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Understanding the Travel Needs of Underserved Populations That Rely on Transportation Network Companies in the San Francisco Bay Area

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BACKGROUND AND OBJECTIVES

Transportation network companies (TNCs) are changing the way people travel by providing dynamic, on-demand mobility that can supplement public transit and personal vehicle use. Early research suggests that TNCs have the potential to expand access and mobility for underserved communities. Yet aspects of the way TNCs operate have come under scrutiny as pricing algorithms and the choices of human drivers have resulted in a number of inequities and biases in cost and service levels across various socio-demographic groups (e.g., minorities, women, people with disabilities). TNCs present opportunities to increase individual mobility and access, but they can exacerbate existing inequities and increase VMT, congestion, and emissions.

Well-designed policy strategies that encourage pooling and first-mile and last-mile connections are needed to balance the objectives of increasing mobility and accessibility for underserved communities while simultaneously mitigating the potential adverse impacts of increased TNC usage from all sociodemographic groups. The objectives of this research were to understand the factors impacting the willingness to use pooled TNCs and other high-occupancy transportation modes and identify related strategies/policies that could be employed to reduce congestion from TNC users. This study builds upon key insights from an earlier National Institute for Congestion Reduction (NICR) University Transportation Center (UTC) study, *Understanding Curb Management and Targeted Incentive Policies to Increase Transportation Network Company Pooling and Public Transit Linkages* (Shaheen, 2021).

METHODOLOGY

Researchers conducted narrative research, which allowed the study team to probe in-depth responses that are not possible through traditional survey techniques. From March 2022 to June 2022, the research team recruited 27 TNC users to engage in semi-structured in-depth interviews and small group discussions about their TNC experiences. These engagements explored user travel behavior, the key factors influencing their decision-making, and their willingness to use higher-occupancy modes, such as pooled TNCs and public transit. These engagements were informed by insights from the prior study, interviews with TNC experts, and a literature review.

Nineteen TNC users participated in semi-structured interviews, and eight other TNC users engaged in one of two small groups. These engagements followed a semi-structured format with flexibility to explore in greater depth unique insights shared by each participant. Researchers asked questions about participants' transportation needs, use and perceptions of TNCs, and their attitudes toward pooling.

RESEARCH FINDINGS

This study led to several key findings regarding TNC customer interest in using pooled rides; consideration of other modes; insights into how disability status, race, ethnicity, gender, and sexuality can influence transportation decision-making; and desired improvements to make transportation more affordable, convenient, reliable, and safer.

While cost savings was the primary motivation for using pooled services, these savings were not compelling enough for them to take pooled rides. Often, the added time and loss of reliability that comes from using the pooled option was as important or more important factor when choosing between pooled and private TNC rides. Participants also reported concerns about their personal safety due to possible interpersonal conflict with other passengers, potential COVID transmission, and the lack of privacy associated with pooled rides. Overall, participants generally preferred private rides, but they employ pooled rides when punctuality is not as important and they desire the additional cost savings.

Almost all participants reported using multiple transportation modes in addition to TNCs. All participants balance cost, time efficiency, and safety factors when choosing or not choosing to use a particular mode. Participants preferred TNCs to driving to avoid the task of driving and save money. Nearly all participants shared that there are significant challenges in using public transit despite it being identified as an affordable mode. Participants expressed a willingness to consider using public transit more often if remedies are made, especially the addition of more routes and more frequent service. Participants agreed that

the transportation needs and challenges among people with disabilities remains a vastly understudied topic as noted in the study's expert interviews. While only a small sample size of disabled participants were included in this study, key insights include the need to think about the wide variety of disabilities that people have (e.g., cognitive impairments, cardiovascular conditions) and the associated accommodations needed (e.g., sensory-friendly environments, protocols for managing passenger medical episodes such as fainting).

Personal safety and public health concerns were commented on by participants across all transportation modes. Overall, concerns focused on the transmission of COVID-19, dangerous driving by TNC drivers, and harassment or violence from TNC drivers and/or other passengers. Personal safety concerns were primarily directed at the in-vehicle portion of the TNC or public transit experience, and they were most pronounced among women and lesbian, gay, bisexual, transgender, and queer plus (LGBTQ+) participants. While safety concerns were not necessarily a deterrent against TNC use, they heavily influenced how participants use TNCs. Many women and LGBTQ+ participants reported specific measures they take to increase their safety, such as asking male friends to wait with them or sharing their location with trusted contacts. Black/African American and Asian/Pacific Islander participants also were more likely to report fear of violence or harassment, but they did not necessarily believe that TNCs were uniquely more dangerous or prone to discrimination than other modes such as driving, public transit, and walking.

POLICY AND PRACTICE RECOMMENDATIONS

The research team developed policy options based on the findings from the literature review, expert interviews, semi-structured interviews, and small group discussions. Many of the policy options overlap with those identified in the prior study.

Similar to the earlier study, we identified increased data sharing between public and private stakeholders as an opportunity for improved congestion management strategies. This would encompass agreements that provide public agencies access to more information on TNC use in their communities to improve curb and road management, while also maintaining the data privacy needs of TNCs to protect personally identifiable information and proprietary data for their business.

Improvements in public transit and pooling services (e.g., more frequent service, dedicated infrastructure for pooling) could have a notable impact on people's willingness to switch from private TNC rides to higher-occupancy alternative modes (e.g., public transit). The addition of more public transit routes and more frequent transit service were mentioned as improvements that could encourage more transit use and more first- and last-mile linkages to public transit. Infrastructure improvements, such as dedicated lanes for public transit and pooled TNC rides, could further increase the attractiveness of higher-occupancy transportation modes.

As noted earlier, personal safety was an important consideration among all participants across all transportation modes (not just TNCs). Additional in-app safety features that allow trusted contacts to check in on the status of a passenger's ride could increase feelings of safety among TNC customers. Since gender appeared to have a notable influence on safety perceptions in both our studies, the option to select the gender of the driver or other passengers also could increase feelings of safety among women and LGBTQ+ passengers and should be explored further. These strategies could improve feelings of safety among existing passengers, as well as increase the willingness of non-users to consider using these services. Most participants also reported concerns for their safety while walking and on public transit, for instance. Efforts to improve safety in public spaces should be carefully considered to avoid an increase in surveillance and police-citizen interactions as some Black/African American participants noted. Interventions that lead to increased surveillance (e.g., police patrols, security camera) could further reduce their feelings of being safe in public environments. Community-led safety programs and long-term investments in mixed-use, high-density development are two options to consider for increasing feelings of safety while walking or waiting for a vehicle or transit vehicle in a public space.

People with disabilities noted some of the unique challenges they face with transportation in this study. Experts noted the importance of improving the availability and reliability of existing TNC services designed for people using wheelchairs. In addition, greater attention should be given to other types of disabilities, such as autism spectrum disorders or medical conditions that prevent people from driving. Engagement with these communities is critical to ensuring appropriate accommodations are provided. Possible ideas shared by a participant with a disability included reduced costs for persons with disabilities, optional driver training that prepares drivers for transporting passengers with various conditions, and identification of drivers who are willing and able to help with certain needs of people with disabilities. This is an important area for future research.

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