

An Evaluation of the Use of Telematics for Improving the Driving Behaviours of Young People

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Abstract : Background: Globally, there is an increasing trend of road traffic deaths, reaching 1.35 million in 2016 in comparison to 1.3 million a decade ago, and overall, road traffic injuries are ranked as the eighth leading cause of death for all age groups. The reported death rate for younger drivers aged 16-19 years is almost twice the rate reported for older drivers aged 25 and above, with a rate of 3.5 road traffic fatalities per annum for every 10,000 licenses held. Telematics refers to a system with the ability to capture real-time data about vehicle usage. The data collected from telematics can be used to better assess a driver's risk. It is typically used to measure acceleration, turn, braking, and speed, as well as to provide locational information. With the Australian government creating the National Telematics Framework, there has been an increase in the government's focus on using telematics data to improve road safety outcomes. The purpose of this study is to test the hypothesis that improvements in telematics measured driving behaviour to relate to improvements in road safety attitudes measured by the Driving Behaviour Questionnaire (DBQ). Methodology: 28 participants were recruited and given a telematics device to insert into their vehicles for the duration of the study. The participant's driving behaviour over the course of the first month will be compared to their driving behaviour in the second month to determine whether feedback from telematics devices improves driving behaviour. Participants completed the DBQ, evaluated using a 6-point Likert scale (0 = never, 5 = nearly all the time) at the beginning, after the first month, and after the second month of the study. This is a well-established instrument used worldwide. Trends in the telematics data will be captured and correlated with the changes in the DBQ using regression models in SAS. Results: The DBQ has provided a reliable measure ($\alpha = .823$) of driving behaviour based on a sample of 23 participants, with an average of 50.5 and a standard deviation of 11.36, and a range of 29 to 76, with higher scores, indicating worse driving behaviours. This initial sample is well stratified in terms of gender and age (range 19-27). It is expected that in the next six weeks, a larger sample of around 40 will have completed the DBQ after experiencing in-vehicle telematics for 30 days, allowing a comparison with baseline levels. The trends in the telematics data over the first 30 days will be compared with the changes observed in the DBQ. Conclusions: It is expected that there will be a significant relationship between the improvements in the DBQ and the trends in reduced telematics measured aggressive driving behaviours supporting the hypothesis.

Keywords : telematics, driving behavior, young drivers, driving behaviour questionnaire

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