



May 2020

# The Impact of Autonomous Vehicles

Preston Loveland

Brigham Young University, [pcl88@byu.edu](mailto:pcl88@byu.edu)

Follow this and additional works at: <https://scholarsarchive.byu.edu/marriottstudentreview>



Part of the [Automotive Engineering Commons](#), [Business Intelligence Commons](#), [Management Information Systems Commons](#), and the [Technology and Innovation Commons](#)

Marriott Student Review is a student journal created and published as a project for the Writing for Business Communications course at Brigham Young University (BYU). The views expressed in Marriott Student Review are not necessarily endorsed by BYU or The Church of Jesus Christ of Latter-day Saints.

### Recommended Citation

Loveland, Preston (2020) "The Impact of Autonomous Vehicles," *Marriott Student Review*. Vol. 3 : Iss. 4 , Article 27.

Available at: <https://scholarsarchive.byu.edu/marriottstudentreview/vol3/iss4/27>

This Blog is brought to you for free and open access by the Journals at BYU ScholarsArchive. It has been accepted for inclusion in Marriott Student Review by an authorized editor of BYU ScholarsArchive. For more information, please contact [scholarsarchive@byu.edu](mailto:scholarsarchive@byu.edu), [ellen\\_amatangelo@byu.edu](mailto:ellen_amatangelo@byu.edu).

# The Impact of Autonomous Vehicles

*Written by Preston Loveland*

Autonomous vehicles, or self-driving cars, are perhaps the biggest revolution in modern transportations since the invention of the automobile. But are these vehicles really safe? And what kind of an impact would they have? Here we will go over the research regarding the security of autonomous vehicles, the general opinion of the public regarding this technology, and the potential benefits it might provide.

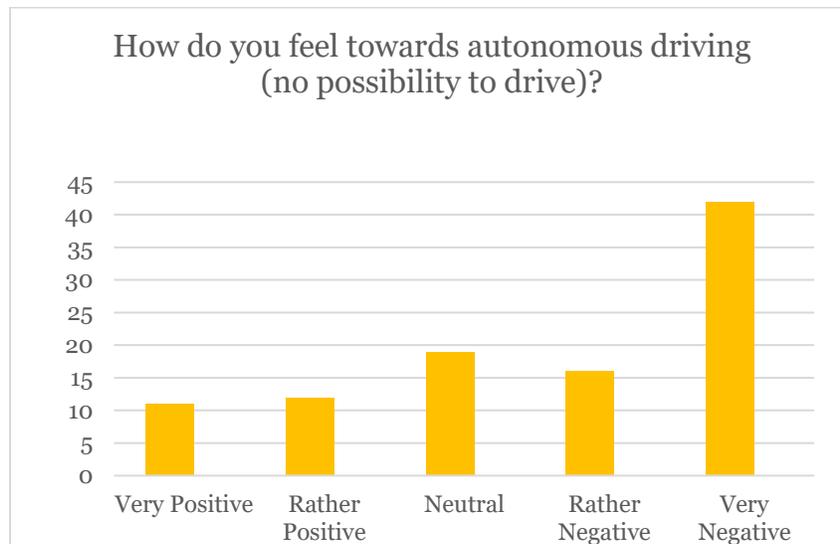
## Are Autonomous Vehicles Safe?

Many people are concerned about the safety of having autonomous vehicles on the road and worry that the technology may be more of a threat than a benefit. However, the research shows that the main cause of vehicle accidents is actually human error. The United States Department of Transportation reported that 94% of serious crashes were caused by human errors. And according to an article on the science behind autonomous driving, these crashes result in approximately 1.25 million deaths globally per year.<sup>1</sup> It appears that self-driving cars could solve this pressing problem of motor vehicle deaths. Furthermore, in her article on implementing self-driving cars, Nela Mircicā proposes that autonomous vehicles will “be instrumental in establishing the safety of public roads.”<sup>2</sup> Some studies predict that autonomous driving effectively eradicates the most dangerous part of riding in an automobile: the human decision maker.

Many companies have already begun utilizing fully autonomous vehicles and have proven their safety. One example of this is Lyft, who has partnered with Google’s Waymo to provide driverless taxis in various parts of the United States. These taxis have incredible track records and are proven to safely drive to various locations. What already appears to be a safe technology will likely only improve as more research and testing is done.

## What Does the Public Think?

Because of fear of the unknown, much of the general public has negative feelings towards autonomous driving, as shown in the graph below.



Source <<https://www-statista-com.erl.lib.byu.edu/forecasts/880307/attitude-towards-autonomous-driving-among-car-owners-in-the-us#statisticContainer>> March 2018

One reason for these negative feelings could be the uncertainty associated with an unknown technology. Autonomous vehicles utilize camera technology to analyze the location of obstacles and adjust accordingly. Because these technological capabilities are so unfamiliar, many people are afraid of autonomous vehicles.

Despite this general feeling of fear, people are becoming more open to the idea. Krishna Gurumurthy writes, “Past studies suggest that AVs [autonomous vehicles] are becoming more acceptable over time and may be a real mode option for use in the relatively near future.”<sup>3</sup> Her study shows that many Americans recognize the efficiency that self-driving cars might provide, but they are still concerned about riding in them. Certain demographics, such as the younger generations, are much more willing to accept these new advances and can easily see the benefits associated with them. To combat the fear that remains, it would be helpful to inform the public about the benefits of adopting self-driving cars.

## What Are the Benefits?

If autonomous vehicles were to be implemented widely, there would be a number of benefits. One of these benefits relates to reduced traffic congestion. In his paper on traffic control with autonomous vehicles, David Rey states, “We also find that travel demand mainly impacts LVs’ [legacy vehicles, standard] travel time whereas AVs’ [autonomous vehicles] travel time are considerably less penalized.”<sup>4</sup> His research discovers that self-driving cars would reduce traffic and cut down travel times immensely. In addition, all self-driving cars could be aware of the position of other cars in order to facilitate quicker routes to the destination.

Another benefit of self-driving cars is increased efficiency due to minimizing time wasted while driving. Americans spend thousands of hours each year behind the wheel, completely focused on the road; however, with access to autonomous vehicles, all those hours could be dedicated to completing other tasks.

The *Arizona Capitol Times* published an article about the impact self-driving cars would have on their state and reported, “self-driving cars could move our economy forward by increasing mobility and efficiency.”<sup>5</sup> These benefits have already begun as different localities have adopted autonomous vehicles in various forms.

## What Do We Need to Do?

Overall, self-driving cars are a much safer alternative to our current driving standards and can provide greater efficiency in many areas. But for these benefits to take place, we need to change the fearful perspective on this technology that many have. This change can only come through the new generation supporting research and development of autonomous vehicles. We must be advocates for what could become the biggest change to modern transportation since the invention of the automobile. By supporting this research, and sharing the benefits inherent in this technology, we can stimulate faster development of autonomous vehicles, improving the lives of millions throughout the world.

---

<sup>4</sup> Diane E. Bailey and Ingrid Erickson, "Selling AI: The Case of Fully Autonomous Vehicles." *Issues in Science and Technology* 35 (3) (Spring 2019): 57–61.

---

<sup>2</sup> Mircică, Nela, "The Design, Implementation, and Operation of Self-Driving Cars: Ethical, Security, Safety, and Privacy Issues." *Contemporary Readings in Law and Social Justice* 11, 2019 (2): 43–48.

<sup>3</sup> Krishna Murthy Gurumurthy and Kara M. Kockelman. 2020. "Modeling Americans' Autonomous Vehicle Preferences: A Focus on Dynamic Ride-Sharing, Privacy & Long-Distance Mode Choices." *Technological Forecasting and Social Change* 150 (01): 1.

<sup>4</sup> David Rey and Michael W. Levin. 2019. "Blue Phase: Optimal Network Traffic Control for Legacy and Autonomous Vehicles." *Transportation Research. Part B, Methodological*. 130 (12): 105.

<sup>5</sup> "Why Arizona is Driving the Future of Self-Driving Cars." *Arizona Capitol Times*, Apr 27, 2017.