

# Survey Evaluation of Victoria's Graduated Licensing System: Young Driver Behaviour and Experiences of the Graduated Licensing System

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## Abstract

As a part of the evaluation of the enhanced Graduated Licensing System (GLS) introduced in Victoria across 2007 and 2008, two survey projects (cohort and cross-sectional) were undertaken. Participants licensed before and after the enhanced GLS were recruited from VicRoads' licensing database. Across four years, over 9,000 young drivers were surveyed about getting their licence, risky driving and other impacts of the enhanced GLS. Consistent with the GLS measures, results showed increased learner driver practice hours, a more challenging on-road driving test, fewer taking trips with more than one peer passenger and less drink-driving, post GLS compared with pre-GLS. Fewer young drivers experienced barriers to getting practice as a learner under the 120 hours driving practice requirement than before. There was no evidence of exposure differences that could account for the results. The survey data provides a context by which the outcomes of the GLS crash and offence evaluation can be understood.

## Background

In the early 2000s, it was observed that young Victorian drivers were over-represented in road crashes when compared to older more experienced drivers (VicRoads, 2012); this over-representation is consistent with the young driver crash picture internationally (e.g. Elvik, 2010; Williams 2003). A GLS has been found to be effective in managing young driver risk (McCartt, Teoh, Fields, Braitman & Hellenga, 2010; Senserrick & Williams, 2015). To address the Victorian young driver problem, the existing GLS was enhanced and new measures introduced progressively between 1 January 2007 and 1 July 2008.

Key components of the enhanced GLS introduced in Victoria included:

- a minimum 12-month learner permit period and a minimum 120 hours supervised driving practice – if aged under 21 years at time of licensing
- no more than one peer aged passenger<sup>1</sup> for P1 (first year of the probationary licence) drivers unless accompanied by a fully licensed driver
- a more challenging on-road driving test
- a two-stage probationary licence: P1 (minimum one year – only applicable to drivers aged under 21 years at time of licensing) and P2 (minimum three years)
- probationary drivers banned from driving certain high-powered vehicles
- a ban on mobile phone use for P1 probationary drivers (extended to P2 drivers in 2013<sup>2</sup>)
- a requirement to maintain a clean driving record to graduate through the licensing system
- tougher drink-driving sanctions.

VicRoads' planned evaluation of the enhanced GLS included analyses of crash and offence data to determine its ultimate effectiveness in reducing trauma among Victorian young drivers. The survey projects reported here were planned to complement the crash evaluation (Catchpole, Makwashaa, Newstead, Imberger & Healy, 2017) with the aim of understanding the effects of the new regulations, exploring drivers' experiences of the enhanced GLS and to compare the behaviours of

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<sup>1</sup> A peer passenger is a passenger aged between 16 and 21 years, other than family members.

<sup>2</sup> The extension of the mobile phone ban to P2 drivers was not part of the GLS evaluation.

those licensed under the previous system and the enhanced GLS. Some of the survey studies findings which pertain to the effectiveness of key components of the enhanced GLS are outlined in Imberger et al. (2017) so are not repeated here. The results discussed here come from three reports prepared for VicRoads (McIntyre, 2015a, 2015b & 2015c).

The purpose of this paper is to present additional outcomes of interest from the wealth of survey data collected as a part of the GLS evaluation, with a focus on the pre-post enhanced GLS differences. The topics covered in this paper include:

- getting practice with respect to the new minimum 120 hour requirement
- the new on-road Drive Test
- impacts of the peer passenger restriction on travel
- risky driving behaviour on a range of measures
- driving confidence
- driving exposure
- vehicle purchase.

## Method

Two survey projects were undertaken, the cohort study and the cross-sectional study, with data collected at eighth time points across four years. Participants were recruited from the VicRoads' licensing database. Letters of invitation, reminder follow-up letters and telephone calls, and incentives (gift cards and prize draws), were used to encourage participation. Surveys were completed online or via computer-assisted telephone interviewing. At each wave of data collection there were set specifications for an extract of licence holders (from the licensing database) from which a random sample of potential participants was taken and contacted. The random samples of potential participants were representative of the licence holders at the time of the sample extract.

### *Cohort study*

The cohort study followed groups licensed before and after the introduction of the enhanced GLS, surveying each four times; the first survey conducted within the first year of licensure (Table 1).

**Table 1. Dates of licensing and data collection for the pre and post GLS cohorts**

	<b>Licence Dates</b>	<b>Survey 1</b>	<b>Survey 2</b>	<b>Survey 3</b>	<b>Survey 4</b>
<b>Pre GLS</b>	Nov 2007-May 2008	July 2008	February 2009	August 2009	July 2010
<b>Post GLS</b>	Jan-June 2010	July 2010	February 2011	August 2011	July 2012

Of the 2500 in each cohort invited to participate, 48% of the pre cohort and 44% of the post cohort participated in survey one; 44% of the pre cohort and 45% of the post cohort survey one participants were retained to the final survey and were matched via a unique participant number. Final samples of 528 pre cohort participants and 501 from the post cohort participants completed all surveys in the series. At the first survey 54% of the pre cohort and 55% of the post cohort participants were female. Retention to the final survey was higher for female than male participants, with 47.2% of female participants and 41.3% of male participants retained to the final survey.

The mean age of participants at first participation in the study was 20.6 years. Comparison of the sample retained at the final survey to the sample at the first showed no significant difference in age at first participation ( $F(1,2301)=3.31, p=.069$ ) and a small but significant difference in socio-economic advantage and disadvantage<sup>3</sup> ( $F(1,2297)=5.37, p=.021$ ), such that the final survey

<sup>3</sup> Socio-Economic Advantage and Disadvantage was measured using the ABS Index of Socio-Economic Advantage and Disadvantage and was applied to postcode of residence.

participants were from a slightly more advantaged background (pre GLS cohort Cohen's  $d=.10$ ; post GLS cohort  $d=.09$ ).

### ***Cross-sectional study***

The cross-sectional study took four separate samples of drivers licensed before and after the enhanced GLS; the timing of these was aligned with the cohort survey dates. In total, there were 7,010 participants. Participants at different stages in their licensure were sampled at each survey time point and according to the timing of the survey were licensed either pre or post GLS. Table 2 shows the scheduling of the data collection for the cross-sectional study outlining the composition of the groups surveyed (year of driving).

***Table 2. Dates of data collection and composition of samples in the cross-sectional study indicating year of driving***

<b>Wave:</b>	<b>Wave 1</b>	<b>Wave 2</b>	<b>Wave 3</b>	<b>Wave 4</b>
<b>Survey date:</b>	July 2008	August 2009	July 2010	May 2012
<b>Pre GLS driver groups</b>	1st year 2nd year 3rd year	2nd year 3rd year 4th year 5th year plus	3rd year 4th year 5th year plus	Some 4th year 5th year plus
<b>Post GLS driver groups</b>	none	1st year	1st year 2nd year	1st year 2nd year 3rd year Some 4th year

Like the cohort study, the participants in the cross-sectional study were more likely to be female; female participants accounted for 58%, 56%, 54% and 58% of the survey participants in waves one to four respectively. The mean age of the participants at the time of participation in the cross-sectional study was 22.8 years, which is higher than the cohort study, because later waves specifically sampled fully licensed drivers.

### ***The questionnaires***

Although there were questions that remained consistent across all questionnaires, questionnaire content varied over time. For example, the first cohort surveys asked more questions about the process of getting the licence and learning to drive than did later cohort surveys. Some of the topics covered in the questionnaires included:

- getting driving practice as a learner
- performance on and perceptions of the on-road drive tests
- a range of risky driving behaviours
- impacts of the passenger restriction
- compliance with licence conditions
- self-assessed driving skill compared with others; an adapted version of the Driver Skills Inventory (Lajunen & Summala, 1995).
- attitudes about the GLS measures
- vehicle purchase and ownership
- driving exposure.

With hundreds of questions asked across the surveys it is not possible to outline question wording and the response format for each. To compensate, more information is provided in each section outlining the results.

## Results

Data were analysed using Analysis of Variance (ANOVA), Generalised Linear Modeling (GLM) and Chi-squared tests. Analyses were undertaken in SPSS and Statistica. To address longitudinal changes within the cohorts, a repeated measures component was used. A range of independent variables including gender were included in analysis, but due to the vast amount of data collected in the four year research project; selected results pertaining only to pre and post enhanced GLS outcomes are presented in this paper. There are some comparisons made between smaller and larger groups in the sample, which is not ideal. However, due to exceptions in the application of the minimum 120 hours regulation, as discussed below, this was unavoidable.

### *Getting the licence*

#### *Hours supervised driving practice as a learner*

Participants were asked to report how many hours of supervised driving practice they had completed as a learner. Analyses included those who were aged under 21 years at licensing and who were in their first year of licensure (referred to here-after as ‘young first years’). In both survey projects, there was a sub-group of post GLS drivers who, because they had obtained their permits before July 2007, were not required to achieve the minimum 120 hours practice.

One-way ANOVAs were performed on both data sets (young first years only) due to small numbers sizes in some cells of the design. The results from both studies showed a significant difference between the sample groups (cohort,  $F(2,506) = 45.13, p < .001$ ; cross-sectional,  $F(2,1229) = 43.37, p < .001$ ). Mean hours were highest among the post GLS group required to obtain the minimum 120 hours (Tables 3 and 4); 28% higher than the pre GLS group in the cohort study and 30% higher in the cross-sectional study.

**Table 3. Cohort survey 1 - mean hours driving practice (95% confidence intervals) according to the 120 hour requirement**

Sub-group	Mean hours	SD	95% CI	n
Post GLS - 120	143.6	26.39	140.5, 146.8	274
Post GLS – no 120	118.6	42.15	101.9, 135.3	27
Pre GLS – no 120	111.8	46.93	105.3, 118.2	208

**Table 4. Cross-sectional study - mean hours driving practice (95% confidence intervals) according to the 120 hour requirement**

Sub-group	Mean hours	SD	95% CI	n
Post GLS - 120	150.9	47.58	147.0, 154.8	577
Post GLS – no 120	124.3	72.78	116.4, 132.1	333
Pre GLS – no 120	116.3	59.81	109.7, 122.8	322

There are some concerns about the accuracy of self-reported estimates of supervised driving practice in this research, especially among the pre GLS group who were not required to document their practice. Making an estimate requires recall over a period of years for some drivers. Indeed, the data from the cohort study shows that there was substantial variability in the estimates of driving practice across the series of four surveys. For this reason, the cohort analysis includes only those participants whose later estimates deviated by 20% or less from the response in the first survey. The estimates of total hours practice outlined in the Learner Driver Monitor research (Meyer et al., 2015) were calculated using a more robust methodology. The Learner Driver Monitor estimates are not a global recall measure taken after the end of the learner period (employed here), but are

calculated via numerous cross sectional surveys with learner permit holders at different stages across the duration of learner permit.

### *Barriers to getting practice*

Participants were asked if they experienced a range of barriers to getting practice as a learner driver. Participants (young first years only) were grouped for analysis into those who were subject to the 120 hour requirement and those who were not; Chi squared statistics were calculated. A key measure of interest was the response (yes or no) to the item ‘Nothing stopped me, I got plenty of practice’. In both studies, the percentage of ‘yes’ responses to the item were higher among those who were subject to the 120 hour requirement (Table 5).

**Table 5. Barrier to practice as a learner experienced by drivers according to 120 hour rule**

	<i>Nothing stopped me I got plenty of practice - % Yes response</i>		
	Subject to 120 rule	Not subject to 120 rule	Chi Squared statistic
<b>Cohort</b>	40.0%	31.2%	$\chi^2 (1, n=1871)=15.22, p<.001$
<b>Cross-sectional</b>	40.4%	30.1%	$\chi^2 (1, n=5746)=14.45, p<.001$

In both survey projects the main barriers to getting practice seemed to be related to motivation and other commitments either on the part of the learner or the supervisor:

- the learner too busy with other things
- parents too busy with other commitments
- not being interested in driving
- parents being anxious
- lack of parental motivation.

There was no evidence that the new minimum 120 hour requirement encouraged learner drivers to undertake more professional driving instruction to achieve the required experience. GLM analysis of the number of driving lessons undertaken by those aged under 21 at licensing with the three driver groups a key predictor of interest (pre GLS no 120, post GLS yes 120, post GLS no 120). The results from the cohort study revealed a significant main effect of the ‘120 rule’ factor ( $F(2,1844) = 3.67, p=.026$ ). The means show that those under the enhanced GLS who were not required to achieve the minimum 120 hours undertook more driving lessons than the other two groups (Table 6). The most important finding is that the 120 hour requirement under the enhanced GLS does not appear to be encouraging an increase in driving lessons, compared with before.

**Table 6. Cohort study - mean professional driving lessons undertaken according to 120 hour rule**

Sub-group	Mean lessons	SD	95% CI	n
<b>Post GLS - 120</b>	10.34	11.84	9.49,11.19	703
<b>Post GLS – no 120</b>	13.86	11.87	11.56,16.15	103
<b>Pre GLS – no 120</b>	10.86	11.83	10.12,11.59	995

### *Passing the on-road driving test*

A new more challenging Drive Test (DT) was introduced as part of the enhanced GLS. The first attempt pass rates of the new DT were compared with the first attempt pass rates of those who completed the Programmed Observation Licence Assessment (POLA) under the previous system. The new DT had a significantly lower pass rate in both studies than did the POLA:

- cohort study: 81.6% POLA versus 71.6% DT, ( $\chi^2(1, n=2313) =32.74, p<.001$ )
- cross-sectional study: 81.2% POLA versus 69.7% DT, ( $\chi^2(1, n=7001) =123.53, p<.001$ ).

To examine the impact of having to complete 120 hours practice on performance of the driving test a subsequent analysis by subgroup was performed. For those aged under 21 years at licensing Chi-squared tests compared the performance among those who were required to complete the 120 hours post GLS with the pre GLS group not required to complete 120 hours and the post GLS group not required to complete 120 hours.

The results showed that the pass rate of the POLA was significantly higher than the pass rate on the DT for participants required to obtain 120 hours. The results also showed that those who were required to complete the 120 hours had a better pass rate on the new DT than those who did not have to complete 120 hours, this difference was significant for the cross-sectional study (Table 7) but non-significant in the cohort study (Table 8).

**Table 7. Cross-sectional study – first attempt pass rate of those aged under 21 at licensing in the on-road driving test, according to 120 hour requirement**

Sub-group	% pass first time	n	Chi squared statistic
Post GLS – 120 (DT)	78.6%	1138	
Post GLS – no 120 (DT)	72.0%	968	$\chi^2 (1, n=2106)=12.15, p<.001$
Pre GLS – no 120 (POLA)	84.1%	3657	$\chi^2 (1, n=4795)=18.79, p<.001$

**Table 8. Cohort study – first attempt pass rate of those aged under 21 at licensing in the on-road driving test, according to 120 hour requirement**

Sub-group	% pass first time	n	Chi squared statistic
Post GLS – 120 (DT)	79.2%	753	
Post GLS – no 120 (DT)	68.0%	103	$\chi^2 (1, n=856)=5.94, p=.015^4$
Pre GLS – no 120 (POLA)	84.6%	1016	$\chi^2 (1, n=1769)=8.97, p=.003$

Perceptions of the driving test were measured asking about participants' level of agreement with four items. GLM analysis of the cross-sectional data was performed (among young first years) with the items as a repeated measures factor. There was a significant interaction effect between the item factor and pre-post GLS factor ( $F(3,4542)=10.42, p<.001$ ). The results are consistent with the idea that the new DT was more challenging than the POLA. Post GLS participants were significantly more likely to agree their driving test was more thorough than those who rated the POLA (pre-GLS). Post GLS participants, compared with pre GLS participants, were less likely to think the test was easy, felt more ready to do the test and more anxious about it, but differences on these three items were non-significant.

### ***First year drivers and peer passengers***

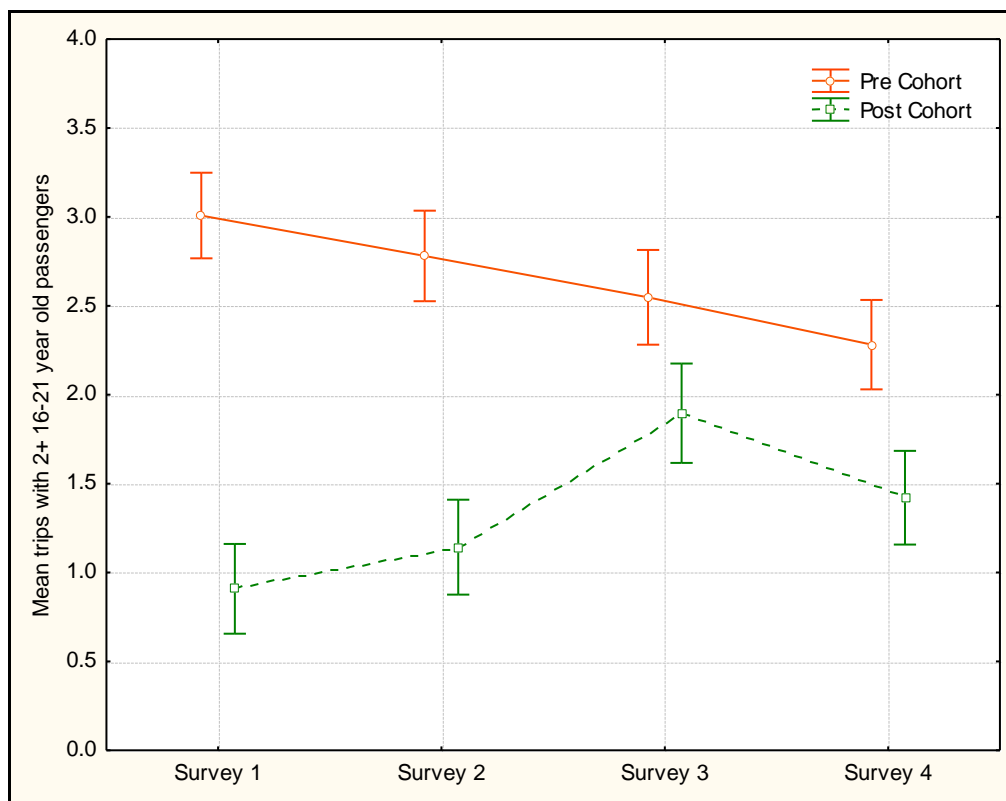
Participants were asked on how many trips in the last ten they had driven with more than one passenger aged 16-21 years. GLM was performed on both the cohort and cross section datasets; analyses were restricted to those aged under 21 at licensing.

Longitudinal trends were examined in the cohort study with the four surveys in the series treated as a repeated measures factor. The results showed significant effect of the cohort ( $F(1,2445) = 97.32, p<.001$ ) and an interaction effect between cohort and survey ( $F(1, 2445) = 16.20, p<.001$ ). Compared with the pre GLS groups, post GLS young first years drove significantly fewer trips with

<sup>4</sup> Note – due to multiple comparisons being carried out on this data, the Bonferroni correction was made and an adjusted alpha level of .007 was set to account for inflated type 1 error rate, the p value in this comparison fell short of that level.

two or more peer passengers. Figure 1 shows that among the pre GLS cohort trips with 16-21 year old passengers were highest in the first six months of driving and decreased over time.

In contrast, trips with more than one peer passenger were lowest in the first six months of driving in the post GLS cohort (this group was subject to the passenger restriction) and while remaining lower at each survey than the pre GLS group, showed an increasing trend over time. All the post GLS cohort participants were subject to the peer passenger restriction at survey one and some had transitioned to their second year of driving at survey two, meaning the peer passenger restriction would no longer have applied to them.



**Figure 1. Mean trips (of the last ten) with more than one 16-21 year old passenger (and 95% confidence intervals), among those aged under 21 at licensing who completed all four surveys**

The fourth cross-sectional survey explored among those who held a P1 licence (n=312) their awareness of the passenger restriction and among those aware of the restriction (n=290) its impact on their travel. The results showed that:

- 93% P1 drivers were aware that the passenger restriction applied to them
- two-thirds of P1 drivers reported it affected their travel plans at least once per fortnight
- the most common actions employed when the restriction affected travel was to use more cars, to rely on an unrestricted driver and to enlist the help of parents/relatives
- 63.4% of P1 drivers never violated the restriction, 19.0% violated it once a month or less and the remaining 17.6% more than once a month
- a battery of questions assessing access to public transport showed no significant difference in access among those who violated the restriction compared with those who did not.

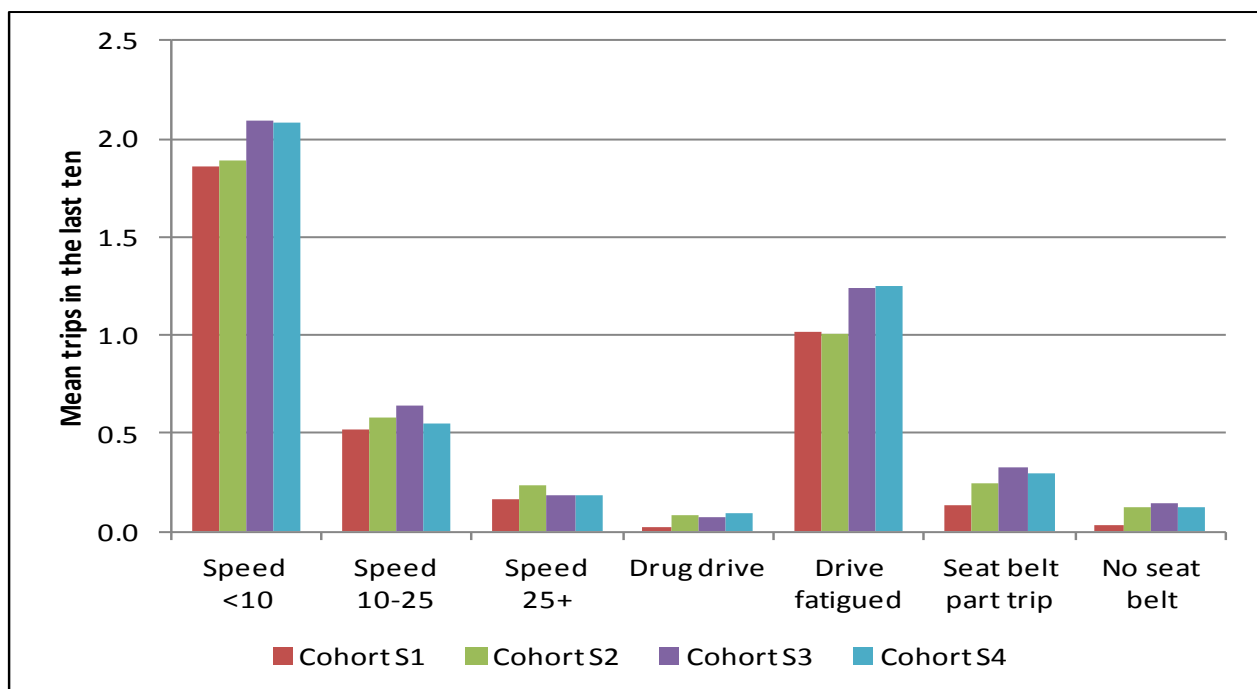
In a separate battery of questions on self-reported offences, 4.3% (12) of the young first years had in the last six months been caught violating the restriction.

### **Risky driving**

The cross-sectional study showed significantly fewer first to third year drivers had ‘driven after drinking when shouldn’t have’ in the last ten trips (7.6% pre- versus 5.6% post GLS, ( $\chi^2(1, n=4827) = 7.21, p=.007$ ), analysis of the cohorts in their first, second and third years of driving showed no consistent differences in self-reported drink-driving.

Participants were asked to report on how many of the last ten trips they had performed a number of risky driving behaviours. The analyses of measures which included drug-driving, speeding, failure to stop at traffic lights, use of a handheld mobile phone to talk, use of a mobile phone to read or send a text message, driving while very tired showed no consistent differences pre- versus post GLS in either the cohort or the cross-sectional study.

In the cohort study, GLM was performed with the items and the survey time points as repeated measures factors. Lower level speeding and driving while tired were the most common risky behaviours; others were relatively infrequent (Figure 2). There was a significant interaction between the survey and item factors ( $F(18,18252)=1.90, p=.012$ ) indicating significant differences across the surveys for some risky behaviours (regardless of whether the participant was licensed pre or post the enhanced GLS). Speeding by less than 10 km/h and driving while fatigued was less frequently reported by drivers in their first two surveys of the series (Figure 2) than at later in their licensure (surveys three and four).



**Figure 2. Mean trips in the last ten in which risky behaviours were performed for each survey of the cohort study**

### **Driving confidence**

A measure of driving confidence was included in some of the questionnaires. Participants rated themselves compared with other drivers their age on their ability to handle a range of different driving conditions. Responses from cross-sectional survey participants (young first years only) were analysed using a one-way ANOVA, comparing three sample subgroups (pre GLS, post GLS no requirement for 120 hours, post GLS required to complete 120 hours). There was no significant effect of the 120 hour rule factor ( $F(2,1241)=2.72, p=.066$ ), indicating there were no significant differences between the three groups of young drivers in their driving confidence. Results from analysis of the equivalent participants’ responses in survey one of the cohort study showed similar results; a non-significant effect of sample subgroup ( $F(2, 1869)=2.74, p=.065$ ).



### ***Driving exposure***

In both studies, three measures were used as indicators of driving exposure:

- kilometres driven in the last seven days
- minutes driven in each of the last two days (mean score across the two days was calculated)
- trips driven in each of the last two days (mean score across the two days was calculated).

There are advantages and disadvantages of using two and seven days as exposure measures; recall is likely to be more accurate than for a longer reference period, but the short period may not be representative of usual driving. Drivers were asked about how typical the last two days driving was of their usual driving pattern. More than three quarters of respondents indicated it was typical (ranging from 76%-81% across various survey waves). Where possible an exposure measure was used as an independent variable in the analyses of the cohort and cross-sectional survey data.

There were no consistent differences found between the pre and post enhanced GLS groups in terms of their driving exposure. However, consistent across all measures was the finding that those who owned a car had higher driving exposure than those who were not car owners, regardless of whether they were licensed pre or post the enhanced GLS.

In the cohort study, all three measures were subject to GLM analysis and only the kilometres driven in the last seven days measure showed a significant difference between the cohorts. ( $F(1,2880)=10.0$ ,  $p=.002$ ) The pre cohort drove on average almost 40 more kilometres in the last week than the post cohort (means were 192.3 km and 152.7 km respectively). There was no significant effect of cohort for minutes driven ( $F(1,2787)=0.55$ ,  $p=.458$ ) or trips driven ( $F(1,2787)=0.97$ ,  $p=.325$ ) in the last two days. There were no differences in car ownership between the cohorts. However, the rate of ownership increased longitudinally, with about two thirds of young drivers owning a car at the first survey and almost 80% by the final survey in the series.

In the cross-sectional study, similar analyses were performed for first to third year drivers. There was no significant effect of the pre post GLS factor on kilometres driven in the last seven days ( $F(1,4783)=0.0$ ,  $p=1.000$ ) or on trips driven ( $F(1,4448)=.067$ ,  $p=.412$ ) in the last two days. However, there was a small but significant difference between the pre and post GLS groups in minutes driven, with the post GLS group driving on average for seven minutes longer per day than the pre GLS group ( $F(1,4447)=14.92$ ,  $p<.001$ ). Car ownership showed a significant relationship with exposure ( $F(1,4447)=84.96$ ,  $p<.001$ ).

### ***Vehicle purchase***

Participants in some surveys were asked a series of questions about the purchase of their vehicles. The results from surveys three and four in the cross-sectional study showed that in about half of the cases participants had paid for the car themselves and in the other half there was financial assistance either in full or part from someone else, most often parents (the pre to post GLS comparison was not possible as this data was not collected in the earlier cross-sectional survey waves). The results were similar for the cohort survey where questions about vehicle purchase were asked in the final survey of the series for each cohort. Parents were involved financially in the vehicle purchase in almost half of the cases. Financial contributors to the purchase did not differ significantly between the two cohorts ( $\chi^2(3, n=811)=6.91$ ,  $p=.075$ ).

There was some evidence that when parents contributed to the purchase of the car, safety features were more likely to have an influence on the purchase decision:

- cross sectional study – airbags were more likely to contribute to the decision process compared with when the driver alone paid for the car ( $\chi^2(2, n=2723)=69.0$ ,  $p<.001$ )

- cross sectional study – safety rating of the vehicle was more likely to contribute to the decision process compared with when the driver alone paid for the car ( $\chi^2(2, n=2722)=54.0, p<.001$ )
- cohort study – airbags were more likely to contribute to the decision process compared with when the driver alone paid for the car ( $\chi^2(2, n=770)=7.04, p=.029$ ).

## **Discussion**

### ***Getting the licence***

Consistent with the requirement for young drivers to obtain a minimum of 120 hours supervised driving practice as a learner, there was an increase in practice reported in both studies. The results are consistent with the findings from the Victorian Learner Driver Monitor survey (Meyer et al., 2015) which showed that the mean hours practice among all learners increased from 83 hours in 1999 to 119 in 2014 and with the impacts of the changes to the Queensland licensing system (Scott-Parker, Bates, Watson, King & Hyde, 2011).

There is some evidence from both studies that the introduction of the minimum 120 hours practice requirement may have made it easier for learners to access practice. Fewer participants reported barriers to getting practice post the enhanced GLS than before, consistent with outcomes reported from changes to graduated licensing in Queensland (Scott-Parker et al., 2011). It does not appear that the introduction of the 120 hours requirement has had the consequence of encouraging more professional driving lessons to be undertaken to make up the hours. Nor was there evidence that the 120 hours requirement has had the effect of increasing confidence (or over confidence) among young drivers by virtue of their extensive experience. High levels of driving skill confidence can contribute to the underestimation of risk (Sumer, Ozkan & Lajunen, 2006), which would be an unintended consequence of the new 120 hour requirement.

The results for the first-time pass rate of the new on-road Drive Test and the perceptions of the test support the intention of the new test to be more challenging than the previous. The new Drive Test was intended to differentiate the drivers who had completed the required minimum driving practice requirement from those who had not (Cavallo & Oh, 2008); the results offer some support for this notion.

### ***Peer passenger restriction***

Longitudinal analysis of self-reported driving with peer passengers demonstrates that the passenger restriction is likely to have had a positive impact on young driver safety. Imberger et al. (2017) report a reduction in crashes involving P1 drivers carrying two or more passengers. The surveys suggest that the benefit of the restriction could extend beyond the first year of driving. While travel with more than one peer passenger post GLS increased with time since licensing, it was lower than the pre-GLS group at all time points in the survey series, even after the restriction ends.

P1 drivers have high levels of awareness of the peer passenger restriction. Although it impacts on the majority of P1 drivers reasonably frequently, they appear to have been able to adapt to it by calling upon other drivers to assist them with their travel plans. Violating the restriction did not appear to be related to access to public transport. Overall, this and other research indicates that peer passenger restrictions are an effective measure to manage young driver risk (Imberger, et al., 2017; Senserrick & Williams, 2015)

### ***Risky driving***

Drink-driving was found in the cross-sectional study to be lower among first to third year drivers; however, this was not replicated in the cohort study. Further, cross-sectional survey participants in

the fourth year of their probationary licence were half as likely to self-report drink-driving (4.5%) compared with drivers in their first year of fully-licensed driving after the former three-year probationary period (9.9%) (Imberger et al., 2017). New sanctions for drink-driving may be a contributing factor to the observed reduction in drink-driving observed.

A wide range of risky driving measures was assessed in the research and there was no consistent evidence from the survey data that the enhanced GLS changed the risk taking behaviour of young drivers. It is probable that the GLS measures which have facilitated increased experience as a learner and the less travel with multiple peer passengers contributed to the reduction in crashes observed by Catchpole et al. (2017), rather than a change in risky driving more generally. Some risky behaviours were very infrequent both pre and post GLS; therefore a ‘floor’ effect may inhibit the ability to detect changes due to the GLS.

### ***Driving exposure***

The surveys did not reveal any consistent differences in the driving exposure of those licensed before and after the enhanced GLS. There is no evidence from the surveys that exposure can account for the observed differences between those licensed pre- and post the enhanced GLS.

### ***Limitations***

Survey research can be susceptible to inaccurate recall and the social desirability responding. While this presents a problem in understanding the actual prevalence of specific behaviours these biases would not be expected to operate differently among the pre and post samples, so the outcomes comparing the pre and post GLS should reflect underlying change. It is encouraging that key survey findings align with the crash evaluation to present a clear picture of the impacts of Victoria’s enhanced GLS. It is acknowledged that recall of learner hours was problematic in these two survey projects, so the Learner Driver Monitor (which adopts a different methodology for assessing learner hours) should be referred to for more accurate estimates of actual hours. Due to the extended timeframe of the research there were some changes made to the surveys over time which limited the ability to make some comparisons. Limited sampling of fourth and fifth year post GLS participants, compared with pre GLS participants meant that impacts beyond the first three years of driving were not able to be properly examined in the surveys. While gender and a range of other factors were included as independent variables in the analyses, the large scale of the project coupled with time and budget for the evaluation prohibited more in-depth discussion of these factors on perception, behaviour and attitude measures.

### **Conclusions**

The survey results complement the GLS crash and offence evaluation and provide a context in which the observed crash and offence findings can be understood and provides support for other projects assessing the outcomes of Victoria’s enhanced GLS. The results show that the minimum 120 hour requirement has been effective in increasing hours driving practice. Making the 120 hours compulsory for younger drivers may have had the effect of assisting them to gain their practice, while not imposing extra financial burden of professional instruction. The peer passenger restriction is effective in changing driving patterns among young people and despite it being an imposition they manage to find alternatives to travel. The results are consistent with some of the findings relating to licensing changes in the Queensland (Scott-Parker et al., 2011) and with previous research which demonstrates the effectiveness of GLS as a measure to improve young driver safety (e.g., McCartt, et al., 2010; Senserrick & Williams, 2015).

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