Attitude and Behavioral Intentions Regarding Autonomous Automobiles: Effects of Emotional Response and Locus of Control

TREO Talk Paper

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Abstract

Many technology organizations, such as Alphabet, Cruise Automation, Intel, and Mobileye, along with established automotive enterprises including Ford, Toyota, GM, and Hyundai are heavily invested into the research and development of autonomous vehicles. Autonomous vehicles have gained considerable attention by media outlets that seek to capture the evolution of science fiction into contemporary reality. Yet, it is not clear if individual consumers are excited about these technological changes or more apprehensive. Research that investigates how consumers will react to such technologies, particularly as automobiles and technology both appeal to the emotions of individuals, has not yet been conducted. Automobiles are often marketed using different factors such as vehicle performance, design, and driving pleasure/driving enthusiasm. Furthermore, anxiety and/or the desirability of control may influence the intent to adopt or continue to use certain modes of transportation. Using established emotional constructs and measurement items will likely lead to a more comprehensive theoretical model examining the adoption of future autonomous vehicles. The relative importance of these antecedent factors is not known, and the results would provide theoretical and practical results about consumer attitudes and adoption of autonomous automobiles. To address this gap concerning a technology that will become part of our society’s norm, this research study addresses two general research questions: 1) Does technology enthusiasm, technology anxiety, locus of control, driving enthusiasm, and/or driving anxiety impact the adoption intent of autonomous automobile technology?, and 2) Is adoption intent moderated by the level of autonomy of the vehicle?

We propose a technology-specific investigation utilizing the Theory of Planned Behavior/Technology Acceptance Model/Unified Theory of Acceptance and Use of Technology models to include these antecedents while moderating the level of autonomy to determine how consumer attitude and behavioral intent is influenced by the level of vehicle autonomy. We plan to conduct a partial least squares structured equational modeling (PLS-SEM) analysis of the collected data to establish the existence of the relationships. More specifically, we hope to identify relationships between enthusiasm, anxiety, and control on attitude and intent based on the level of autonomy. One limitation will be the assessment of contexts that most individuals have not personally seen or experienced. As such, a wide variety of control variables will be integrated, including prior driving experience, location, having been involved in an accident, knowing of media reports concerning autonomous vehicles, and other relevant variables.

As autonomous vehicles are marketed directly to consumers as products or simply services, research should seek to understand the attitude and behavioral intention toward such products and services. For many decades, automobiles have been marketed and described through driving experiences. Furthermore, automobiles are often described in the media through their ability to convey driving enjoyment, beyond simply providing a reliable transportation option. Yet, technology is often marketed based on simplicity, interoperability, and forward-thinking approaches. It might seem that traditional automobiles are marketed to elicit enthusiasm, while technology is marketed to reduce anxiety. With autonomous vehicles blurring the line between traditional cars and future-age technology, it is yet unknown what marketing approach may be the most effective because we do not yet know how the consumer public thinks and feels about autonomous vehicles.