organizations, youth, neurodivergent communities, low-income families, and health centers across urban, rural, and northern communities.

Although group interviews were initially planned, individual interviews were also conducted to accommodate participant availability. Both formats supported the collection of participants' expertise, experiences, and perspectives (Frey & Fontana, 1991; Knott et al., 2022). Participants received the interview guide 24 hours before each session. Developed by the case studies group, the guide included four sections: contextual information, benefits, challenges, and resilience, and was used consistently across interviews. Informed consent was obtained from all participants, including provisions for withdrawal and confidentiality. Interviews were conducted in English, lasted 40–90 minutes, and involved one interviewer and one to two participants. Sessions were recorded, transcribed using Zoom's embedded features, and manually reviewed for accuracy.

Transcripts were analyzed using reflexive thematic analysis to identify patterns in the data (Braun & Clarke, 2019). In Spring 2026, participants were invited to a validation session to confirm interpretations and strengthen the credibility of findings (Korstjens & Moser, 2017). This study was approved by the McMaster University Research Ethics Board [#7365].

FINDINGS

Four overarching themes emerged: perceptions of community-based research, guiding principles, challenges, and benefits, along with associated subthemes (See Table 1). *Perceptions* capture how participants understand CBR, how the community-based researcher is conceptualized, and the misconceptions encountered. *Guiding Principles* emphasizes the central role of the research question in guiding the research process. *Challenges* highlight the practical and structural barriers faced by researchers when conducting CBR, including academic, financial, temporal, perceptual, and in-the-field. *Benefits* reflect the positive outcomes of CBR for communities, researchers, and future practice.

Table 1: Overarching Themes and Associated Subthemes

Major Theme	Associated Subthemes
Perceptions of Community-Based Research	• Understandings of community-based research • Conceptions of the community-based researcher • Misconceptions about community-based research
Guiding Principles	• The importance of the question(s)
Challenges	• Academic • Financial • Time • Perceptual • In-the-field
Benefits	• Community • Expanding the role of the researcher • Future considerations

Perceptions of Community-Based Research

For the purposes of this study, CBR is understood as a collaborative approach to transportation research that centers the knowledge, experiences, and priorities of communities affected by transportation systems and decisions. It involves meaningful engagement amongst researchers, transportation practitioners, and community members to identify mobility challenges, develop context-sensitive solutions, and ensure that transportation planning and policy reflect community needs.

Findings indicate that, despite the working definition adopted for this study, no universally accepted definition of CBR within transportation scholarship exists. Participants emphasized that CBR is interpreted in multiple ways depending on the research context and disciplinary perspective. As one participant explained:

"There are lots of different ways to think about and define community-based research. It can include a lot of different aspects of participatory action research."

Similarly, another participant described CBR as:

"Research tailored to the community and co-developed with them."

Understandings of Community-Based Research

Participants articulated their own interpretations of CBR, clarifying roles, responsibilities, and positionalities (*See Table 2*). They emphasized its foundation in relationships, lived experience, and local knowledge. Although viewed as complex and sometimes unpredictable, CBR was seen as an inclusive process that prioritizes community needs, challenges traditional decision-making, and fosters reciprocal partnerships. Participants identified key outcomes as building community capacity, strengthening resilience, improving livelihoods, and creating meaningful change.

Table 2: Common understandings of CBR amongst interviewees

Who's involved	• Community members • Researchers • Practitioners (i.e., urban planners, health promoters, etc.)
The process/ the approach	• Bottom-up • Community driven • Requires relationship building • Narrative engagement • Onsite • Messy and difficult • Collaborative and inclusive • Unpredictable
The focus	• The community of interest's particular needs/ point of view • The public good and changes to the public sphere • Creation of long-term reciprocal relationships • Changes to improve livelihood • Challenges municipal autonomy
The outcomes	• Mutually beneficial • Responds to community needs • Resilience in the face of adversity • Possibility of change • Capacity building

Conceptions of the community-based researcher

CBR was described as more than a methodological approach; it was understood amongst participants as a broader scholarly identity grounded in relationships, reciprocity, equity, and shared responsibility. While practices such as transparency, trust-building, and responsiveness are important across research traditions, participants emphasized that community-based researchers enact these commitments through a distinct orientation toward power-sharing and accountability to communities. For these researchers, community engagement extends beyond individual projects and is integrated throughout their research, teaching, and service. A community-engaged researcher was described by interviewees as someone who:

- Builds sustained, reciprocal relationships with communities by investing time in understanding community histories, contexts, strengths, and priorities rather than approaching communities primarily as sites of recruitment or data collection;
- Shares power and decision-making with community partners by recognizing community members as knowledge producers whose expertise shapes research questions, methods, interpretation, and dissemination;
- Develops trust through transparency, accountability, and mutual respect, including being clear about expectations, responsibilities, benefits, and limitations of the research partnership;
- Allows research questions, methods, and outcomes to evolve through partnership, recognizing that community priorities and knowledge may reshape the direction of inquiry;
- Embraces uncertainty and adapts collaboratively, understanding flexibility as a necessary part of responding to community needs rather than as a deviation from a predetermined research plan; and
- Remains accountable to community-defined priorities and commitments to equity, ensuring that research contributes to meaningful outcomes identified by communities rather than solely advancing academic goals.

Misconceptions of community-based research

Interviews revealed a prevailing perception that CBR within transportation scholarship is often viewed as informal, resource-intensive, or insufficiently rigorous, contributing to uncertainty regarding its methodological credibility and practical contributions. A recurring concern was the assumption that engaging community members may compromise research objectivity. However, it was felt that the absence of community perspectives can also introduce important forms of bias by limiting the scope of knowledge, experiences, and priorities represented in transportation research and decision-making processes. Historically, many equity-deserving groups have been underrepresented in transportation engagement initiatives, resulting in research outcomes, policies, and systems that may not fully reflect the diverse needs of the communities they serve (Syal et al., 2024). Addressing these gaps requires intentional and proactive approaches to identifying, engaging, and amplifying the perspectives of individuals and communities that have been historically and persistently excluded or marginalized within transportation-related engagement processes.

As one participant emphasized:

“Community-based research is what allows us to hear stories and capture the lived experience of people who use transportation, which is an added value to enact change.”

Participants also noted that CBR in transportation scholarship is sometimes perceived as being more closely associated with advocacy than with “traditional” research. However, CBR is grounded in systematic methodologies, ethical research practices, and evidence-based approaches that can complement conventional research methods by incorporating forms of knowledge that are often overlooked in transportation studies.

It was stressed amongst participants that “community-based research” is often used synonymously with “qualitative research” however, they are not the same. Simply put by a participant:

“It’s important to distinguish between qualitative and community-based research because you could have community-based research that is not necessarily qualitative.”

Qualitative research refers to methods that use non-numerical data, such as interviews, focus groups, and observations, to explore meanings, experiences, and social processes (Akyıldız & Ahmen, 2021). In transportation research, qualitative methods can help identify how groups such as older adults experience barriers to public transit. CBR, however, is defined by its participatory approach rather than the methods used. CBR involves community members as active partners in defining research priorities, developing questions, interpreting findings, and identifying actions based on research outcomes (Minkler, 2005). For example, a transportation-focused CBR project may involve residents, transit users, advocacy groups, transportation agencies, and researchers working together to identify mobility challenges and develop solutions. Although

CBR often uses qualitative methods, it can also incorporate quantitative or mixed-method approaches. The key distinction is that qualitative research focuses on understanding experiences and meanings, whereas CBR focuses on the research relationship, emphasizing participation, shared decision-making, and community ownership of knowledge. A study using interviews with transit users may be qualitative but researcher-led, while a CBR study would involve community members as partners throughout the research process.

Guiding Principles

Research questions play a central role in determining the direction, methods, and value of any research approach, whether quantitative, qualitative, or community-based. However, within CBR, the importance of research questions extends beyond having a clearly defined topic of inquiry. In CBR, research questions are also shaped by who identifies the issue, whose knowledge informs the inquiry, and how communities participate in defining what is important to study.

As one participant explained:

“No research approach or method is better than others inherently. It really depends on what your research questions are. And so, the methods and the approaches that you're going to use are derived from the questions being asked.”

While quantitative approaches may emphasize measurable variables and statistical analysis (Barragosa et al., 2023), CBR focuses on understanding community experiences through collaborative and participatory processes. A key distinction of CBR is that research questions are not solely generated by researchers; they are developed through relationships, dialogue, and shared decision-making with community partners. This collaborative process helps ensure that research reflects community priorities, incorporates local knowledge, and produces findings that are meaningful and actionable for those directly affected.

Within CBR, developing a research question is therefore not only a methodological step but also an opportunity to establish shared ownership of the research process. A broad question such as:

“Why don't people use public transit?”

may reflect a researcher-defined problem but provides limited insight into whose experiences or barriers are being considered. Through a CBR process, community members may help refine the question to better reflect their lived experiences and priorities, such as:

“What barriers do older adults in Toronto experience when using public transit?”

The second question is more aligned with CBR principles because it identifies a specific community, recognizes the importance of lived experience, and creates opportunities for participants to contribute to understanding the issue and developing potential solutions.

Challenges

Similar to researchers' experiences in other fields, the implementation of CBR in transportation scholarship presents several challenges. The following section describes the difficulties identified by participants.

Academic

Participants highlighted academic challenges that are particularly pronounced in community-based transportation research. These include: the time required to establish trusting partnerships, negotiating shared research goals, and adapting methodologies to community contexts. While issues such as extended timelines, authorship practices, and measures of scholarly productivity are common across academic research, participants emphasized that they could become more complex in CBR due to the collaborative and relationship-centered nature of this approach. Building meaningful community engagement requires sustained investment and flexibility, which may extend project timelines and create tensions with grant requirements, institutional expectations, and conventional measures of academic productivity.

Participants also suggested that CBR is discouraged within transportation academia, particularly amongst graduate students, because of its significant time demands and limited funding opportunities. They noted the belief that CBR is often perceived as less traditional or prestigious within academic evaluation systems, making it more difficult to secure scholarships, research funding, and institutional support. Participants further emphasized that community-based outputs, such as reports, practical tools, and policy changes, are frequently undervalued because academic systems continue to prioritize conventional scholarly publications over broader forms of research impact.

These systemic challenges are compounded by a lack of resources to support CBR in transportation studies, particularly in the areas of training and supervision. Interviewees reported limited access to mentorship, opportunities to develop CBR skills, and ongoing professional guidance. Together, these gaps were viewed as significant barriers to building researchers' capacity and expertise, ultimately limiting the broader adoption and potential contribution of CBR approaches within transportation scholarship.

Financial

Participants discussed how CBR demands sustained engagement and resources that are often unsupported by conventional academic funding. Budgets must account for factors such as partner compensation, extended timelines, outreach, trust-building, public meetings, surveys, translation, and participant incentives. Standard funding cycles and reporting requirements frequently conflict with community processes, while grants may favour technical innovation over relationship-building (Auerbach et al., 2022). Short-term awards disrupt long-term partnerships, forcing researchers to balance inclusive practices with financial constraints, often resulting in unreimbursed costs that hinder the researcher and limit the scope, sustainability, and impact of CBR.

Time

A participant noted:

"It's a huge risk, it's very scary doing community-based research when you're a PhD student, and especially a master's student. Actually, even a postdoc. To do it properly takes a lot of additional labour and time, yet you're under this very rigid timeline."

This quote reflects a consistently identified challenge across interviews: the tension between time-intensive relationship-building and rigid academic timelines. Building and maintaining trust with communities requires a significant investment of time, and this process cannot be rushed. However, it is felt that funding agencies, graduate programs, and tenure expectations often fail to account for the sustained effort needed to nurture these relationships. Effective community engagement typically involves extensive coordination, iterative feedback, and ongoing flexibility to accommodate community schedules, all of which can significantly extend project timelines beyond conventional academic expectations. As one participant expressed:

"You know, sometimes it can take a full extra year to build relationships."

Perceptual

Participants expressed frustration concerning the belief that CBR in transportation scholarship is not well understood. They emphasized that this lack of recognition often stems from narrow perceptions of what constitutes valuable research, particularly when academic outputs such as publications are prioritized over other forms of engagement and knowledge production. As one participant noted:

“There's not a lot of understanding behind the type of work that we do.”

While another highlighted that:

“There's a whole other aspect of this type of work besides just, you know, producing a publication.”

In addition, it was noted that CBR is often perceived as an “easy” approach. However, when the steps involved in conducting CBR are explained in greater detail, such as building relationships, establishing trust, engaging community partners, collecting and analyzing data collaboratively, and ensuring shared decision-making, people often recognize the significant time, effort, and coordination required. This realization is frequently reflected in responses such as:

“Oh, wow! That actually sounds like a lot of work.”

In-the-field

Participants highlighted the unique challenges involved in CBR. These challenges included navigating diverse stakeholder priorities, power dynamics, historical experiences of mistrust with institutions, and practical considerations such as safety, accessibility, language differences, and changing community circumstances. Participants emphasized that CBR requires flexibility and responsiveness, as community priorities may not always align with traditional research timelines or approaches. For instance, community organizations may seek timely, actionable outcomes to address immediate needs, while researchers may require additional time for data collection, analysis, and knowledge development. Finding a balance between these priorities often involves ongoing dialogue, mutual understanding, compromise, and collaboration.

As one participant noted:

“There might be conflicting goals between what researchers want and what the community organizations want and capacity.”

Beyond aligning goals, interviewees stressed the importance of building and maintaining trust-based relationships throughout the research process. Researchers must prioritize transparent communication, culturally responsive engagement, and consistent opportunities for community input and feedback (Mittal & Bansal, 2024). Additionally, logistical challenges, including conducting research in remote or complex environments, working with limited resources, and addressing language barriers, require research teams to remain adaptable and develop collaborative solutions that reflect the realities and needs of the communities involved.

Benefits

Highlighted below are the benefits discussed amongst interviewees of using CBR in transportation research.

Community Benefits

Meaningful engagement empowers communities to articulate their transportation challenges and co-create solutions that reflect their everyday realities, resulting in outcomes that are more equitable, relevant, and actionable (Linovski & Baker,

2023). According to interviewees, their work has strengthened local capacity, built trust between residents and institutions, supported advocacy efforts, informed policy development, and contributed to infrastructure improvements that enhance mobility, safety, and access to opportunities. Examples of these outcomes include reducing social exclusion, improving access to essential services and opportunities, fostering a greater sense of self-determination, and informing transportation planning interventions. Together, these outcomes reflect the principles of mobility equity and transport justice by ensuring that transportation decision-making incorporates the lived experiences and priorities of communities that have historically been underserved, while promoting more inclusive, accessible, and responsive transportation systems.

Expanding the Role of a Researcher

An interviewee suggested that CBR in transportation scholarship:

“expands the role of what a researcher can do but also expands the impact that research can have.”

By using community-based approaches, transportation researchers can move beyond traditional roles and become facilitators, collaborators, and advocates who work with communities to understand transportation challenges. This expanded role does not replace the need for rigorous research methods; rather, it requires researchers to apply systematic approaches to community engagement, data collection, analysis, and validation while incorporating local knowledge and lived experiences. This may help build stronger relationships with transportation users and stakeholders, ensuring that research reflects real-world needs while maintaining scientific credibility and methodological discipline.

Working directly with communities also helps researchers develop skills in communication, collaboration, and problem-solving while gaining a deeper understanding of how transportation affects access, equity, safety, and quality of life. This broader role allows researchers to contribute to transportation policies, planning, and practices that support more inclusive and sustainable mobility systems. Community-based transportation research goes beyond academic contributions by creating knowledge that can directly support communities and encourage positive change. As one interviewee reflected:

“We sort of come away learning quite a bit about that community and their needs. And it can really shape and provide new directions for transportation, for our research, and for our understanding of the issues.”

Future Considerations

Participants emphasized valuing lived experience alongside technical expertise. They expressed desire for more transparent decision-making, equitable resource allocation, and research outcomes that lead to tangible improvements in mobility, safety, and access. Findings point to a strong desire to continue to engage with community-based transportation research that is inclusive, action-oriented, and accountable to the people it aims to serve. As one participant noted, the future of transportation research should:

“Accept and integrate different types of knowledge, that comes from lived experience, knowledge that comes from different types of sources. It’s so critical for dismantling how we’ve designed our transportation systems.”

Additionally, participants shared a desire to influence policy and practice, translating their findings into tangible improvements while demonstrating that rigorous scholarship and community benefit can go hand in hand. An interviewee stated their future hope is to:

“Create spaces for people who want to publish this kind of work.”

While another interviewee suggested:

"I'd love to see more people doing CBR in transportation, and to have more training, help, and resources. I hope one day there is inspiration to normalize it amongst reviewers and editors and everyone."

CONCLUDING THOUGHTS

Transportation systems are complex, shaped by social, spatial, and embodied dimensions. While quantitative approaches provide valuable insights into travel patterns, trends, and system-level outcomes, they represent one of many approaches for understanding transportation experiences and processes. Such approaches may not fully capture the ways in which transportation systems are experienced differently across communities, including the social, cultural, and material factors that influence mobility. Interviews suggest that amongst transportation researchers involved in community-based research, there is increasing interest in approaches that incorporate community knowledge, lived experience, and collaborative inquiry. Moving forward, transportation research can benefit from developing institutional structures and research practices that support sustained and equitable engagement, including funding mechanisms and policies that recognize the time, resources, and relational work required to establish meaningful collaborations.

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