

Digital Billboards – The Impact on Driver Behaviour

An Executive Summary

Several studies have examined the crash causation and driver performance in relation to digital billboards. The research offers conclusive evidence that accidents are no more likely to happen in the presence of digital billboards than in their absence.

Tantala Associates, a consulting engineering firm conducted both a temporal and spatial analysis of the statistics of traffic and accident data near all seven existing digital billboards on Interstate routes in Cuyahoga County, Ohio.

The analysis examined the incidence of traffic accidents near the digital billboards for a period of 18 months before and after the billboards were converted from conventional to digital. The purpose was to establish if traffic accidents occurred more or less frequently with the presence of digital billboards.

“The analysis and statistics in Cuyahoga County demonstrate that digital billboards have no statistically significant relationship with the occurrence of accidents,” said Albert M. Tantala, P.E. “Accidents are no more likely to occur near digital billboards than on highway sections without them.”

The Center for Automotive Safety Research at Virginia Tech’s Transportation Institute (VTTI), a premier research institution on transportation and driving performance conducted a human factors study. The VTTI study was conducted in Cleveland, Ohio and followed the model of a previous study conducted by VTTI in 2004 which showed no measurable effects on conventional billboards on eye glance patterns, speed maintenance or lane keeping. In the current study, 36 drivers, unaware of the study purpose, drove an instrumented vehicle on a 50-mile loop along interstates and non-interstate streets in Cleveland. Along the route, participants encountered both conventional and digital billboards as well as other types of outdoor signs such as on-premise business signs and baselines sites with no signs.

Eye glance results showed no differences in the overall glance patterns or frequency of glances between the outdoor sites, but drivers did take longer glances in the direction of the digital billboards. However, the mean glance length towards the digital billboards was less than one second, which is generally considered to be an acceptable amount of time for a glance away from the roadway.

The potential effects of digital billboards at night were also explored. The findings were similar to the daytime results.

The research concluded that driving performance measures (eye glance patterns, speed maintenance and lane keeping) in the presence of digital billboards are comparable with those associated with everyday driving.

“The digital billboards we studied can be considered safety-neutral in design and operations from a human factors perspective,” according to Dr. Suzanne Lee of VTTI, the project’s principal investigator. “The findings were consistent across several measures.”

Both studies were commissioned by the Foundation for Outdoor Advertising Research (FOARE) to provide the industry and the public with an empirical assessment to determine if digital billboards impact driver performance.