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Earl Huff Jr.

Am I Too Old to Drive?: Opinions of Older Adults on Self-Driving Vehicles

Earl W. Huff, Jr.
Clemson University
Clemson, SC, USA
earlh@clemson.edu

Natalie DellaMaria
Clemson University
Clemson, SC, USA
ndellam@clemson.edu

Brianna Posadas
University of Florida
Gainesville, FL, USA
bposadas@ufl.edu

Julian Brinkley
Clemson University
Clemson, SC, USA
jbrinkl@clemson.edu

ABSTRACT
Fully autonomous or "self-driving" vehicles are an emerging technology that may hold significant mobility potential for both disabled persons and for older adults unable to operate a conventional motor vehicle. It can be argued, however, that the needs, preferences and concerns of older adults and disabled persons regarding this technology have been insufficiently explored. Using focus group methodology, this study explores the sentiments of 39 older adults (55+) regarding self driving vehicle technology. Discussions from the focus groups revealed that although participants believed that self-driving vehicles can enhance their mobility and independence, they were concerned about their reliability and safety. Participants expressed additional concerns regarding their ability to purchase such a vehicle and the training required to operate it. Opinions were mixed regarding the consideration of older adults in the design of the technology.

Author Keywords
older adults; autonomous vehicles; self-driving vehicles

CCS Concepts
•**Social and professional topics** → **People with disabilities; Seniors;** •**Applied computing** → **Transportation;** *Consumer products;*

INTRODUCTION

Older adults, persons aged 55 and older, often face increasing obstacles to personal mobility as they age. Age related declines in cognitive and/or visual capacities or physical impediments from a stroke, fall or other health crisis may make the safe operation of a conventional motor vehicle difficult or impractical. The deleterious effects of this driving cessation on older adults' physical, mental, cognitive and social functioning have been broadly studied [2,3,15]. Emerging autonomous vehicle technologies have been described as potentially emiloreating this issue for many seniors given that the most advanced of these technologies are projected to operate without a human driver and with minimal direct human control. By removing the need for direct management of safety critical steering, acceleration and braking, older adults and persons with a range of disabilities may potentially travel safely, independently and conveniently. Despite the promise of this technology, however, there are significant knowledge gaps as it relates to the experiential needs, user preferences and concerns of seniors relative to self-driving vehicles. How, for instance, should a self-driving vehicle accomodate a senior with speech difficulty, a motor disability or hearing loss, for instance? What are the preferences of seniors regarding vehicle interaction and operation and do these preferences differ from those of younger adults? These and other knowledge gaps are problematic given that good design is often driven by user research and an understanding of user needs. This knowledge gap may therefore serve as an impediment to the accessibility of this emerging technology for seniors and de facto barrier to consumer adoption.

While issues with mobility exist for other populations, persons with disabilities for instance, mobility for seniors will grow increasingly important given the size, overall wealth and increasing life expectancy of the senior population. According to the US. Census Bureau, there were approximately 35 million people in the U.S. age 65 and older in 2003 [14]. This number increased by nearly 27% from 2003 to 2013 to approximately 43 million people [14]. It is projected that by 2030 there will be roughly 74 million seniors living in the United States; representing more than a quarter of the total U.S. population [13, 34]. Failure to adequately consider the needs and concerns of this group could prove disastrous for consumer adoption of self-driving vehicles given the financial wherewithal of many older adults [19, 37].

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