

Western Australian Drivers' Use Of And Attitudes Toward Advanced Driver Assistance Technologies

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Abstract

Drivers' use of and attitudes toward Advanced Driver Assist (ADA) technologies were investigated through a telephone survey involving 301 Western Australian drivers. Overall, drivers appeared to have high rates of use and favourable attitudes toward current ADA technologies. A high proportion of drivers agreed technologies such as Blind Spot Monitoring, Lane Keeping Assist and Autonomous Emergency Braking reduced their chance of crashing and helped them to be a safer driver. However, there were indications drivers had less than favourable attitudes toward some elements of ADA technologies, such as Lane Keeping Assist and Lane Departure Warning producing unnecessary or distracting alerts.

Background

Despite the known effectiveness of various Advanced Driver Assist (ADA) technologies to reduce crash involvement (Cicchino, 2017, 2018a, 2018b), there is evidence to suggest drivers do not always rate these technologies favourably and sometimes opt to disable or downgrade their functionality (Reagan, Cicchino, Kerfoot, & Weast, 2018). Consequently, the primary safety status of the vehicle and the driver's risk of crash involvement may be compromised. Therefore, a primary aim of this study was to investigate Western Australian drivers' knowledge, attitudes toward and use of ADA technologies.

Method

Between December 2018 and January 2019, a telephone survey was conducted involving 301 Western Australian drivers of vehicles with at least one of seven ADA technologies: Radar or Adaptive Cruise Control (ACC), Forward Collision Warning (FCW), Autonomous Emergency Braking (AEB), Lane Departure Warning (LDW), Lane Keeping Assist (LKA), Blind Spot Monitoring (BSM), and/or driver Attention Assist (AA). Information was collected on the vehicle most frequently driven and items were included to assess participants' knowledge, attitudes toward and use of their car's ADA technologies.

Results

Of the 301 drivers, the majority were male (n=180; 59.8%), located in metropolitan WA (n=257; 85.4%), and aged 50-59 years (n=135; 44.9%) or 40-49 years (n=89; 29.6%). The median age of the car most frequently driven was 3 years (range: ≤1 year to 15 years). The fitment of ADA technologies ranged from 19.9% (n=60) for AA to 73.4% (n=221) for FCW (Table 1).

The majority of drivers indicated they always had the ADA system switched on and unchanged from factory settings, ranging from 71.6% for LKA to 97.3% for BSM. Lane Keeping Assist had the highest percentage of drivers who mostly or always drove with the system switched off (13.4%), followed by LDW (10.3%).

Drivers appeared to have a positive attitude toward ADA technologies fitted to their car overall; for example, the majority of drivers thought BSM (94.5%), LDW (77.6%), LKA (76.1%) and FCW (72.4%) helped them to be a safer driver and ACC (87.2%) helped them keep a safe distance from

the car in front. A high proportion of drivers agreed BSM can reduce their chances of colliding with another car in an adjacent lane (96.7%), LDW and LKA can reduce their chances of running off the road (86.8% and 86.6%, respectively), and AEB can reduce their chances of having a rear-end crash or colliding with another object (72.4%). However, there were indications that drivers had less than favourable attitudes toward some elements of ADA technologies: 20.9% disagreed FCW can reduce their chances of having a rear-end crash, over one-quarter thought LDW alerts and LKA can be distracting (28.2% and 26.9%, respectively), 29.9% agreed that LKA unnecessarily tried to move their car back into the lane, and 28.2% believed LDW produced false or unnecessary alerts.

Conclusions

Western Australian drivers appear to have high rates of use and favourable attitudes toward current ADA technologies. However, a significant proportion of drivers reported switching off their LKA and LDW thus exposing themselves to a higher risk of run-off road crashes.

Table 1. Driver knowledge regarding fitment of ADA technologies (n=301)

ADA Technology	Response, n (%)		
	My car is fitted with this feature	My car is not fitted with this feature	I am unsure if my care is fitted with this feature
Forward Collision Warning	221 (73.4%)	62 (20.6%)	18 (6.0%)
Autonomous Emergency Braking	141 (46.8%)	112 (37.2%)	48 (15.9%)
Adaptive Cruise Control	196 (65.1%)	83 (27.6%)	22 (7.3%)
Lane Departure Warning	174 (57.8%)	108 (35.9%)	19 (6.3%)
Lane Keeping Assist	67 (22.3%)	204 (67.8%)	30 (10%)
Blind Spot Monitoring	183 (60.8%)	96 (31.9%)	22 (7.3%)
Attention Assist	60 (19.9%)	202 (67.1%)	39 (13%)

References

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