

Profile of the speeding driver: Examination of driver attitudes and behaviour around posted speed limits on Australian roads.

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Abstract

Background: Vehicle speed is a key contributor to the incidence and severity of crashes. This research aimed to document the profile of drivers who self-report that they exceed the speed limit.

Method: Data were collected as part of a representative road safety survey of 5,179 drivers (45% male) in Australia. Drivers provided information regarding their usual speed choices across different speed zones as well as their recent history of traffic fines and crash involvement, attitudes towards local speed limits and Intelligent Speed Assist (ISA).

Results: Overall, 23% of the drivers reported exceeding the posted speed limit in a 40 km/h zone, while almost half of those surveyed (47%) exceeded posted speed limits of 100 km/h. Drivers aged 22-39 years reported the highest level of non-compliance with approximately up to 40% driving at least 10% faster than the posted limit. There were relatively few differences in speed compliance between male and female drivers, although older males reported greater non-compliance than similarly aged females. Attitudes toward ISA technology differed by age and gender.

Discussion: The findings highlight the age and gender based differences in attitudes toward regulated driving speed and adopted speed behaviours. Measures to improve speed compliance are discussed.

Implications: The findings can be used to improve the targeting of the road safety messages concerning speeding behaviour.

Background

Vehicle speed is a key contributor to the incidence (Watson, Watson, Siskind, Fleiter & Soole, 2015) and severity (Schuster, Nieuwesteeg, Northrop, Lucas & Smith, 2015) of motor vehicle crashes. Vehicle speed not only determines the stopping distance required to avoid collision, but also the force of the impact should a collision occur (Corben, van Nes, Candappa, Logan & Archer, 2010). Even a small reduction in speed can have a large effect on crash outcome, particularly in terms of injury to the occupants. This research aimed to document the profile of drivers who self-report they exceed the speed limit. Attitudes toward speeding behaviour and technology to improve speed behaviour were also sought. This information will inform road safety campaigns aimed at reducing speeding behaviour.

Methods

Participants and procedure

Data were collected in 2014 as part of large Community Engagement Survey initiated by the Transport Accident Commission (TAC), Victoria. A stratified sampling procedure was used to ensure the age and gender of respondents formed a representative sample of drivers from each

Australian jurisdiction (Victoria, New South Wales, Queensland, Western Australia, Tasmania, The ACT and the NT).

The survey was conducted by Ipsos Social Research Institute and administered online to Ipsos panel members. The survey contained a number of questions regarding attitudes toward road safety and technology to enhance road safety.

The final sample consisted of 5,179 participants licensed to drive a motor vehicle. Given that predetermined recruitment targets were established, it was expected that the age and gender distribution of the sample (displayed in Figure 1) would be representative of the broader Australian population. Comparison with recent census data confirmed this had been achieved (ABS, 2014).

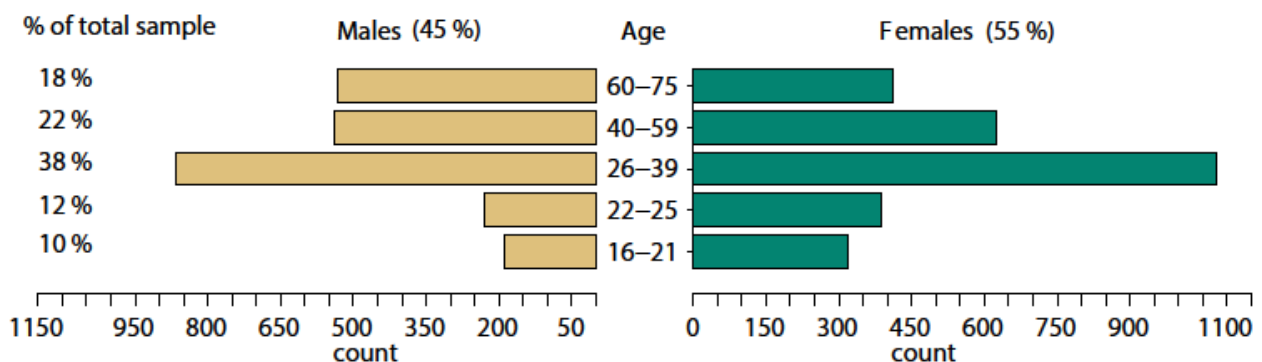


Figure 1: Unweighted data for age and gender distribution across the sample of licensed drivers (N = 5,179)

Community Engagement Survey 2014

The Community Engagement Survey sought information about the respondent (age, gender, occupation), their driving and licence history (frequency and type of travel, type of licences held) and their attitudes toward road safety and safety-related technology. Of relevance here, participants responded to a number of questions about their usual speed behaviours and opinions about speeding behaviour and Intelligent Speed Assist (ISA) (see Results for the questions asked). For the former, participants were asked what speed they normally drive in zones with posted speed limits of: 40 km/h; 50 km/h; 60 km/h; and 100 km/h. Responses were given according to a five point Likert scale (1 = below or at the speed limit; 2 = Up to 5 kms over the limit; 3 = between 6-10 kms over the limit; 4 = between 11 to 15 kms over the limit; and 5 = more than 16 kms over the limit).

Results and Discussion

Self-reported non-compliance with posted speed limits

Survey data were weighted by age and gender to adjust for discrepancies between the targeted and actual number of responses across the Australian jurisdictions.

As evident in Figure 2, a greater proportion of drivers reported exceeding the speed limit in higher limit speed zones, with 47% of the respondents exceeding posted speed limits of 100 km/h by at least 5 km/h or more. It can be observed that the extent to which drivers exceeded the speed limit also increased as the speed zone increased. In the slower zones, less than 1% of drivers reported

driving 11 km over the posted limit in the slower speed zones of 40, 50 and 60 km, while 3% adopted these speeds in the 100 km zone. This may suggest drivers select speeds relative to the limit. For example, across all speed zones, very few drivers (less than 10%) reported exceeding the limits by more than 10%.

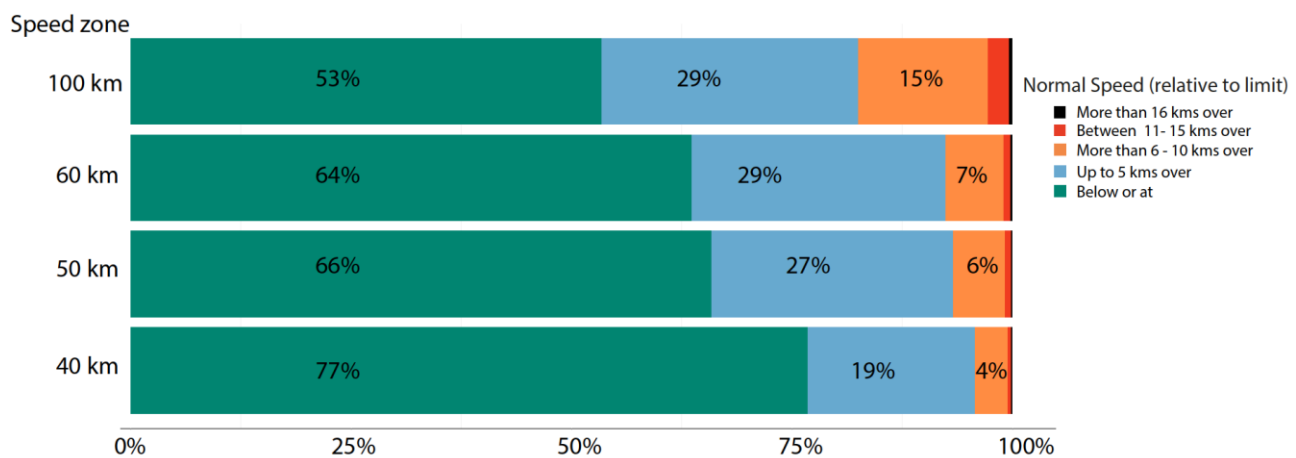


Figure 2. Self-reported “normal” driving speed relative to the speed limit (N = 5,082)

The age and gender distribution of drivers who reported non-compliance in at least one of the four speed zones was examined. Although non-compliant drivers (56%; n = 2,859) were more likely to be male (52%), 3-way chi-squares examining the association between age group, gender and compliance showed only one significant, and rather weak, effect of gender on compliance across the five age groups. Older males (aged 65 – 75 years) reported greater non-compliance than similarly aged females $\chi^2(1) = 13.22$, $p < .001$, Cramer’s $V = .10$.

Non-compliant drivers were also more likely to be aged between 22 – 39 years (41%) with drivers in this age range being over-represented in the non-compliance group compared to the compliance group for both male $\chi^2(4) = 43.04$, $p < .001$, Cramer’s $V = .13$ and female drivers $\chi^2(4) = 42.81$, $p < .001$, Cramer’s $V = .12$. When the stated preference speed of drivers in this age range was examined across the four speed zones, approximately 40% drove 10% faster than the speed limit in 50 and 60 km zones and almost one quarter drove 10% faster in the 100 km zone. Therefore, not only do more drivers in this age range report exceeding the posted speed limits, the degree to which they exceed the limit is considerably higher than other drivers.

Table 1 displays predictors of self-reported non-compliance with the posted speed limits derived from logistic regression analysis. Respondents aged 22-25 and those aged 26-39 (64% and 65% non-compliers, respectively) had significantly higher odds of being non-compliers than 16-21 years old respondents (22-25 – OR 1.86, 95%CI: 1.42-2.45; 26-39: 1.77, 95%CI: 1.41-2.23); this effect was similar when compared to 40+ year old respondents. Males reported greater non-compliance than females and there were differences in self-reported non-compliance across jurisdictions. For instance, a lower proportion of respondents in Victoria reported non-compliance than in NSW (i.e., 49% vs. 60%: OR: 0.64, 95%CI: 0.55-0.74), whilst the higher proportion of non-compliance was from respondents resident in the ACT.

Table 1: Predictors of compliance / non-compliance with posted speed limits

| | Compliance | Non-compliance | OR (95% C.I) |
|------------------------------|------------|----------------|-----------------------|
| Age | | | |
| 16 – 21 | 50% | 50% | Reference (1) |
| 22 – 25 | 35% | 65% | 1.86*** (1.42 – 2.45) |
| 26 – 39 | 37% | 64% | 1.77*** (1.41 – 2.23) |
| 40 – 59 | 48% | 52% | 1.12 (.89 – 1.39) |
| 60 – 75 | 49% | 51% | 1.02 (.81 – 1.28) |
| Sex | | | |
| Male | 42% | 58% | Reference (1) |
| Female | 47% | 53% | .81*** (.72 - .91) |
| Residential | | | |
| Rural | 44% | 56% | Reference (1) |
| Urban | 44% | 56% | .95 (.84 – 1.07) |
| State | | | |
| New South Wales | 40% | 60% | Reference (1) |
| Victoria | 51% | 49% | .64*** (.55 – .74) |
| Queensland | 45% | 55% | .79** (.67 – .92) |
| Western Australia | 39% | 61% | 1.03 (.84 – 1.26) |
| South Australia | 48% | 52% | .72** (.57 – .90) |
| Tasmania | 50% | 50% | .68* (.46 - .99) |
| Australian Capital Territory | 26% | 74% | 1.83** (1.13 – 2.98) |
| Northern Territory | 37% | 63% | 1.10 (.61 – 1.98) |

***OR (Odds Ratio) significant at $p < .001$; ** $p < .01$; * $p < .05$

Attitudes toward speed behaviour and local speed limits

Figure 3 shows the three questions regarding attitudes toward speed behaviour, with responses separated between drivers who self-report compliance and non-compliance with posted speed limits. As is to be expected, the majority of drivers who agreed with the statement “*I drive over the speed limit if I am sure I will get away with it*” were non-compliant drivers (83%). This association was both significant and of medium strength (Cramer’s $V = .34$) suggesting this to be an important consideration in a driver’s speed choices. Likewise, over 70% of drivers who disagreed with the statements “*the chance of being in a crash is higher when driving 10 km more than the posted limit*” were also non-compliant drivers, although the effect sizes of these relationships were small (Cramer’s $V = .14$ and $.15$ respectively). Therefore, it appears that for drivers who exceed the speed limit, being able to “get away with it” is a stronger motivator than perceptions of increased crash risk.

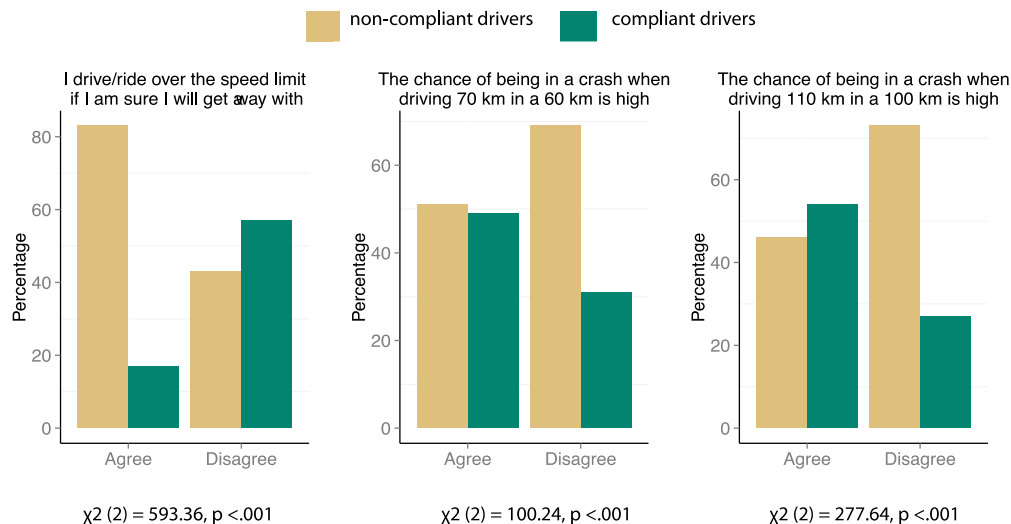


Figure 3. Attitudes toward speed behaviour across compliant and non-compliant drivers (N = 5,082)

Attitudes toward Intelligent Speed Assist (ISA) technology

Only one-third (n = 1,682; 32%) of the respondents had heard of ISA technology. The majority had not (n = 2,318; 45%) or were unsure if they had (n = 1,179; 23%). Respondents were given a description of ISA, including an image of the device. When asked whether ISA would be useful for the respondent as a driver, 4,735 responded and of those only 10% (n = 470) agreed that ISA would be useful. The majority (60%) disagreed, while 30% neither agreed nor disagreed. Of those that agreed, 76% were non-compliant drivers $\chi^2(2) = 87.42, p < .001$ Cramer's V = .13, suggesting ISA technology would be welcomed by some non-compliant drivers.

Gender was associated with opinions on the usefulness of ISA technology. Significantly fewer female drivers (40%) agreed that ISA would be personally useful than male drivers (60%), while significantly more female (54%) than male drivers (46%) had no opinion $\chi^2(2) = 30.65, p < .001, \omega = .08$. When these were examined across the five age groups, the relationship was only found for drivers aged 26 to 39 years $\chi^2(2) = 17.89, p < .001$ Cramer's V = .11 and those aged 40 to 59 $\chi^2(2) = 7.48, p < .001$ Cramer's V = .07 where significantly more males (65% and 55% respectively) than females (35% and 45% respectively) agreed with the usefulness of ISA.

Conclusion and Implications

In a representative sample of drivers in Australia, age and gender based differences were found for attitudes toward regulated driving speed, technology to enhance safety and adopted speed behaviours. Non-compliant drivers were mostly younger drivers aged 22 to 39 years. Non-compliance was associated with the belief that drivers would not get caught when speeding. There were some differences across jurisdictions in self-reported compliance, which may be a product of the level of speed enforcement undertaken, general culture toward road safety, and / or vehicle use and geography, although we are unable to comment with certainty on the underlying reasons for this, and this could be the subject of future research. These findings can be used to improve the targeting of the road safety messages concerning speeding behaviour. In particular, with more

tailored strategies to address potential misconceptions regarding speed enforcement, speed danger, and the benefits of ISA technology.

Acknowledgements

The data collection was funded by the TAC, Transport for NSW and Monash University Accident Research Centre.

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