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Editorial

Road Safety on Five Continents – Conference in Jeju, South Korea 2018

1. Introduction

Road traffic injuries resulting in loss of life is one of the major global health problems today with 1.24 million people killed annually, i.e., one person is killed every 25 s in a road crash. Many countries work systematically to reduce the number of road traffic fatalities and have achieved good results; however, much remains to be done. Estimates indicate that, unless action is taken over the next 15 years, the annual number of fatalities in road crashes may rise to 2.4 million, predominantly increasing in low and middle-income countries.

Global cooperation is required to stop the growth of traffic fatalities. To reverse this trend, knowledge, information and experience from success stories and good practice must be shared. Road Safety on Five Continents (RS5C), is an international conference aiming at enhancing road safety globally, by providing a platform for facilitating essential knowledge exchange and helping participating countries to provide a high level of safe and healthy mobility for future transportation.

The foundation of the RS5C lies in state of the art research and good practice. By providing a mutual ground for sharing acquired knowledge and a forum to discuss mutual problems and suitable solutions so that researchers, officials and other stakeholders can learn from results, experiences and success stories.

RS5C aims to be a leading source of research results, information and interaction in the road transport area with a focus on safety, mobility and health issues associated with road transport. This aim is accomplished by cooperation with local as well as global organisations to ensure that RS5C meets local needs with global state of the art solutions. Moreover, RS5C produces papers of high scientific quality that are freely accessible to everyone.

Originally, the emphasis for the conference “Road Safety on Two Continents” was two continents, Europe and North America, to bring road safety researchers together. Conferences were held in Europe between 1987 and 1999 and then expanded to three continents in 2000 when the conference was relocated to South Africa. A fourth continent, Asia, was added in 2007 in which year the conference was hosted in Thailand. In 2016 the conference was expanded to Brazil, South America, hence the new name "Road Safety on Five Continents".

In May 2018, the RS5C conference took place in Jeju, South Korea, and attracted the international research community, national safety experts, decision makers, practitioners and other delegates with an interest in road safety development. More than 100 presentations on road safety were accepted from more than 30 countries. The conference was organised by the Swedish National Road and Transport Research Institute (VTI) in close cooperation with Korea Transportation Safety Authority (KOTSA) and Ministry of Land, Infrastructure and Transport (MOLIT) in South Korea.

The eight peer-reviewed papers in this special issue cover a wide range of topics, demonstrating a broad spectrum of road safety issues from motorised to non-motorised road users, as well as vehicle, road and economical issues.

2. Papers

The following section provides a short summary of all papers according to the respective abstracts written by their authors.

2.1. Pedestrian injuries due to collisions with cyclists in Melbourne, Australia

This study investigated the prevalence of pedestrian injuries resulting from collisions with cyclists in Melbourne, Australia. The intention was to quantify the extent of these collisions and identify if the rate of collisions was increasing, which may highlight a growing road safety issue. The analysis demonstrated that over the past ten years no substantial increase in the number of pedestrian injuries resulting from collisions with cyclists, was seen. Furthermore, the prevalence of injuries was low, especially when compared to injuries sustained by pedestrians from collisions with motor vehicles. The findings highlight that efforts to increase active transport participation should be encouraged and in certain situations it may be suitable to increase interaction and sharing of space between pedestrians and cyclists.

2.2. Using crowd sourcing to locate and characterise conflicts for vulnerable modes

This study aims to develop an innovative and cost effective conflict data collection technique to better understand the conflicts and their severity involving vulnerable road users, e.g., bicycle/pedestrian, bicycle/motor vehicle, and pedestrian/motor vehicle. The study also includes a test of the effectiveness and practicality of the approach taken based on crowd sourced data collection. Crowd sourced data collected through an app is compared with traditional fatality data for hot spot analysis. If widely adopted, this app will enable communities to create their own low-cost data sourcing to identify dangerous sites within their neighborhoods.

2.3. Drink drivers’ views of a voluntary alcohol interlock programme for drink driving offenders in Sweden

A permanent alcohol interlock programme was introduced in Sweden in 2012. This study aims to improve the knowledge of drink drivers’ views of the programme, among both participants and anyone choosing not to participate by submitting their views through a questionnaire posted to the drink drivers’ residences. The results showed

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that for participants who were employed or had their own businesses, the main reasons for choosing the alcohol interlock were the need to operate a vehicle at work and to get to/from work. For those participants not working, the main reasons for participating were that the driving license was required to maintain their social life and meaningful leisure time and for shopping. For non-participants, the main reasons for not applying were programme costs, being afraid of being considered alcoholics, and managing well without a license. The results also indicate improved health after the drink driving offence.

2.4. Review of average sized male and female occupant models in European Regulatory Safety Assessment Tests and European laws: gaps and bridging suggestions

This study consisted of two different parts: The first part comprised reviewing how men and women are represented in regulatory tests conducted to assess adult occupant safety in vehicles in Europe. The second part was to reflect on these issues from a specific critical legal perspective, that is, from a Gender Legal Studies point of view, focusing on the European legal framework that governs the tests of adult occupant safety in vehicles in Europe. The results of the review of the ECE regulations shows that the average sized male represents the adult population and that the average sized female has been excluded from regulations assessing the protection of adult vehicle occupants. This study highlights the undeniable gap between the legal framework and legal requirements with regard to occupant safety for the whole adult population. It would be attainable to bridge the gender gap by providing equal representation for the female part of the population with regard to vehicle safety, as that males benefit from.

2.5. Factors affecting the injury severity of out-of-control single vehicle crashes in Singapore

Single-vehicle (SV) crashes are of major concern because of their high fatality rates. To understand the proneness of high injury severity for vehicle operators brought about by SV crashes without the confounding influence of other road users, this study focuses on SV crashes without colliding with pedestrians. The results show that for both riders and drivers, variables such as age (65 and above), drink driving, error type of failing to have proper control, driving manoeuvres of left and right turns as well as driving after midnight, are associated with more severe injuries whereas factors such as wet, oily or sandy surfaces are related to less severe injuries. The results shed light on both the similar and different causes of high injury severity for riders and drivers involved in out-of-control SV crashes. Based on the findings, targeted countermeasures may be introduced from multiple perspectives such as driver education and policy development to improve non-traffic interactive safety.

2.6. Exploring the effects of critical driving situations on driver perception time (PT) using SHRP2 naturalistic driving study data

Driver perception time (PT) is critical when a driver faces an imminent crash risk and needs to determine what evasive manoeuvres to execute. This study aims to evaluate how PT varies across different critical driving situations. Naturalistic driving study data provides an unprecedented opportunity to look into PT prior to the occurrence of safety-related events. This paper shows that critical driving situations, the driving environment, and driver behaviour are all influential factors in explaining the variation of PT among different drivers. The longest PTs occur during critical driving situations where the vehicle ahead is in a stop-and-go phase, which can be as long as 2.84 s while controlling for the effects of driving environment and driver behaviour factors, compared to other types of driving situations such as a vehicle ahead decelerating or lane changing.

2.7. Fast dash: programme overview and key findings from initial technology evaluation

A programme has been developed by the U.S. Federal Motor Carrier Safety Administration (FMCSA) to conduct independent, short-turn evaluations of promising safety technologies. Vendors with promising safety technologies, focused on the commercial vehicle domain, were approached to participate and the technology was tested in both static and dynamic conditions. This paper presents evaluations of three technologies completed in the first five years of the programme. The technologies included a blind spot detection and warning system, an onboard monitoring system, and a novel mirror technology. High-level results of each of these three evaluations are highlighted in the paper. Data analyses focused on understanding the efficacy of the technology in terms of safety improvements, challenges for implementation, e.g., unintended consequences, and user acceptance.

2.8. Private and public willingness to pay for safety: a validity test

Stated preference (SP) methods are often used to elicit an affected population's preferences for, increased safety or better environment quality, for instance. SP methods are based on hypothetical market scenarios which have advantages, since decision alternatives are known to the analysis, although the results also necessitate thorough validity tests, since decisions are hypothetical. This study suggests a validity test based on theoretical predictions and empirical findings for private and public safety measures. According to the test, willingness to pay (WTP) for a public safety measure should exceed or be equal to the private one. Based on a rich data set eliciting both private and public WTP the results show that private WTP exceeds public WTP. Hence, the findings in this study highlight the importance of performing validity tests of preference estimates for safety, suggesting that WTP for a private safety measure should also be elicited in studies focused on WTP for public safety measures.

3. Conclusion

The aim of this editorial is to chart out progress in road safety research presented at the RS5C Conference in Jeju, South Korea 16–18 May 2018. The papers selected for this editorial show great diversity and broad scope, contributing to an international dialogue that connects countries within different levels of road safety. At the RS5C Conference, experts presented and discussed hot topics and the latest research in the road transport area with a focus on traffic safety and health. By providing a mutual ground for sharing knowledge and a forum to discuss mutual issues and appropriate solutions, researchers, officials and other stakeholders can learn from results, experiences and success stories. We hope that future conferences, just as the RS5C Conference in Jeju, South Korea, keep stimulating new directions and solutions, with the overall aim to save lives, thanks to both theoretical insight and practical applications.

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