Examining the Feasibility of Shared Mobility Programs for Reducing Transportation Inequities

Sarah R. Robinson, LMSW[1], Courtney Cronley, PhD[2], MSW, Kate Hyun, PhD[1], and Farah Naz[1]

[1]The University of Texas at Arlington, Arlington, Texas [2]University of Tennessee Knoxville, Knoxville, Tennessee

BACKGROUND

The share economy has become increasing popular in recent years with the invention of new technologies, which allow individuals to share homes, cars, and rides with ease (McLaren & Agyeman, 2015).

Car-share programs and ride-hailing programs have been discussed as possible solutions to public transportation deficits for environmental justice (EJ) populations (Standing, Standing, Biermann, 2019; Ferrero, Perboli, Rosano, & Vesco, 2018).

EJ populations face an increased risk for transportation disadvantage or reduced mobility due to lack of car ownership or available transportation resources such as public transit (Caplan, Washington, & Swanner, 2017; Shay et al., 2016; Duvarci, Tan, & Mizokami, 2015).

Transportation providers have the capacity to both know the community resources available as well as the potential capability of their clients to utilize innovative transportation solutions.

This study investigated the perspectives of professionals who assist individuals with transportation challenges in order to understand their view of car-share and ride-hail programs.

METHODS

Data for this study were collected through a broader mixed-methods regional study assessing transportation needs among EJ populations during the summer 2018.

This study utilized qualitative focus groups conducted online via Zoom to interview individuals working with EJ populations, including social workers, civil engineers, and public planners.

Twenty-eight individuals participated in 7 focus groups.

Focus groups lasted approximately one hour.

Participants were given $10 gift card.

Focus groups were audio-recorded and then transcribed

Researchers used Atlas.ti to complete a content analysis of the data.

Qualitative analysis resulted in four themes surrounding providers' perceptions of the possibility for car-share and ride-hail programs to mitigate transportation inequities.
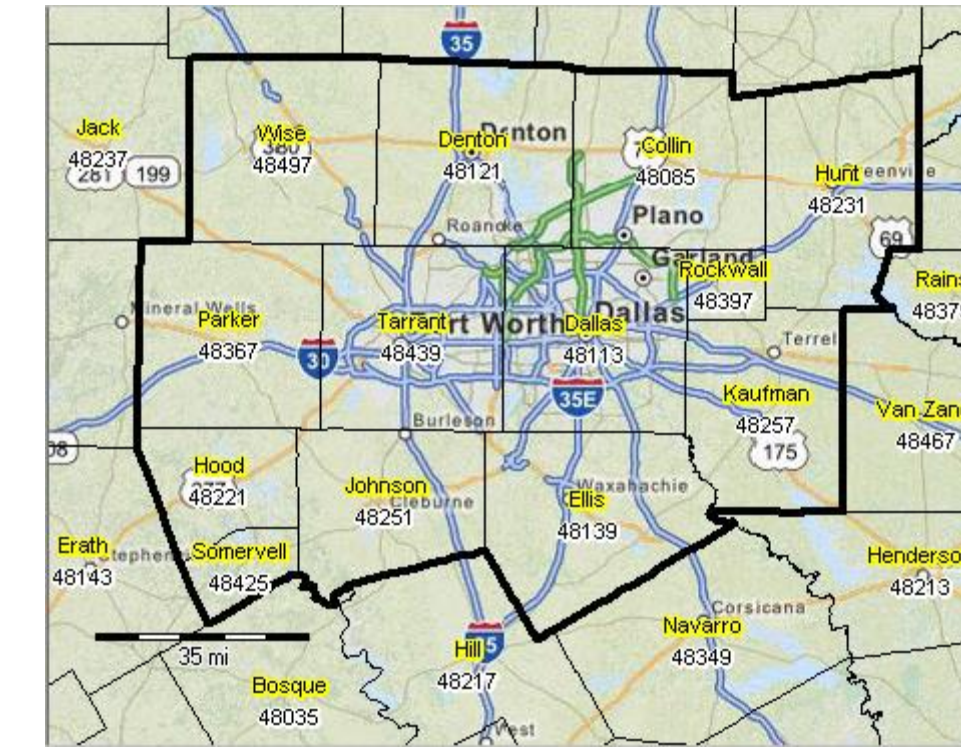
STUDY LOCATION: DALLAS/FORT WORTH/ARLINGTON
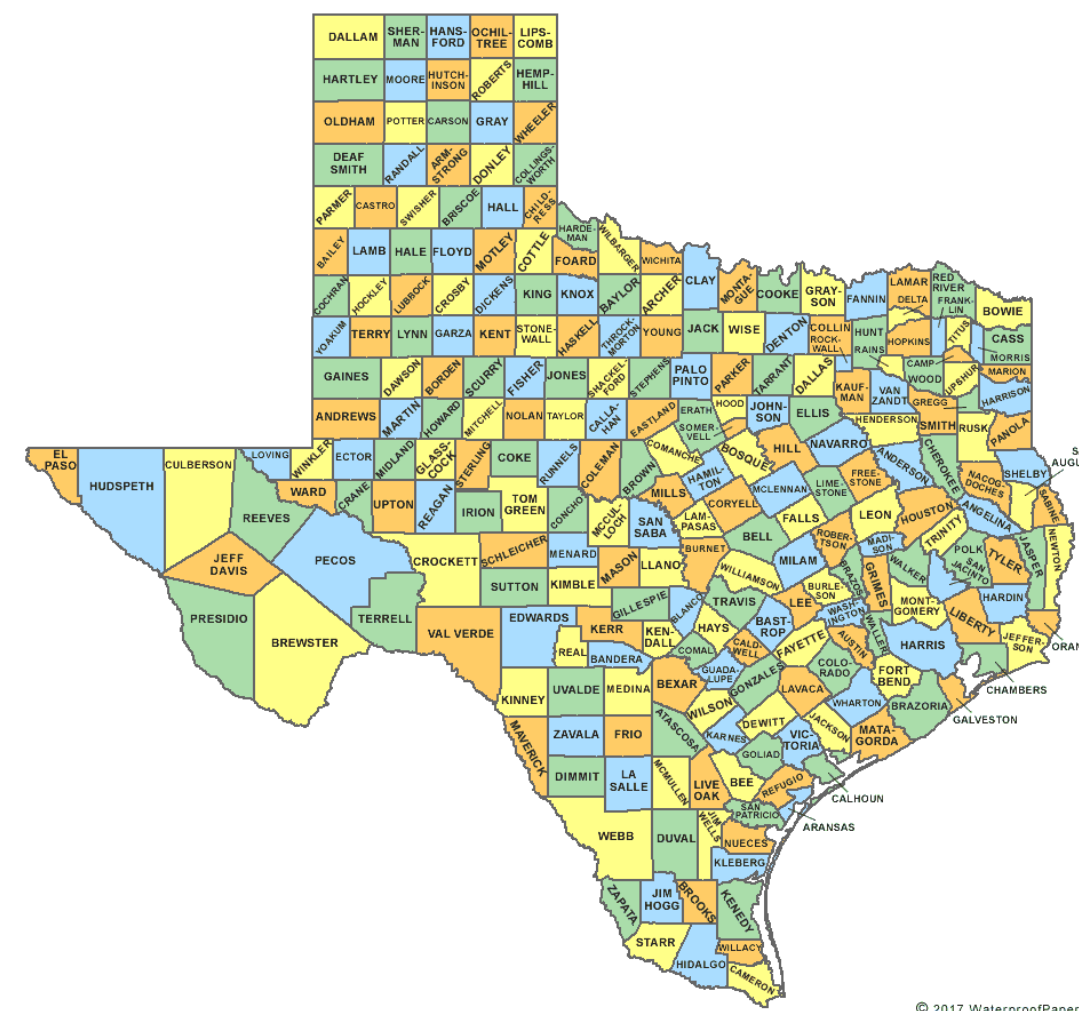
DFW Metroplex:
- Geographically vast and encompasses 13 counties within 9,279.1 square miles
- Total population of 7.4 million according to the 2017 census (Census Reporter, 2019)
- Dallas alone had a total population of 1.3 million in 2018

Available Transit:
- A myriad of public transit and sharing services including buses, trains, bikes and scooters, and sharing services such as Uber, Lyft, Via, and Zipcar
- Most popular is personal vehicle
- Arlington, TX has received attention for being the largest metropolitan area without public transportation (Limon, 2019)

RESULTS

"Have a shared a ride? Many times, and more than happy to do so. But, have I shared a car? I don't think I'm there yet."

"I wouldn't I wouldn't use it. Because number one they're supposed to be very dependable and things like that. But with the, and I know that the security and stuff, but I wouldn't want to call a stranger in their own car, not knowing what kind of car they have, if it's going to break down at 10 o'clock at night because I've got to go to work and then depend on that."

"But getting private rides and things like that, it's so costly, and these people don't have the money to pay for private rides and things like that."

"I have only heard about the expense of Uber up in Grayson county and to go from Ben Austin to Sherman, which is probably like a 15-mile jaunt, it cost a woman $50. I don't know why. That's just what I heard so I really hate to say anything but it's a financial reason why Uber would not be used by my students."

Not There Yet for Car-Share | **Affordability**

Perceived Inconvenience Due to Misconception | **Technological Barriers**

"I don't know if I will ever opt for Zip car because I would have to go pick up the car first. Then share it with people which is not going to happen at all."

"And if that ride for hire, your Ubers, your Lyfts, can provide that flexibility of kind of getting from point A to point B that a typical, fixed route transit service would provide, doesn't provide."
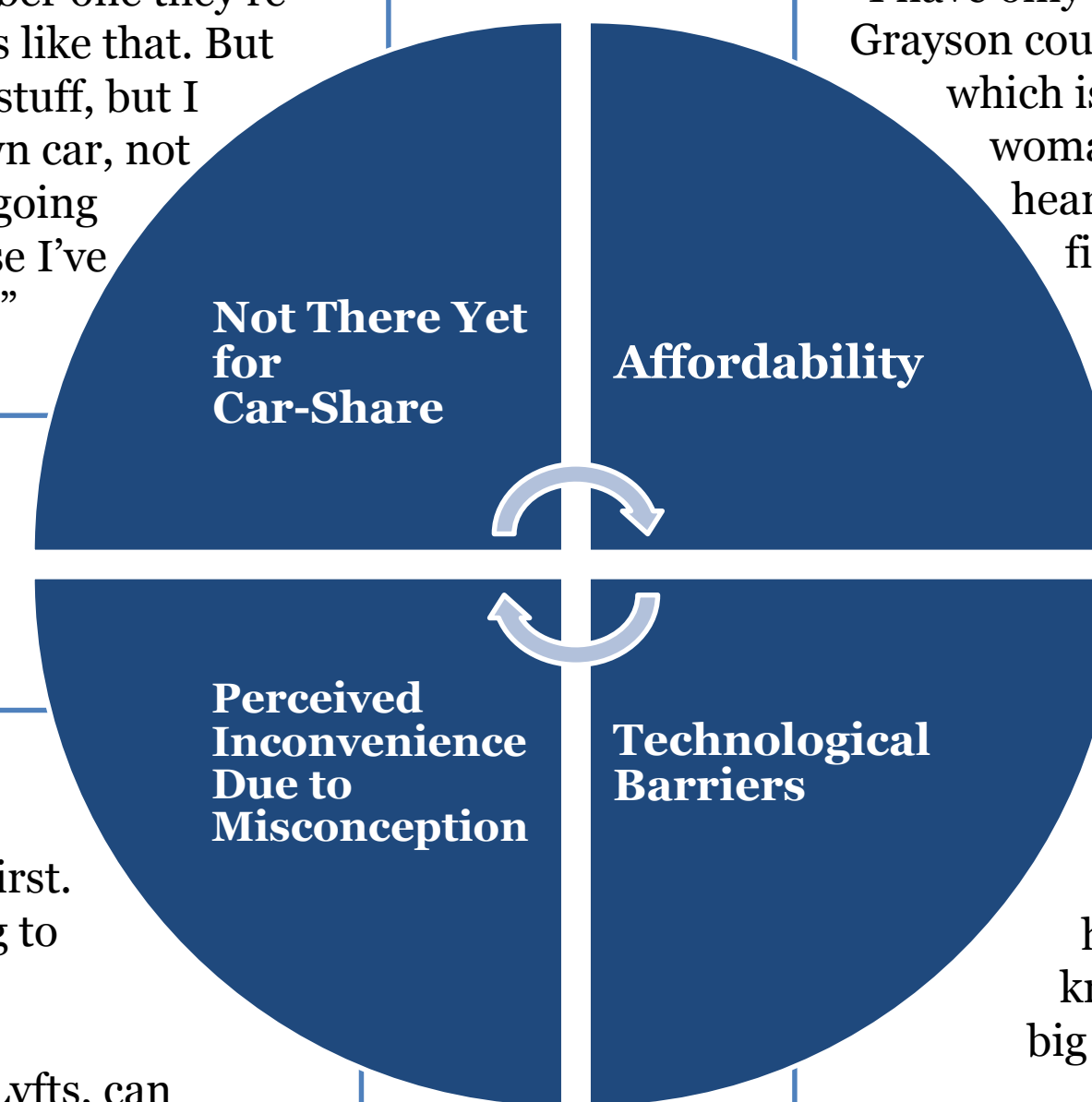
"My concern would be whether or not they would be accepted as participants in a ride share program, based on stereotypes, would be my biggest concern."

"Yeah, you have to have a credit card, you have to have a smart phone, you have to know how to use the app, which there is a big technological barrier there."

"I don't think that the elderly are as unfamiliar with technology now as they have been in the past 20 years it's being getting bigger... I don't think it's a valid assertion that all elderly folks can't use the technology. But several can't or don't have it or don't want to, and so that would definitely be a problem with something like that..."

DISCUSSION AND LIMITATIONS

Lack of familiarity with car-share programs lead to a decrease in recommendation from providers.

Providers were more likely to recommend ride-hail programs even though they may be more costly than car-share programs.

Educating providers on affordability and accessibility surrounding car-share programs could increase usage.

Educating community members on the availability of car-share programs could contribute to car-share services being a viable solution for transportation inequities.

This study is not without limitations:
- Small sample size compared to demographics of study location
- Lack of familiarity with shared mobility services lead to misconceptions about feasibility

IMPLICATIONS FOR FUTURE RESEARCH

- If companies that house shared mobility services considered placing car-share and ride-hail services in centralized, highly utilized areas in low income communities and created opportunities for community members to be educated on how to use the service, providers might be more willing to refer their clients to these services and increase ridership.
- Future research should focus on increases providers knowledge of these services as well as creating additional opportunities for low income communities to access shared mobility services.

REFERENCES

Caplan, M.A., Washinton, T.R., & Swanner, L. (2017) 'Beyond income: A social justice approach to assessing poverty among older adults with chronic kidney disease', *Journal of Gerontological Social Work*, 60(6-7), p553-568.

Census Reporter. (2015) 'Dallas-Fort Worth-Arlington, TX metro area' [Online]. Available at: https://censusreporter.org/profiles/31000US19100-dallas-fort-worth-arlington-tx-metro-area/ (Accessed 30 July 2019)

Duvarci, Y., Tan, Y., & Mizokami, S. (2015) 'Transportation disadvantage impedance indexing: A methodological approach to reduce policy shortcomings', *Journal of Transport Geography*, 48, p61-75.

Ferrero, F., Perboli, G., Rosano, M., & Vesco, A. (2018) 'Car-sharing services: An annotated review', *Sustainable Cities and Society*, 37, p501-518.

Limon, E. (February 22, 2019) 'Arlington doesn't have a public mass transit system, so how do you get around? Curious teas investigates' [Online]. Available at: https://www.dallasnews.com/life/curious-texas/2019/02/22/arlington-doesnt-mass-public-transit-system-get-around-curious-texas-investigates (Accessed 30 July 2019)

McLaren, D. & Agyeman, J. (2015) Sharing cities: A case for truly smart and sustainable cities. 1st edn. Cambridge, MA: MIT Press.

Shay, E., Combs, T.S., Findley, D., Kolosna, C., Madeley, M., & Salvesen, D. (2016) 'Identifying transportation disadvantage: Mixed-methods analysis combining GIS mapping with qualitative data', *Transport Policy*, 48, p129-138.

Standing, C., Standing, S., & Biermann, S. (2019) 'The implications of the sharing economy for transport', *Transport Reviews*, 39(2), p226-242.

UNIVERSITY OF TEXAS ARLINGTON