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USING TELEMATICS DATA TO COMPARE THE BRAKING BEHAVIOUR OF FEMALE AND MALE DRIVERS IN AUSTRALIA



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Synopsis:

Road traffic crashes have emerged to be the leading cause of death among young drivers globally. Furthermore, male young drivers remain over-represented accounting for almost two-third of road traffic deaths worldwide including Australia. The current study aimed to incorporate in-car telematics devices into a naturalistic study setting to compare the braking behaviour of female and male drivers over time. Overall, male drivers demonstrated a greater improvement in their braking scores over time.

Using Telematics Data to Compare the Braking Behaviour of Female and Male Drivers in Australia

Background: Globally, road traffic crashes are the leading cause of death among young drivers aged between 15-29 years.¹ In Australia, road traffic deaths for young drivers aged between 17-25 years have decreased by 5% from 2010 to 2019. However, male road users remain over-represented, accounting for almost 73% and 77% of road traffic deaths in 2010 and 2019, respectively.²

Aim: This study aimed to compare the braking behaviour of female and male drivers allocated with the basic and extended features of an in-vehicle telematics device over a 60-day period.

Method: Participants aged between 18 and 30 years, residing in the state of Victoria in Australia and with a valid Victorian driver licence were invited to join this naturalistic study between January and December 2022. This study adopted GOFAR in-vehicle telematics device offering both basic features (adapter and GOFAR app) and extended features (adapter, GOFAR app and GOFAR Ray for driving performance feedback). All participants completed a demographic questionnaire before the start of the study (baseline). They were asked to drive with the basic features of the device for a period of 30 days (period 1). After that, half of the participants were randomised to experience the extended features of the device (intervention group), while the remaining participants continued with the basic features (control group). All participants continued to drive with their allocated devices for an additional 30-day period (period 2). A linear mixed model analysis using braking scores, with higher scores indicating better braking behaviour, was conducted to allow for the hierarchical structure of the telematics data, with trips nested within drivers, and adjusted for age and distance travelled.

Results: A total of 42 participants joined this study with 39 (93%) and 20 (48%) completing data collection for periods 1 and 2, respectively. This study recorded a total of 3,134 and 905 trips for periods 1 and 2, respectively. The average age was 24 years (standard deviation of 2.6 years). The majority of these participants were female (51%), with full driver licenses (67%), mostly residing in a major city (65%). There was a significant gender by period of driving interaction effect ($Z=-2.37$, $p=.018$) for braking behaviour for participants in the control group, but no such result for the intervention group ($Z=1.38$, $p=.168$). However, the marginal plot produced for the intervention group indicated that male drivers showed more improvement in their braking behaviour when the driving performance feedback of the telematics device was available to them in period 2 compared to their female counterparts. On the other hand, the marginal plot generated for the control group revealed deteriorating braking behaviour for male drivers in period 2.

Conclusion: This study suggests that in-vehicle telematics with feedback has the potential to improve the braking behaviour of young male drivers, encouraging them to behave more responsibly when behind the wheel.

Keywords: Road traffic deaths; in-car telematics device; braking behaviour; male and female drivers; Australian young drivers;

¹ Global status report on road safety 2018. Geneva: World Health Organization; 2018. Licence: CC BYNC-SA 3.0 IGO.

² Bureau of Infrastructure, Transport and Regional Economics (BITRE), 2020, Road trauma Australia 2019 statistical summary, BITRE, Canberra ACT