

Rematch for Driver's Attention

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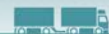
Abstract/Results

- The connection between inattention among drivers and traffic safety is well documented
- Little is known about the effect of new technology, such as screens and information systems, on drivers' attention
- There is not much published literature, which yields uncertain conclusions
- Larger screens seem to be better for attention than small ones, but even more important is usability and the design of the user interface
- The variation between drivers is probably greater than the variation between different information systems. Older drivers are especially warned against advanced information systems.

There is a well-documented connection between driver inattention and traffic safety. A Norwegian survey recently estimated that inattention contributed to about a third of fatal crashes. Reports also show that newer technology, such as smartphones, is one of the main causes of distraction. The digitization and automation of private cars means that constantly new technology is brought into the driver's environment, which can affect attention. Little is known about the effect of new information systems in cars and their effect on drivers' attention.

More and more functions are being moved on to large screens along the centre console in newer cars. These systems differ between car brands, which can make it difficult to see the systematic effects of the systems. Internationally, there are many projects underway to coordinate the development of technology in cars to ensure traffic safety. Some also seek to create systems that can detect and prevent inattentive drivers.

Because inattention is an important cause of accidents, development of new technology provides the motivation for this literature review. The main purpose is to examine published research literature on the effect of new information systems, especially screens along the centre console, on drivers' attention. In addition, we discuss development paths and recommendations.



There is not much published research on the effect of screens for drivers' attention. This is natural as the technology is new and the research needs a few years to mature. Some tendencies can still be found in the literature. One published study looks specifically at the effect of screen size on attention. This study found that larger screens appear to affect attention less than smaller screens. Nevertheless, the study reports that usability and the design of the user interfaces seem to be more important than the size of the screen. There are also some age effects, where older drivers often use more of their capacity to navigate the digital user interfaces. In fact, the American Association of Automobile Owners and the Automobile Industry (AAA) propose that demanding information systems should be avoided altogether, and especially for older drivers (55-75 years). Systems should accommodate drivers by careful placement of physical controls, screen placement in line with forward vision, and promote voice control, according to the authors.

Another critical point in a young research field is that the effect of variation among the participants is probably greater than the effect of the measures being tested. It is necessary to check for characteristics of the research participants, as these systematically vary. New methods for doing this are constantly being developed. We provide some recommendations based on the results, even though these are characterized by uncertainty in the research field. We emphasize the importance of considering the characteristics of a wide range of drivers when developing new technology. We will also need new, high-quality research to follow this development further, as the technology develops and matures.