

Camera monitoring significantly improves driver safety

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A new study has shown HGV drivers drive much more safely when there are cameras in their cabs monitoring their behavior.

Computer scientists and driving psychologists from the University of Nottingham analyzed data collected before and after the installation of unobtrusive cameras in the cabs of Heavy Good Vehicles (HGV) and found there is a significant reduction of risky driving behaviors with [camera monitoring](#), and that this is even more effective when coupled with [coaching](#). Their findings have been published in *Accident Analysis and Prevention* journal.

Driving errors and violations are the leading determinants of road safety and this research highlights the importance of understanding the safety implications of risky driving styles and the extent of the influence of driver-monitoring technologies in improving driving behavior.

The researchers analyzed the largest dataset ever undertaken for this type of research looking at 669 HGVs for the longest period of time ever investigated—June 2017 to August 2019. They analyzed three safety critical telematics incidents—harsh braking, harsh cornering and over speeding incidents. The research was split into cameras with and without the addition of coaching.

The data showed that monitoring and educating [drivers](#) with coaching about the risk and consequence of their driving styles has a significantly greater effect in reducing driving errors, with this intervention reducing harsh-braking by 16%, over-speeding by 34% and harsh-cornering by 31%. Without the coaching these percentages dropped to 4%, 28% and -13%.

The research also showed that weather or seasonal changes can influence HGV risky driving behaviors with highest rates of driving incidents observed during spring and summer seasons. This is likely due to the vast majority of families taking their summer holidays at this time, thereby creating busier roads and tailgating.

Jimiana Mosima Mafeni Mase, Ph.D. researcher with the Horizon Centre for Doctoral Training at the University of Nottingham who conducted the research under the supervision of Dr. Graziela Figueredo, Dr. Peter Chapman and Dr. Mercedes Torres Torres, said: "As drivers are made aware of their monitoring especially with the use of cameras, they become conscious and improve their driving behaviors. With the affordability of in-vehicle cameras, the government can enforce policies that enables all HGV companies to install cameras in their vehicles for safety purposes. We are aware of the [privacy concerns](#) with collecting and storing videos of drivers, however, experts in data privacy can guide [decision makers](#) on how to efficiently implement such policies. In addition, decision makers can provide incentives to encourage frequent coaching of HGV drivers using the videos collected during monitoring as educating drivers has shown to significantly improve their driving styles".

We observed that driving violations such as over speeding are harder to monitor with cameras and may require other factors or methods to detect their causes. Therefore, more multidisciplinary research and collaboration is required between [computer scientists](#), psychologists and human factor specialists to develop more advanced driver assistance systems that can incorporate more information such as external factors and drivers' affective states to accurately detect the cause of incidents or risky driving behaviors."

Graziela Figueredo, lead supervisor added: "This large-scale study is really significant in showing how important monitoring and coaching is in changing driving behavior. With further support from policy makers and HGV companies the findings from this research could be an important step in improving the safety of our roads."

More information: Jimiana Mafeni Mase et al, Evaluating the impact of Heavy Goods Vehicle driver monitoring and coaching to reduce risky

behaviour, *Accident Analysis & Prevention* (2020). [DOI: 10.1016/j.aap.2020.105754](https://doi.org/10.1016/j.aap.2020.105754)

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