# MOUNTAIN-PLAINS CONSORTIUM

RESEARCH BRIEF | MPC 19-388 (project 467) | June 2019

## Cognitive Underpinnings of Beliefs and Confidence in Beliefs about Fully Automated Vehicles

## the **ISSUE**

Self-driving vehicles are an emerging technology that will radically reshape transportation on roads and highways. The views currently being formed of fully automated vehicles and the confidence with which these views are held are important because they will affect consumers' willingness to adopt these vehicles. Consumer opinions will also determine support for the legal and physical infrastructure needed to put the technology on our roads. To date, studies have not examined consumers' confidence in their beliefs. Confidence or certainty is important because it determines willingness of people to act on their beliefs and the extent to which their beliefs are susceptible to influence.

## the **RESEARCH**

A survey was conducted to examine the relationship between consumers' beliefs about automated vehicles, their knowledge of automated vehicles, and their views about technology. The researchers investigated how knowledge of self-driving vehicles, perceived knowledge of self-driving vehicles, general beliefs about the self, and beliefs about technology are shaping attitudes toward self-driving cars and the confidence with which these attitudes are held. Consumers also expressed their intentions to purchase a driverless vehicle, and their support for legislation and policies to put these driving systems on our roadways. Additionally, consumers completed a measure of their perceived knowledge and a test of their actual knowledge of fully automated vehicles. They also filled out the general self-confidence scale.

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## Project Title

Cognitive Underpinnings of Beliefs and Confidence in Beliefs about Fully Automated Vehicles


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## the FINDINGS

The most negative views were held by consumers who had the least knowledge of self-driving cars. Low trust in technology was also associated with more negative views. Although consumers were generally confident in their views of self-driving cars, many were uninformed about them. Consumers' confidence in their beliefs about self-driving cars was more strongly correlated with perceived knowledge and general confidence than real expertise. Thus, consumers' confidence in their opinions about fully automated vehicles appears to be driven by cognitions that are largely superfluous.Participants' confidence in negative beliefs about fully automated vehicles suggests their opinions will not be easily influenced via persuasion.

## the IMPACT

Fully automated vehicles are expected to be safer and more energy efficient than current automobiles and are expected to reduce traffic congestion and insurance rates. The adoption of fully automated vehicles and the support for policies to put these vehicles on our roads is heavily dependent on public attitudes toward this emerging technology. Unfortunately, beliefs about driverless cars are mixed. This research indicates that misconceptions and ignorance are responsible for much of the negativity. Consequently, education and communication about fully automated vehicles could be effective in changing consumer attitudes. However, the high levels of confidence of consumers harboring negative views of driverless vehicles suggest that these opinions may be resistant to persuasion. Direct experience with fully automated vehicles, rather than communication, may be necessary to convince skeptical consumers of the merits of the technology.

For more information on this project, download the entire report at http://www.ugpti.org/resources/reports/details.php?id=947


For more information or additional copies, visit the Web site at www.mountain-plains.org, call (701) 231-7767 or write to Mountain-Plains Consortium, Upper Great Plains Transportation Institute, North Dakota State University, Dept. 2880, PO Box 6050, Fargo, ND 58108-6050.

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