World Academy of Science, Engineering and Technology
International Journal of Transport and Vehicle Engineering
Vol:17, No:07, 2023

Evaluation of the Impact of Telematics Use on Young Drivers' Driving Behaviour: A Naturalistic Driving Study

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Abstract : In Australia, drivers aged between 18 and 24 remained at high risk of road fatality over the last decade. Despite the successful implementation of the Graduated Licensing System (GLS) that supports young drivers in their early phases of driving, the road fatality statistics for these drivers remains high. In response to these statistics, studies conducted in Australia prior to the start of the COVID-19 pandemic have demonstrated the benefits of using telematics devices for improving driving behaviour, However, the impact of COVID-19 lockdown on young drivers' driving behaviour has emerged as a global concern. Therefore, this naturalistic study aimed to evaluate and compare the driving behaviour(such as acceleration, braking, speeding, etc.) of young drivers with the adoption of in-vehicle telematics devices. Forty-two drivers aged between 18 and 30 and residing in the Australian state of Victoria participated in this study during the period of May to October 2022. All participants drove with the telematics devices during the first 30-day. At the start of the second 30-day, twenty-one participants were randomised to an intervention group where they were provided with an additional telematics ray device that provided visual feedback to the drivers, especially when they committed to aggressive driving behaviour. The remaining twenty-one participants remined their driving journeys without the extra telematics ray device (control group). Such trustworthy data enabled the assessment of changes in the driving behaviour of these young drivers using a machine learning approach in Python. Results are expected to show participants from the intervention group will show improvements in their driving behaviour compared to those from the control group.Furthermore, the telematics data enable the assessment and quantification of such improvements in driving behaviour. The findings from this study are anticipated to shed some light in guiding the development of customised campaigns and interventions to further address the high road fatality among young drivers in Australia.

Keywords : driving behaviour, naturalistic study, telematics data, young drivers
Conference Title : ICTTE 2023 : International Conference on Traffic and Transportation Engineering
Conference Location : New York, United States
Conference Dates : July 06-07, 2023

Open Science Index, Transport and Vehicle Engineering Vol:17, No:07, 2023 publications.waset.org/abstracts/158415/pdf