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16. Abstract

This report analyzes the expected changes in the amount of driving and trip-length distributions by personal vehicles, should completely self-driving vehicles become widely available. The analysis is based on two key observations. First, a large percentage of young adults (those between 18 and 39 years of age) currently do not have a driver's license, and this percentage is substantially greater than in the 1980s. Second, a recent survey provides information about the reasons for not having a driver's license. Importantly, some of these reasons would no longer be applicable with self-driving vehicles (e.g., "too busy to get a driver's license"), while other reasons would remain valid (e.g., "concerned about how driving impacts the environment").

The basic approach in this study involves combining all reasons for currently not having a driver's license that would no longer be applicable with self-driving vehicles, and calculating the new percentage of persons who would have access to personal transportation with self-driving vehicles. Finally, the new expanded pool of those eligible to use personal transportation is then used to calculate the new amount of travel, as well as the new distribution of trip lengths.

There are two main findings. First, the availability of self-driving vehicles would increase the demand for private road transportation by up to 11%. Second, range anxiety with battery electric vehicles is unlikely to change substantially with the addition of new users made possible by self-driving vehicles, because the proportion of trips that would exceed the current range of the least efficient battery electric vehicles is unlikely to change substantially in either direction.

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Self-driving vehicles, amount of travel, trip patterns, range anxiety	Unlimited

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