

Tapping the Brakes: An Exploratory Survey into Consumer Perceptions of Autonomous Vehicles

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ABSTRACT

We are approaching a time when the automobile industry will present to the consumer for purchase and use a fully autonomous vehicle, one which will have the ability to perform all the essential driving functions without intervention by an individual. While consumers currently use vehicles that perform some autonomous

tasks (cruise control, auto-parking), totally autonomous vehicles will be a fundamental change in the way consumers interact with the automobile. Autonomous vehicles will bring a positive impact to both individuals and society. Autonomous vehicles are predicted to decrease traffic, increase productivity, lower insurance rates, contribute to less accidents and parking, and much more.

While there are both personal and societal positives in embracing the technology, it will require users to willingly give up control of driving functions and trust the machine with their personal safety. Due to these requirements of the consumer, this exploratory study will delve into consumer perceptions of autonomous vehicles by considering three important concepts; Locus of Control (LOC), Ease of Use (EOU), and the Certainty of Product Performance (COPP). Against these concepts we will ascertain whether consumer perceptions are significant determinants for a consumer's willingness to purchase an autonomous vehicle.

Locus of control is a psychological concept that references how strongly an individual believes they have control over situations that affect their lives (Glossary of Education, 2019). Success or failure can either be internal factors such as their own effort to control events or external factors beyond their control. Ease of use concerns the complexity of a concept and how much training is required to grasp, understand and master. Certainty of product performance was introduced by Weathers, Sharma and Wood (2007) which measures the degree to which a consumer believes that a product will perform well and as it is supposed to.

An online survey was developed to first explain the basic concept of a fully autonomous vehicle and then determine consumer perceptions. The survey was taken from business students at a southeastern university for extra credit with the invitation to family and friends. The sample include various education backgrounds, an equal distribution of both male and female, and ages from 17 to 72.

Factor analysis was performed to reduce the scale questions to single variables. The analysis confirmed that all three constructs were considered significant when considering the willingness of a consumer to purchase an autonomous vehicle. Concerning LOC, it was found that the greater the need for control, the less willingness to purchase by a consumer. For EOU, the simpler and more clearly understood the greater willingness to purchase. Finally for COPP the greater the certainty the vehicle would perform properly the greater the willingness to purchase.

In our conclusions we confirm that successful marketing of an autonomous vehicle need take into account the concerns of consumers that they will perform as advertised, will not be too difficult to understand and master, and must assure those consumers with a high locus of control that both their internal and external LOC concerns are addressed in a function vehicle. Success for a vehicle, one which represents a fundamental change in our interaction with a long-standing consumer good, will require extensive testing and review before it can be accepted by the general population.

References:

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Relevance to Marketing Educators, Researchers, and Practitioners: For Educators and Researchers, understanding the personal motivations of consumers is considered vital in crafting brand messages that resonate, especially when it concerns innovations that create fundamental change in consumer actions. For Practitioners, introducing innovations that run counter to a consumer's normal behavior pattern will require an understanding of those concerns and how to properly address them.

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