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Changing licensing trends and travel mode choices of young adults

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Abstract

Analysis of driver licensing rates among young adults in Victoria, Australia, found declines in licensing since 2001. In 2014, over one-third of 18-24 year-olds did not hold a licence. Also, a survey of 147 non-driving young Australians found the most frequent main reasons for not holding a licence included the difficulty of the licensing process or its expense, not liking driving or preferring walking. Over a third of those surveyed aged 25-30 said they had never learned to drive, or were still learning. Young Victorian adults are changing their travel modes by driving less, not at all or delaying getting a licence, along with strong preferences for other travel modes, such as public transport and walking. Potential road safety implications include reduced road deaths and injuries, but also an ongoing demand for safer infrastructure for vulnerable road users. Also, all drivers will increasingly experience a road system comprising users aged over fifty along with road safety measures targeting that age group.

Keywords

Licensing, Travel mode, Young adults, Young drivers

Introduction

Are young adults' choices of travel mode changing? This is an important question because road user age can influence choice of travel mode, use of or exposure to the road

system, and consequently road safety. For example, if fewer young adults choose to take up driving, this could translate into fewer crashes involving that age group as well as travel mode patterns that persist into later adulthood. Declines in licensing rates also have the potential, in broad government and industry policy circles, to affect future transportation needs, driver supply in the transport industries, preferences for non-driving travel modes, vehicle purchases, and environmental consequences.

Changing travel mode choices among young people, particularly declines in the percentages with driver's licences, have been found in several countries. These declines are unique to young adults as they occur alongside increased proportions of licensed drivers of other ages. The countries included the US, Canada, Sweden, Norway, the UK and Germany (van Dender, 2013; Sivak, 2012), but also Australia (Raimond, 2010; Dutzik 2014; Delbosc 2013). Among North American young adults, common reasons given for *not* holding a driver's licence included that they were too busy to get a licence; owning and maintaining a vehicle is too expensive; they are able to get transport from others; and that they prefer walking, cycling or public transport to driving as travel mode choices (Schoettle 2013). Young adults researched elsewhere have given similar reasons (Dutzik 2014; Davis 2012; Foss 2014; Le Vine 2014).

The present study was a preliminary examination of evidence of driver licensing decline among young people in Victoria, Australia, and which surveyed young Australian adults' reasons for not wanting to drive or obtain a licence, for comparison with North American findings (Schoettle 2013). The study focussed on the potential road safety implications of changing travel mode choices because much of the research hitherto has been conducted from sociological and public transport planning perspectives, with very little attention paid to potential road safety implications.

Why are young adults' travel mode choices changing?

Past research into young adults' changing travel mode choices generally reports declines in driver licensing (van Dender 2013; Sivak 2012; Raimond 2010; Dutzik 2014) coupled with their increased use of alternative transport modes (Dutzik 2014; Kuhnimhof 2013; TransitCenter 2014; Asad FHA 2013). Other young adults, for various reasons, are delaying obtaining licences until their mid-20's or older (Raimond 2010). As well, even among *licensed* young adults, many are complementing their driving with increased use of alternative transport options (van Dender 2013; Kuhnimhof 2013). There are likely to be many inter-linked, societal-level factors influencing whether or not and, if so, when to obtain a licence, as well as choice of alternative travel modes (Aretun 2014). These factors include:

- transport planning policies, economic circumstances and market forces restricting access to and usage of cars (van Dender 2013; Metz 2013; Sivak 2014);
- a delayed transition from teenage to adult lifestyles (Aretun 2014; van der Waard 2012);
- increased use of bicycles and car-sharing schemes (van der Waard 2012; Strang 2013);
- a devaluing of car ownership and car use as a lifestyle characteristic (Kronenberg 2014; Delbosc 2013).

Also, public transport is becoming an increasingly more attractive choice among the young (at least for those who have good access to it) due to convenience, shorter travel times and that it facilitates sustained use of technological equipment such as smartphones and laptops (Davis 2012; TransitCenter 2014). Many jurisdictions explicitly ban young drivers from using hand held mobile phone technologies, thus providing a further incentive to travel as a passenger. In addition, evidence from Belgium suggests that many young people prefer to work from home or other convenient location (teleworking), rather than physically travel to business premises (Pirdavani 2014).

Declines in licensing among young Victorians

CASR obtained the total number of licensed drivers (Probationary and Full licences together) at each age from

18 to 90 on 30 June for the years 2001 to 2014 from the VicRoads Registration and Licensing Department. These ages were grouped as in Sivak and Schoettle's study (Sivak 2012) to permit comparison with the 15 countries they studied. The 30 June date is used by the Australian Bureau of Statistics (ABS) in its annual estimates of the population by age and sex. As the study sought to quantify the extent of gaining a licence in Victoria, the licence numbers included suspended and disqualified licences. It was not possible under the terms for this project to definitively identify numbers of licences first issued out of all issued licences in a particular year.

The driver licence numbers by age were tabulated alongside respective ABS population data for Victoria, and the percentage of licensed drivers then calculated for each age category across 2001-2014. These percentages were then examined for initial indications of any trends over time (see Figure 1), in anticipation of conducting a detailed statistical analysis as a separate future exercise.

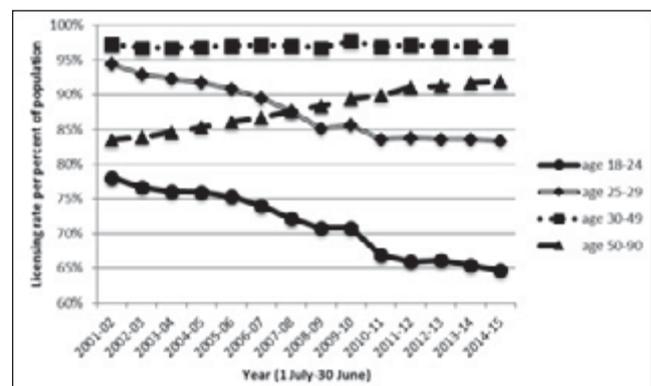


Figure 1. Licensing rates as percentages of Victorian population, by age group, 2001-2014

Between 2001 and 2014, there was an overall decline in the proportion of Victorians aged 18-24 who were licensed, culminating in over one-third of 18-24 year olds *not* holding a driver licence in 2014. The most marked decline was seen for 18 year olds specifically (not shown on Figure 1), with 52.5% per population holding a driver licence in 2001 (34,112 drivers), dropping to 39.9% per population by 2014 (29,274 drivers). There was also a decline in licensing among 25-29 year olds, going from 94.4% of the population in 2001 to 83.4% of the population in 2014.

By contrast, the rates for ages 30-49, while fluctuating a little, nevertheless indicated an overall pattern of little change. However, the age group 50-90 experienced a steady increase in licensing rates per population across 2001-2014, with the steepest rates found among those aged over 60. Importantly, these trends for drivers aged 30 to 90 are inconsistent with the declining patterns found for drivers under 29, demonstrating that the declining licensing rates of young drivers constitute a unique phenomenon not part of a broader licensing pattern.

For the years 2002 and 2014, the numbers of licence holders for each of the ages 18-24 were further analysed by subtracting each number of licence holders a year

Table 1. Estimated first time licensing rates as percentages of Victorian population, ages 19-24, at 30 June 2002 and 30 June 2014

Age	Licence rate as % of Vic population in 2002	Licence rate as % of Vic population in 2014	Difference between 2002 and 2014
19	18.5	18.5	0
20	7.2	8.5	+1.3
21	2.8	6.8	+4.0
22	3.0	5.0	+2.0
23	2.8	5.1	+2.3
24	1.4	1.7	+0.3
Average	5.9	7.6	1.7

younger in the previous year (as at 30 June). This provided an *indirect* estimate of the numbers of *new* (i.e. first time) licence holders aged 19-24 in 2002 and 2014. These numbers were then expressed as percentages of the Victorian population for those ages in 2002 and 2014, as can be seen in Table 1.

This indirect approach estimated that, in 2002, 18.5% of the population of 19 year olds in Victoria were first time licence holders (12,272 drivers), and this proportion was the same in 2014. By contrast, a greater proportion of 20 to 23 year olds were licensed in 2014 compared to 2002, which suggests there had been slight increases in first time licence holders for these ages, despite the overall decline in licensing for young drivers across that period.

Survey of young adults not licensed to drive

An online survey was conducted during February-March 2015 with Australians aged 18-30 who self-identified that they do not currently have a driver's licence or drive, and primarily seeking their reasons for their choices. It was anticipated that Victorian response patterns in the survey could assist in explaining any trends found when analysing the VicRoads licensing data, as well as gauging consistency with the survey responses nationally.

For purposes of results comparison, the survey was modelled on the questionnaire used by Schoettle and Sivak (Schoettle 2013), who provided permission to use a slightly modified format. Approval was also given by the University of Adelaide's Human Research Ethics Committee. The survey was short, containing eight questions, beginning with a confirmation of the participant's licence status. The remaining questions asked about age, gender and postcode, main and secondary reasons for not having a licence (if this was the case), any plans to become licensed and current main mode of travel. The two questions about main and secondary reasons for non-licensure provided several answer options that were randomised between the two questions and for each new participant to limit potential for any priming effects on respondents.

It was anticipated that young adults who do not drive constitutes a minority population who would be difficult to

identify for purposes of conducting a survey. Consequently, SurveyMonkey, an on-line business providing guidance in designing and implementing on-line surveys, and which was used by Schoettle and Sivak (Schoettle 2013) in their survey, was employed in the present study. Most of the respondents were recruited by SurveyMonkey from their current Australian audience pool. A separate SurveyMonkey weblink to the survey was promoted by the RACV among its young adult members via electronic newsletter and social media. Due to cost and timeline limitations, additional means of attracting potential participants were not pursued. In their survey, Schoettle and Sivak (Schoettle 2013) obtained a sufficiently large respondent pool to set age-based quotas to control for representativeness of the North American population. The respondent pool in the present study was not large enough to permit setting such quotas.

Nonetheless, responses were received from 270 individuals nationally (with 50 coming from the RACV weblink). Of the 270, 121 had indicated at the first question that they currently have a licence. These respondents were thanked but disqualified from completing further questions, as was the case in Schoettle and Sivak's (Schoettle 2013) original survey. It was important to have this initial filtering question as it constitutes an extra check to ensure that the survey sample comprised only individuals who did not hold a current licence. Two other respondents were excluded from further analysis as they had indicated their age was 31 or over. This left 147 adults aged 18 to 30 who did not currently hold a licence, although some of these had a learner's permit or an expired licence.

The overall gender breakdown of the 147 was 19.7% male ($n = 30$), 76.2% female ($n = 112$) and 4% 'other' or no response ($n = 5$). The 60 Victorian respondents contained 46 females (76.7%). The preponderance of females over males was likely due to SurveyMonkey's audience pools containing many more females than males, as well as females generally being more predisposed towards survey participation. In the present study, gender balance was not a prime issue of concern as it was deemed more important to maximise eligible respondent numbers, given the difficulty of locating 18-30 year olds who do not drive. Given this and the substantial female skewing among respondents, breakdowns of the survey data by gender are not reported here. Respondents' residences were: Melbourne metropolitan area 47 (32.0%), rest of Victoria 13 (8.8%), Western Australia 13 (8.8%), Tasmania 4 (2.7%), South Australia 14 (9.5%), Queensland 11 (7.5%), New South Wales 40 (27.2%), the Australian Capital Territory 4 (2.7%) and the Northern Territory 1 (0.7%), with 2 nil responses (1.4%).

Respondents were asked to give their one main reason for not having a licence and these, in descending order of frequency, are displayed in Table 2. As a majority of the respondents came from Victoria, those response proportions are presented alongside the national response proportions.

It can be seen in Table 2 that the three most frequent main reasons were that the respondent had *never learned or*

Table 2. Main reason for not having a driver's licence, % of respondents

Reason	%	n	Vic % (n)
Never learned or are still learning to drive	26.2	38	33.3 (20)
Do not like to drive or are afraid of driving	18.6	27	8.3 (5)
Too busy, too difficult, or not enough time to get a driver's licence	15.2	22	11.7 (7)
Owning and maintaining a vehicle is too expensive	6.9	10	8.3 (5)
Prefer to walk	6.2	9	6.7 (4)
Disability, medical problems or vision problem	6.2	9	8.3 (5)
Able to get transport from others such as friends or family	5.5	8	8.3 (5)
Other reason	4.1	6	6.7 (4)
Concerned about how driving can affect the environment	3.4	5	3.3 (2)
Prefer to use public transport	3.4	5	0
Planning to get a licence when older as licensing rules will be different	2.1	3	1.6 (1)
Prefer to cycle	1.4	2	3.3 (2)
Legal issue (e.g. a Court ban on obtaining a licence)	0.7	1	0
Can communicate / conduct work online instead	0	0	0
TOTAL	100*	145	100* (60)

*totals not exactly 100% due to rounding off; there were also 2 blank responses

was still learning to drive (26.2%), followed by *not liking driving or being afraid of driving* (18.6%), and *too busy, too difficult or not enough time to get a licence* (15.2%). These three reasons also constituted the three top reasons among the Victorian respondents, though not in that exact order. The free text “other” reasons generally related to lack of opportunity to get a licence, such as the costs or that no supervising driver was available.

When analysing the responses by age, the range of individual ages meant that most cells would contain numbers that would have been too low for meaningful analysis by single age, hence the following age groups were employed: 18-21, 22-24 and 25-30. Table 3 displays the three top main reasons for not being licensed from Table 2, but broken down by these age groups.

It can be seen in Table 3 that *never learned or still learning to drive* was the most frequent reason for not being licensed among the 18-21 year olds and 25-30 year olds. It is also interesting that *not liking driving* was a solid reason for not being licensed among respondents aged 22-24 and 25-30, and may be associated with *never learning or still learning to drive* responses of the age 25-30 group. The third most frequent main reason overall was being *too busy or that it is too difficult to get a licence*, and this predominated among the 18-21 age group. It should be noted that there are differences in minimum licensing ages across Australian jurisdictions and this may have influenced the response patterns by age.

Breaking down the 60 Victorian responses by both age group and reason for no licence yielded cell sizes that were too small for meaningful comparison. Nonetheless, as with the national data, majorities of Victorian 18-21 and 25-30 year olds also gave *never or still learning* as their top main reason (n = 9 and n = 9 respectively).

As only 13 of the 60 Victorian respondents resided in rural areas, it was not possible to meaningfully analyse the main or additional reasons for not being licensed by an urban versus rural divide due to the resultant small cell numbers. Consideration was given to adding the four rural NSW respondents to the 13 rural Victorian ones, but this would not have overcome the cell size problem.

Respondents' additional reasons for not being licensed are displayed in Table 4, where it can be seen that 53.8% or 78 of the respondents chose *never learned or still learning* as an additional reason. In fact, the frequency order for additional reasons is similar to that for the main reason, except that *owning and maintaining a vehicle is too expensive*, *able to get transport from others*, and *prefer public transport* were higher in the frequency ordering. The proportions for Victoria were in most cases similar to those for the participating jurisdictions collectively; certainly the frequency order was identical for the top five additional reasons and among the remaining additional reasons except in two instances.

Table 5 displays the six top additional reasons by age group, where it can be seen that 43.6% of those who chose *never learned or still learning* as an additional reason were from the 18-21 age group. It can be expected that the majority of these would have been still acquiring a licence. By contrast, 38.5% who chose this additional reason were from the 25-30 age group and it seems plausible that the majority of these were those who simply had never learned, although some may have decided to delay obtaining a licence. The 25-30 age group were also most likely to have stated that *owning or maintaining a car is too expensive*, that they *do not like driving* and that they prefer using *public transport*. Of all those respondents (national and Victoria) who gave *never learned or still learning* as their main reason for not

Table 3. Top main reasons for not having a driver's licence, % of respondents by age

Reason (descending overall frequency)	18-21 (n=61)	22-24 (n=34)	25-30 (n=52)	Total*
Never learned or are still learning to drive	39.7 (31)	21.8 (17)	38.5 (30)	100 (78)
Do not like to drive or are afraid of driving	25.4 (13)	37.3 (19)	37.3 (19)	100 (51)
Too busy, too difficult, or not enough time to get a driver's licence	54.1 (20)	18.9 (7)	27.0 (10)	100 (37)

*rounded to 100%

being licensed (Table 2), a quarter commonly indicated *not liking driving* among their additional reasons.

As with the national data, majorities of Victorian 18-21 and 25-30 year olds also gave *never or still learning* (n = 9 and n = 9 respectively) as their top additional reason, followed by *expense* (n = 6 and n = 7) and *not liking driving* (n = 5 and n = 6).

In the next survey question, respondents were asked when they plan to get a driver's licence, if at all. The majority (46.5%) said they planned to get one within 1 to 5 years, with 39.6% planning to get one within the next year, and 2.1% in 6 or more years. However, 11.8% said they had no plans to obtain a licence. This pattern order was similar among the Victorian respondents, where 48.3% planned to get a licence between 1 and 5 years, 37.9% within 1 year, and 12.1% having no plans to get a licence.

The younger driver age group (18-21) and the older group (25-30) predominated among those intending to obtain a licence within one year and in 1 to 5 years. In addition, 25-30 year olds were the age group most likely to indicate intentions to never obtain a licence.

As might be expected, those who indicated intentions to defer obtaining a licence for up to five years gave reasons for not being licensed that were consistent with their goals. Among this group, the most common main reason was that they had *never learned to drive or were still learning*, while common additional reasons were: *able to get transport from others*, *not liking driving* and *too busy*.

The final survey question asked respondents how they usually travel. The most common mode choice was public transport, followed by passenger travel. By age, 18-21 year olds (45.7%) appeared to be more likely than the other age groups to use public transport (compared with 21.0% for age 22-24 and 33.3% for 25-30). For those who travel as passengers, age 25-30 predominated (41.5%) (compared with age 18-21 — 36.6%, and for age 22-24 — 22.0%). As might be expected, respondents residing within a

Melbourne postcode area (n = 23) were more likely to cite public transport than did those residing in rural areas of Victoria (n = 7).

Discussion

Consistent with overseas and other Australian work, this study found an increasing likelihood of 18-29 year olds in Victoria *not* holding a driver licence compared to drivers in older age groups. By 2013-2014, just over one-third of 18-24 year-old Victorians chose not to be licensed. The trend is likely to be an underestimate due to the unquantified proportions who hold a valid driver's licence but choose not to drive. Not only is the trend consistent with other studies that use licence data, but the trend is similar to the findings of studies based on other types of data. Declining licensing among the young has also been demonstrated in major Australian statewide surveys of travel mode (Raimond 2010; Delbosc 2014).

Moreover, despite the overall decline in licensed young drivers, although based on indirect estimations, 2014 appeared to be slightly more likely to see *new* licence holders aged 20-23 compared to 2002. This could suggest that some young adults in Victoria, for whatever reason or reasons, have been delaying obtaining driver licences for a few years.

The study revealed increasing licensing rates among drivers aged over 50, which can largely be explained by demographic factors such as a larger cohort of older adults; increasing longevity; fitter and healthier cohorts of older people into the future and associated strong interests in maintaining personal motorised mobility; plus increasing proportions of older women with licences (Staplin 2013). If licensing rates among young drivers continue their characteristic pattern of decline found so far, it will mean that the age mix of drivers overall will increasingly comprise middle-age and older drivers, although this is already happening in part due to an ageing population.

Over a third of the national and Victorian survey respondents aged 25-30 said, as main and additional reasons, that they had never learned to drive or were still learning. This, together with the finding that not liking driving was a common main reason among 22-24 and 25-30 year olds from the Victorian and national respondents, as well as a similar finding in Sydney-based research (Raimond 2010), suggests the emergence of a strong pattern of not driving at all, particularly among some 25-30 year olds. Further support comes from the majorities of 25-30 year olds, nationally and in Victoria, who cited vehicle expenses and a preference for public transport as reasons for not having a licence (similar to overseas research findings (Dutzik 2014; Davis 2012; Foss 2014; le Vine 2014)). As well, possible increases in the numbers of Victorian 20-23 year olds obtaining licences for the first time, rather than commonly doing so at the minimum licensing age of 18, suggest an emergent tendency among some young Victorian adults to delay obtaining licences, and this is consistent with the research from Sydney (Raimond 2010). For as long as young adults do not yet

Table 4. Additional reasons for not having a driver's licence

Reason	*% of respondents	n	Vic % (n)
Never learned or are still learning to drive	53.8	78	56.7 (34)
Owning and maintaining a vehicle is too expensive	36.6	53	38.3 (23)
Do not like to drive or are afraid of driving	35.2	51	33.3 (20)
Able to get transport from others such as friends or family	30.3	44	30.0 (18)
Too busy, too difficult, or not enough time to get a driver's licence	25.5	37	25.0 (15)
Prefer to use public transport	24.1	35	26.7 (16)
Prefer to walk	20.0	29	15.0 (9)
Disability, medical problems or vision problem	10.3	15	13.3 (8)
Concerned about how driving can affect the environment	6.9	10	6.7 (4)
Planning to get a licence when older as licensing rules will be different	6.9	10	10.0 (6)
Other reason	4.1	8	5.0 (3)
Prefer to cycle	4.1	6	3.3 (2)
Can communicate / conduct work online instead	3.4	5	1.6 (1)
Legal issue (e.g. a Court ban on obtaining a licence)	0.7	1	0
TOTAL		382	(159)

*Respondents could choose as many additional reasons as they preferred; there were 2 blank responses.

have a licence, they, too, will be choosing other modes of travel.

Implications for road safety of young adults' changing travel mode choices

Although this study, in common with other research, points to a continuing pattern of licensing decline among young adults in Victoria, it is not certain to what extent this might be indicative of trends over the coming decades. In particular, it is not yet known if the present generation of young adults who do not drive will tend to maintain this choice as they get older, or if they will adopt transport mode choices more traditionally associated with middle adulthood and raising a family (Dutzik 2014; Sigurðardóttir 2014), which are often more car-reliant. Added to this is evidence of a declining need to travel from the rising popularity of teleworking among the young, at least in Belgium if not elsewhere (Pirdavani 2014).

Assuming that such licensing and population trends persist into the future, several implications for road safety can be suggested; fortunately, potentially positive ones. Any trend for fewer young Australian adults being licensed, along with preferences for other travel modes such as increased use of public transport (Richardson 2013), and preferences to walk and/or live closer to work, will mean reduced overall young driver exposure to the road, which potentially could result in fewer crashes involving young drivers and their passengers (Dutzik 2014). However, these benefits may be limited by the extent to which these young people become vulnerable road users in other transport modes. Hence, there will be an ongoing need for infrastructure measures that support safe cycling, walking and motorcycling (Moeinaddini 2015). The survey findings

also suggest there is a particular need for improving public transport to cater for young people who are not driving.

Amid a trend for fewer young drivers on the road, young drivers by virtue of their inexperience are likely to continue to be disproportionately represented in road tolls. While the survey shows some young adults say they do not intend to take up driving, others intend to obtain licences but are deferring that action for a few years. When they do obtain their licences, they will be older and likely more mature in their driving outlook (Williams 2011; Langley 2012), which, in theory at least, has potential to contribute to lowering young driver crash involvement. Nonetheless, Graduated Licensing Systems (GLS) that support young drivers while they gain experience will continue to be paramount. This includes those who obtain their first licences at older ages than the traditional minimum licensing ages. There may be a case for re-examining the appropriateness of GLS provisions for older first time drivers.

Over the next 50 years, the proportion of 15-29 year olds in Australia is projected to decline while the proportion aged 65 and over will rise substantially (ABS 2012). Consequently, within the coming decades it is conceivable that at least a half, if not more, of the country's drivers will be aged over 50, with a great many aged 65 plus. Many of the measures designed to improve the safety of older drivers will ultimately improve the safety of all drivers, including young drivers. All drivers, especially the declining proportion of young drivers, will come to find the road system increasingly occupied by older road users as well as the infrastructure improvements designed to better accommodate them. Moreover, not only are improvements needed in our public transport system to cater for increasing

Table 5. Top additional reasons for not having a driver's licence, % of responses by age

Reason (descending overall frequency)	18-21 (n=61)	22-24 (n=34)	25-30 (n=52)	Total
Never learned or are still learning to drive	43.6 (34)	17.9 (14)	38.5 (30)	100 (78)
Owning and maintaining a vehicle is too expensive	37.7 (20)	20.8 (11)	41.5 (22)	100 (53)
Do not like to drive or are afraid of driving	33.3 (17)	29.4 (15)	37.3 (19)	100 (51)
Able to get transport from others such as friends or family	56.8 (25)	22.7 (10)	20.5 (9)	100 (44)
Too busy, too difficult, or not enough time to get a driver's licence	56.8 (21)	16.2 (6)	27.0 (10)	100 (37)
Prefer to use public transport	34.3 (12)	28.6 (10)	37.1 (13)	100 (35)

proportions of older adults, but improvements are also needed because of strong preferences for public transport as a changing travel mode choice among young people.

Study limitations

While this study's chief finding of licensing decline among young adults in Victoria supports previous Australian studies and overseas work, and the surveyed reasons for non-licensure bear similarity with those of Schoettle and Sivak (Schoettle 2013) in the US, there are several limitations that should be borne in mind.

The trends found for licensing decline should be considered as indicative rather than definitive. This is because licence numbers obtained for a single day (30 June) do not reflect changes in those numbers over the previous 12 months due to, for example, newly licensed drivers, and drivers who die or who transfer from interstate. As noted earlier, the study sought to quantify the extent of gaining a licence in Victoria, so the licence numbers included drivers whose licences were suspended or disqualified. Moreover, it was not possible under the terms for this project to identify numbers of licences first issued out of all issued licences in a particular year (or account for those who were first licensed elsewhere, or who first obtained a motorcycle licence), so in this respect the dataset includes licence holders outside the target field. Obtaining numbers of licence holders in relation to population numbers is similarly an indirect means of estimating numbers of *non*-licence holders, the focus of the study. However, given the difficulty of quantifying non-licence holders the method used was an appropriate approach. It should also be appreciated that the licence data analysis is likely to give underestimates of non-drivers as it is feasible for many

adults to not drive despite holding licences. Lastly, despite finding licensing trends similar to those in other studies, care should still be exercised in extrapolating the Victorian licensing trends to other Australian jurisdictions.

The difficulty of identifying adults who do not drive also affected the response rate for the survey. Even though most jurisdictions were represented, as well as urban and rural areas, having just 147 eligible respondents (including the 60 from Victoria) restricted the extent to which reasons for not being licensed could be explored in relation to other variables such as age. Also, as many times more females than males responded, there was potential for the findings to be more characteristic of females than males. In addition, there are differences in minimum licensing ages across Australian jurisdictions, and this may have influenced the response patterns by age. It was unfortunate that 121 potential respondents had to be excluded on the basis that they currently had a licence, even though they may not have been active drivers. Current licensed drivers were excluded from the survey to allow reliable comparison of the findings with the original US survey (Schoettle 2013). Due to the nature of the SurveyMonkey respondent pool, the limited sample size and its restricted representativeness of the population, care should be exercised in extrapolating the survey findings to the broader populations of young Victorian and Australian adults.

Recommendations for further research

While this study, among others, identifies changing travel mode choices among young adults, further consideration of the road safety implications of these changes is needed. Recommended areas for further research include:

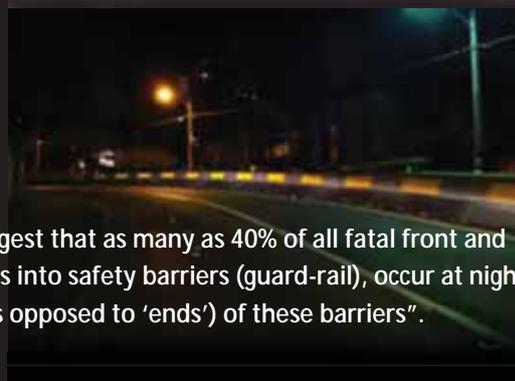
- the extent to which licensing decline among young adults exists in Australian jurisdictions besides Victoria, and especially in relation to urban versus rural localities;
- the prevalence of young adults who choose to not drive despite holding a valid driver's licence;
- the non-car driving travel modes chosen by young adults (namely public transport, cycling, motorcycling and walking) and their reasons for doing so; and
- the road safety implications of the findings from such research directions.

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Interim Evaluation of the Victorian Safer Road Infrastructure Program Stage 3 (SRIP3)

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(This paper was the winner of the Peter Vulcan Award for Best Research Paper at the Australasian Road Safety Conference held in Canberra in September 2016).

Abstract

The Safer Road Infrastructure Program Stage 3 (SRIP3) is a \$1b road infrastructure improvement program delivered over 10 years from 2007 aimed at reducing the incidence and severity of crashes at high risk locations across Victoria. This paper presents the results of an interim evaluation of 553 projects completed under SRIP3 up to 2014 at a cost of \$481M. Evaluation has been conducted in terms of the impact of the program on reducing the frequency and severity of crashes both for the program as a whole as well as for both broad and specific treatment types implemented under the program.

Background

Following on from the successful implementation of the Safer Road Infrastructure Program Stages 1 and 2, in May 2006 the Victorian Government announced the allocation

of Transport Accident Commission funds to implement the third stage of the Safer Road Infrastructure Program. SRIP3 is a ten-year program (2007-2017) with an indexed funding of \$722 million. Unlike stages 1 and 2, the third stage, SRIP3, not only addresses sites identified by high crash frequencies, but also includes safety upgrades at locations that do not necessarily have a current identified crash problem but are considered to have potential for high crash rates in the future (known as ‘Greyspots’) and 40 km/hr speed limit treatments along arterial shopping centre roads. SRIP3 also includes additional road segment treatment types not included in stages 1 and 2, such as mass action edge line installation on class C roads and tactile centrelines for class A roads. At the end of 2014, SRIP3 comprised 721 projects: 543 projects were at sites identified by high crash frequency with 375 of these at intersections and 168 along lengths of road; six were projects completed under a