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Assessing Safety and Mobility Benefits of Autonomous Ride Sharing Services

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Current Situation

Florida currently ranks second in the nation with the highest number of adults aged 65 and older. The Florida Department of Transportation (FDOT), through their Safe Mobility for Life Program/Coalition, is working to eliminate fatalities and reduce serious injuries for Florida's aging road users while maintaining their safe mobility and connection to the community.

With the introduction of autonomous vehicle ride-sharing services—particularly, autonomous shuttles (AS)—older Floridians have an opportunity to commute safer with far less risk of losing their lives while also gaining access to a more independent lifestyle. However, despite known safety benefits, personal and social concerns, such as personal safety and the harmful effects of the COVID-19 pandemic, may challenge their acceptance of this rapidly emerging technology.



For this project, the research team partnered with Beep to learn about the rider experience through the lens of older adult passengers.

Research Objectives

The objective of this project was to identify the user perspective about autonomous ride-sharing services for adults 50 years of age and older in Lake Nona, Port St. Lucie, and The Villages, and to solicit responses pertaining to the adoption and acceptance of these services.

Project Activities

The University of Florida research team in collaboration with FDOT leveraged its network of 56 local community partners to identify areas that used shuttles. From that group, they recruited 240 older adults aged 50 and older who met the criteria for this study, such as age and having a valid driver's license. While all participants completed a before-and-after survey, the research team also recruited 32 individuals to participate in virtual and on-site focus groups, which provided more in-depth information about their experience before and after riding an AS.

The research team partnered with Beep for the AS, which provided all-electric bus-door walk-in entry shuttles with a capacity of 11 passengers. The team then worked with Beep to develop routes and other operational components for the shuttle.

After conducting the surveys and focus groups before and after participants experienced the AS, the team analyzed the data and identified six themes: perceived benefits, safety, experience with AS, shuttle experience, AS adoption, and aging/disability.

Project Conclusions and Benefits

The research showed exposure to AS led to significant increases in AS acceptance but also highlighted the challenges that remain when AS is offered to the older adult community, such as having a limited knowledge or distrust of technology. FDOT is now equipped to develop educational materials and outreach strategies to help older adults utilize AS as a viable transportation option to support community mobility.

For more information, please see fdot.gov/research.