Australian Government
Australian Research Council

EI 2018 ENGAGEMENT AND IMPACT

Engagement and Impact 2018

Queensland University of Technology

QUT17 (HLS) - Impact

Overview

Title

(Title of the impact study)

Role of the Centre for Accident Research and Road Safety - Queensland (CARRS-Q) in Improving Road Safety Outcomes

Unit of Assessment

17 - Psychology and Cognitive Sciences

Additional FoR codes

(Identify up to two additional two-digit FoRs that relate to the overall content of the impact study.)

16 - Studies in Human Society

Socio-Economic Objective (SEO) Codes

(Choose from the list of two-digit SEO codes that are relevant to the impact study.)

88 - Transport
92 - Health

Australian and New Zealand Standard Industrial Classification (ANZSIC) Codes

(Choose from the list of two-digit ANZSIC codes that are relevant to the impact study.)

46 - Road Transport
47 - Rail Transport
77 - Public Order, Safety and Regulatory Services
91 - Sports and Recreation Activities
82 - Adult, Community and Other Education

Keywords

(List up to 10 keywords related to the impact described in Part A.)

Road Safety

Injury Prevention

Motorcycle Safety

Cyclist Safety

Driver Licensing

Railway Level Crossings

Driver Behaviour

Policing

Traffic Law Enforcement

Sensitivities

Commercially sensitive

No

Culturally sensitive

No

Sensitivities description

(Please describe any sensitivities in relation to the impact study that need to be considered, including any particular instructions for ARC staff or assessors, or for the impact study to be made publicly available after EI 2018.)

Aboriginal and Torres Strait Islander research flag

(Is this impact study associated with Aboriginal and Torres Strait Islander content?
NOTE - institutions may identify impact studies where the impact, associated research and/or approach to impact relates to Aboriginal and Torres Strait Islander peoples, nations, communities, language, place, culture and knowledges and/or is undertaken with Aboriginal and Torres Strait Islander peoples, nations, and/or communities.)

No

Science and Research Priorities

(Does this impact study fall within one or more of the Science and Research Priorities?)

Yes

Science and Research Priority	**Practical Research Challenge**
Transport	Improved logistics, modelling and regulation: urban design, autonomous vehicles, electrified transport, sensor technologies, real time data and spatial analysis.

Impact

Summary of the impact

(Briefly describe the specific impact in simple, clear English. This will enable the general community to understand the impact of the research.)

Road trauma costs Australia ~$30 billion each year in economic terms and negatively affects the health and wellbeing of thousands of families and individuals. CARRS-Q has become a leading institution in road safety research and the premier trainer of road safety researchers and practitioners. Through its high-quality research, training and advocacy CARRS-Q has had a major impact on road safety policies and practices at state and national levels, through both government and industry linkages. CARRS-Q has made a major contribution to many of the policy changes that have underpinned the reduction in road fatalities in Queensland, including changes to motorcycle and car driver licensing, cycling safety, policing and rail level crossing safety between 2011 and 2016.

Beneficiaries

(List up to 10 beneficiaries related to the impact study)

Queensland Department of Transport and Main Roads (TMR) (key government transport and roads authority in Queensland)

Queensland Police Service (QPS)

VicRoads (key government transport and roads authority in Victoria)

Australasian Centre for Rail Innovation (ACRI); Public Transport Victoria (PTV), Australian Rail Track Corporation (ARTC), V/Line,Standards Australia

CRC for Rail Innovation; Australasian Railways Association, Railway Industry Safety & Standards Board (RISSB), Country Rail Infrastructure Authority

Bicycle Riders

Motorcyclists

Drivers

Pedestrians

Countries in which the impact occurred

(Search the list of countries and add as many as relate to the location of the impact)

Australia

Details of the impact

(Provide a narrative that clearly outlines the research impact. The narrative should explain the relationship between the associated research and the impact. It should also identify the contribution the research has made beyond academia, including:
- who or what has benefitted from the results of the research (this should identify relevant research end-users, or beneficiaries from industry, the community, government, wider public etc.)
- the nature or type of impact and how the research made a social, economic, cultural, and/or environmental impact
- the extent of the impact (with specific references to appropriate evidence, such as cost-benefit-analysis, quantity of those affected, reported benefits etc.)
- the dates and time period in which the impact occurred.

NOTE - the narrative must describe only impact that has occurred within the reference period, and must not make aspirational claims.)

Since 1996, QUT's CARRS-Q has undertaken high quality research, training and advocacy focussing on high risk groups and key behavioural issues to reduce the negative impacts of road trauma in Queensland and Australia. Many of the national and state changes that have occurred in road safety policies and practices during the period were informed and advocated by CARRS-Q road safety experts based on their underlying and pivotal research. A selection of the Centre's impacts in this field follows:

CHANGES TO MOTORCYCLE RIDER TRAINING AND LICENSING
CARRS-Q has had an ongoing program of research into motorcycle rider training and licensing which has identified issues, evaluated current approaches and contributed to significant changes in these systems. Our most recent three-year research study into motorcycle safety, completed in 2012, indicated a critical need for a renewed focus on increased training and assessment. These findings were considered by a Queensland parliamentary inquiry into the motorcycle licensing process, and resulted in the government recommending a package of reforms, which were introduced on 1 January 2014. Reforms based around CARRS-Q research and publications included:
-- an enhanced motorcycle learner knowledge test – based on our examination of potential approaches to pre-learner training (ePrints:55991) and, since 2016, the requirement to hold a learners licence for at least 3 months in Queensland;
-- formalisation of Q-Ride as the primary motorcycle training and assessment method with our research into training and licensing interventions for risk taking and hazard perception for motorcyclists (ePrints:56009) informing the stronger emphasis on behaviour and higher order skills in Q-Ride courses (from 2016); and
-- revisions to the Queensland Motorcycle Rider's Guide to include a new section on safe riding and information for returning riders.

IMPACTS ON CYCLING SAFETY AND REGULATIONS
Four important outcomes from CARRS-Q research have been highly influential in determining government decisions relating to regulations around cycling safety:
-- CARRS-Q research on the effectiveness of bicycle helmets using Queensland police crash data, international literature and estimations of the likely increases in head injuries under several proposed changes to mandatory helmet laws, has been widely used by Queensland and other governments as a source of evidence for maintaining current legislative approaches.
-- The requirement for cyclists to dismount when crossing at signalised walk phases or pedestrian crossings was removed in 2014 following a CARRS-Q review of laws related to walking and cycling for TMR.
-- The Queensland Government decision to continue with minimum passing distance legislation was based on the Centre's evaluation of the trial (ePrints:94655). It was the first evaluation conducted in Australia and has been cited by policymakers and advocates in other states as providing evidence for introducing this rule elsewhere.
-- The development of TMR's Technical Note 136: "Providing for Cyclists on Roundabouts" was informed by research on how to make roundabouts safer for cyclists and involved CARRS-Q as part of the project team.

IMPACTS ON DRIVER LICENSING AND SAFETY
-- Revisions to the Q-SAFE practical driving test introduced on 29 June 2015 were informed by the Expert Panel which included members from CARRS-Q. Recommendations regarding the need for the test to focus more on safety-critical manoeuvres such as merging onto freeways and less on parking skills were incorporated into the revised test. The introduction of the changes was given extra impetus by the Safer Roads Safer Queensland

Forum in which CARRS-Q also participated.
-- Changes to older driver licensing in Queensland. CARRS-Q staff were members of the Queensland Older Drivers Advisory Committee which provided advice to the Minister for Transport on potential older driver safety initiatives. The deliberations of this committee were informed primarily by a comprehensive study of older driver performance and crash involvement prepared by CARRS-Q in 2011.
-- CARRS-Q research into "hooning" contributed significantly to the Police Powers and Responsibilities (Motor Vehicle Impoundment) and Other Legislation Amendment Bill 2012 and development of Victoria's Safe Driving Program. The Brief prepared for the Legal Affairs, Police, Corrective Services and Emergency Services Committee relied heavily on CARRS-Q research, referencing the PhD thesis of N Leal (2010) and earlier studies published by CARRS-Q on numerous occasions. CARRS-Q research also informed the inclusion of drink driving as one of the "irresponsible and dangerous behaviours in public places" which form the Type 2 offences in the Bill. Victoria established a Safe Driving Program under the Road Safety Amendment Act 2012 and engaged CARRS-Q researchers in the development of the program using a behaviour change approach.
-- Use of Automatic Number Plate Recognition Technology (ANPR). CARRS-Q undertook an evaluation of ANPR on behalf of the Queensland Police Service and provided recommendations on how the technology should be used throughout Queensland. The report was tabled before Queensland Cabinet (Cabinet Number 5311T4169) and passed for implementation in 2011.
-- Railway Level Crossing improvements. The Australian Standard AS1742 Manual of Uniform Traffic Control Devices Part 7 on railway level crossings has recently been revised based on the results of a major study of driver visual perception and decision making conducted by CARRS-Q. The research focused on ensuring that drivers can actually see and detect the movement of a train at the longer sighting distances that were proposed to ensure safe crossing by trucks and buses. CARRS-Q also developed a hazard and risk estimation process for the introduction of new level crossing technologies, which was endorsed by the Australian safety regulator.

Associated research

(Briefly describe the research that led to the impact presented for the UoA. The research must meet the definition of research in Section 1.9 of the EI 2018 Submission Guidelines. The description should include details of:
- what was researched
- when the research occurred
- who conducted the research and what is the association with the institution)

The specific research projects underpinning the impacts described above are as follows:

MOTORCYCLE RIDER TRAINING & LICENSING
ARC LP0560351 with TMR and Morgan & Wacker (2005-8) Development & Evaluation of a Motorcycle Training Intervention. QUT Team of 5 led by Prof Watson
Motorcycle Rider Safety Project for TMR (2009–12) QUT Team of 6 led by Prof Haworth.

CYCLING SAFETY & REGULATIONS
Bicycle Helmet Research for TMR (2010) QUT Team (4) led by Prof Haworth
Investigating legislative impediments to walking & cycling for TMR (2011) QUT Team (4) led by Prof Haworth
Evaluation of Queensland minimum passing distance road rule for TMR (2014–2016) QUT Team (5) led by Prof Haworth

DRIVER SAFETY
ARC LP0561602 with TMR, Qld Police Service & Treasury (2005-8) Speeding recidivism, crash risk and the impact of penalties and sanctions on speeding behaviour. QUT Team (3) led by Prof Watson
ARC LP0990434 with TAC (2009-12) Design and evaluation of anti-speeding messages to target high risk road users' attitudes and behaviours. QUT Team (3) led by Prof Watson
Development of Hoon Safe Driving Program for VicRoads (2012) QUT Team: Freeman & Watson
Evaluation of ANPR Trials for Traffic Policing for QPS (2010) QUT Team (5) led by Dr Armstrong
Testing the Limitation of Sighting Distances in the AS1742 Part 7 Standard for ACRI (2015) QUT Team (4) led by Dr Larue
Preliminary Hazard and Risk Analysis for New Level Crossing Technology for CRC for Rail Innovation (2015) QUT Team: Wullems & Larue

FoR of associated research

(Up to three two-digit FoRs that best describe the associated research)

17 - Psychology and Cognitive Sciences
15 - Commerce, Management, Tourism and Services
11 - Medical and Health Sciences

References (up to 10 references, 350 characters per reference)

(This section should include a list of up to 10 of the most relevant research outputs associated with the impact)

[1] Tunnicliff, D., Watson, B., White, K., Hyde, M., Schonfeld, C., & Wishart, D. (2012). Understanding the factors influencing safe and unsafe motorcycle rider intentions. Accident Analysis & Prevention, 49, p.133-141. DOI:10.1016/j.aap.2011.03.012 [17 citations, Q1, IF = 2.685]

[2] Tunnicliff, D. J., Watson, B. C., White, K. M., Lewis, I. M. & Wishart, D. E. (2011). The social context of motorcycle riding and the key determinants influencing rider behaviour: a qualitative investigation. Traffic Injury Prevention, 12(4), p.363-376. DOI:10.1080/15389588.2011.577653 [11 citations, Q1, IF = 1.290]

[3] Haworth, N., Schramm, A., King, M. & Steinhardt, D. (2010). Bicycle helmet research. CARRS-Q Monograph 5. Queensland: CARRS-Q. http://www.tmr.qld.gov.au/~/media/Travelandtransport/Cycling/Research/CARRSQBikeHelmetReport.pdf

[4] Debnath, A., Haworth, N., Schramm, A., Williamson, A. (2016). Observational study of compliance with Queensland bicycle helmet laws. Accident Analysis & Prevention, 97, p.146-152. DOI:10.1016/j.aap.2016.09.010 [Q1, IF = 2.685]

[5] Watson, B., Siskind, V., Fleiter, J., Watson, A. & Soole, D. (2015). Assessing specific deterrence effects of increased speeding penalties using four measures of recidivism. Accident Analysis & Prevention, 84, p.27-37. DOI:10.1016/j.aap.2015.08.006 [5 citations, Q1, IF = 2.685]

[6] Watson, B., Watson, A., Siskind, V., Fleiter, J. & Soole, D. (2015). Profiling high-range speeding offenders: Investigating criminal history, personal characteristics, traffic offences, and crash history. Accident Analysis & Prevention, 74, p.87-96. DOI:10.1016/j.aap.2014.10.013 [3 citations, Q1, IF = 2.685]

[7] Lewis I.M., Watson B., White K. M. & Elliott, B. (2013). The beliefs which influence young males to speed and strategies to slow them down: Informing the content of anti-speeding messages. Psychology and Marketing, 30(9), p.826-841. DOI:10.1002/mar.20648 [18 citations, Q1, IF = 2.000]

[8] Wullems, C. (2011). Towards the adoption of low-cost rail level crossing warning devices in regional areas of Australia: A review of current technologies and reliability issues. Safety Science, 49(8-9), p.1059-1073. DOI:10.1016/j.ssci.2011.04.006 [13 citations, Q1, IF = 2.246]

[9] Leal, N. (2010). Illegal street racing and associated (hooning) behaviours. PhD thesis, QUT.

https://eprints.qut.edu.au/43350/

[10] Leal, N., & Watson, B. (2011). The road safety implications of illegal street racing and associated risky driving behaviours: An analysis of offences and offenders. Accident Analysis & Prevention, 43(4), p.1547-1554. DOI:10.1016/j.aap.2011.03.010 [9 citations, Q1, IF = 2.685]

Additional impact indicator information

Additional impact indicator information

(Provide information about any indicators not captured above that are relevant to the impact study, for example return on investment, jobs created, improvements in quality of life years (QALYs). Additional indicators should be quantitative in nature and include:
- name of indicator (100 characters)
- data for indicator (200 characters)
- brief description of indicator and how it is calculated (300 characters).)

Name

Road Safety Reports published 2011-2016

Indicator Data

57

Indicator Description

Reports in open access repository, https://eprints.qut.edu.au/
The reports provide research outcomes on drink driving, unlicensed drivers, motorcycle safety etc and were prepared for a variety of organisations. This is in addition to reports published on the organisations' websites.

Name

Road Safety Reports downloaded 2011-2016

Indicator Data

22,382 full text downloads

Indicator Description

There were 22,382 CARRS-Q Road Safety Reports downloaded from QUT's ePrint open access repository between 2011-2016. Over 50% of the downloads were from overseas, primarily USA, UK, France and India.

Name

Mentions in Queensland Hansard

Indicator Data

7 mentions in the official record of the debates & proceedings of the Queensland Parliament's Legislative Assembly

Indicator Description

Queensland Hansard directly mentioned CARRS-Q in relation to its research on young driver safety, drink driving, "hooning" and fatigue, and to hosting the Queensland Road Safety Awards and contribution to the Safer Roads Safer Queensland Forum.