



Young Adult Licensing Trends - 2017 Update

September 2017



Royal Automobile Club of Victoria (RACV) Ltd

Report No.	Date	ISBN	Pages
17/02	September 2017	978 0 9945666 4 5	22

Title

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Abstract

Declines in the proportions of young adults with driver licences have been reported in several countries. This study provides an update to a previous study of such trends in Victoria, Australia by Bailey et al. (2015). It was found in the present study that, for the years 2001 to 2016, there has been an overall 18% decrease in young Victorian adults aged 18 to 24 holding a driver licence. In 2016, over a third (37%) of Victorian adults aged 18 to 24 did not hold a driver licence. Licensing rates among Victorians in the 25 to 29 age group have also declined but to a lesser extent than those aged 18 to 24. With respect to gender, for the years 2014 to 2016, fewer males aged 18 to 24 were licensed (66%) than males aged 25 to 29 (87%). Fewer females than males were licensed in these two age groups (62% and 79%, respectively). For those aged 18 to 24, licensing rates for the Greater Melbourne area declined by 4% from 2011 to 2016, while licensing rates in rural areas increased by 4.7%. Licensing rates in Victorian regional centres remained stable over time but those aged 21 to 24 became increasingly more likely to be licensed while those aged 18 to 20 became less likely. It may be that young adults living in Victorian regional centres are taking longer to obtain a licence, or are intentionally delaying obtaining one. Overall, those living in the Greater Melbourne area or regional centres are less likely to be licensed than those dwelling in the remainder of Victoria, possibly due to the greater availability of alternative transport modes.

KEYWORDS

Licensing, young adults, gender, residence , Victoria, Metro, Rural, Regional.

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Executive Summary

Declines in the proportions of young adults with driver licences have been noted in the United States, Canada, Sweden, Norway, the United Kingdom and Germany (e.g. Sivak & Schoettle, 2012; van Dender & Clever, 2013). In Australia, Bailey et al. (2015) found that driver licensing rates among Victorians aged 18 to 30 years have declined since 2001. The Royal Automobile Club of Victoria (RACV) sought the assistance of the Centre for Automotive Safety Research (CASR) to produce an update to Bailey et al. (2015) to gauge whether the overall licensing rates among young Victorians are continuing to decline and whether the trends are the result of different patterns of licensing according to gender and metropolitan versus regional residence.

CASR obtained from VicRoads the total numbers of licence holders for individual ages 18 to 90 by gender for the period 2011 to 2016. The total numbers of licence holders for individual ages 18 to 24 by postcode of residence were also obtained to determine urban/rural licensing patterns in this age group. Once the number of driver licences at each age was obtained, these were tabulated against Australian Bureau of Statistics (ABS) population data for each age or age group for urban and rural areas, and for gender. The percentages of licensed drivers per population were then calculated for each category and were examined to ascertain any trends over time in driver licensing rates by location and gender for ages 18 to 24.

Overall across 2001-2016, there has been a decreasing trend for young Victorian adults to hold a driver licence. Licensing rates for young adults aged 18 to 24 have decreased by 18% since 2001, with over a third (37%) of Victorian adults aged 18 to 24 in 2016 not holding a driver licence. In 2016, 18 year olds had the lowest licensing rate on record (39.6%). Licensing rates among Victorians in the 25 to 29 age group have also declined since 2001, but not as substantially (by 12%). Since 2014, there has been a very slight downward trend in licensing rates for those aged 18 to 24 while for older age groups (i.e. age 30 to 65) licensing rates have remained relatively stable.

With respect to gender, across 2014 to 2016, on average 66% of eligible males aged 18 to 24 were licensed, whereas around 87% of males aged 25 to 29 were licensed. In comparison, fewer females in these age groups were licensed: on average 62% of females aged 18 to 24 and around 79% of females aged 25 to 29.

For those aged 18 to 24, licensing rates in the Greater Melbourne area tended to fluctuate slightly from 2011

to 2016, but on average declined slightly (4%) over that time while licensing rates increased by 4.7% for the rest of rural Victoria. When the Victorian rural area was further divided into two categories, regional centres (Geelong, Ballarat and Bendigo) and the remaining rural areas excluding regional centres, a pattern of increased licensing over time was evident for the rural areas (excluding regional centres) (6.3%) while licensing rates for the regional centres remained relatively stable. However, in regional centres across 2011 to 2016, those aged 21 to 24 became increasingly more likely to be licensed and those aged 18 to 20 became less likely. It may be that young adults living in regional centres in Victoria are either taking longer to obtain a licence (for various reasons), or are intentionally delaying obtaining one. Overall, those living in the Greater Melbourne area or regional centres are less likely to be licensed than those dwelling in other rural areas, possibly due to the greater availability of alternative transport modes.

There is growing government and community interest in licensing rates among young adults and it will be important to continue to monitor the trends in the future.

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1 Introduction

1.1 Background

Declines in the proportions of young adults with driver licences have been noted in the United States, Canada, Sweden, Norway, the United Kingdom and Germany (e.g. Sivak & Schoettle, 2012; van Dender & Clever, 2013). These declines are unique to young adults as they occur alongside increased proportions of licensed drivers of other ages. The recent study by Bailey et al. (2015) found that driver licensing rates among Victorians aged 18 to 30 years have declined since 2001. In 2014, over 40% of 18 to 21 year old Victorians did not have a driver licence. However, examining differences in licensing trends by gender and between urban and rural areas was not pursued as the main intention of that previous project was to compare young adults' licensing trends with those found in overseas jurisdictions. It is possible that the declines found by Bailey et al. (2015) in licensing rates among young adults in Victoria are evident only in metropolitan areas where alternative transport options are more readily available, in comparison to regional areas.

The Royal Automobile Club of Victoria (RACV) has sought the assistance of the Centre for Automotive Safety Research to produce an update to section 4.1 in the Bailey et al. (2015) study to yield an indication of whether the overall licensing rates among young Victorian adults are continuing to decline in recent years and whether the trends are the result of different patterns of licensing according to gender and metropolitan versus regional residence.

1.2 Procedure

For their previous study, Bailey et al. obtained from VicRoads total numbers of licensed drivers (probationary and full licence, and inclusive of motorcycle riders) as at 30 June for each individual age from 18 to 90 years for the years 2001 to 2014. Both current and suspended licence holders were included. To update the dataset, the previous methodology was replicated to obtain the total numbers of licensed drivers aged 18 to 90 inclusive for each of the years 2014 to 2016.

The total numbers of licence holders for individual ages 18 to 90 by gender were also requested from VicRoads for the period 2011 to 2016. However, data by gender was only available from 2014 to 2016 using this query. Note also that, where a driver's gender was recorded as other than male or female, such drivers were not counted in the study. The numbers for 'no gender specified' were relatively small: 6 in 2014, 8 in 2015 and 19 in 2016 (refer Appendix A13).

In addition, the total numbers of licence holders for individual ages 18 to 24 by postcode of residence were obtained to determine metro/rural licensing patterns in this age group. Prior communication with VicRoads had indicated that it was possible to extract this data for the period from mid-2011 to the present (inaccuracies in the data were detected by Vic Roads prior to this time point). VicRoads also provided a guide to determine metropolitan and rural status by postcode, to enable filtering by postcodes during the data analysis. Generally, the Greater Melbourne metropolitan area was considered as metropolitan and the rest of Victoria rural. To enable a more detailed analysis of licensing rates in rural areas, the rural category was further divided into two categories: regional centres (Geelong, Ballarat, Bendigo) and rural excluding regional centres (i.e. excluding Geelong, Ballarat and Bendigo).

Note that the query used to extract postcode data only included current licences (not suspended licences) and so was slightly different to that used for total licences and gender. As a result, the totals for each year by postcode are different to those for gender. While these figures cannot be directly compared, they still provide an indication of trends in metropolitan and rural licensing over time.

The Australian Bureau of Statistics (ABS) provides annual estimates of the population on 30 June for each Australian jurisdiction by age, gender and location (postcode of residence). Consequently, licensing data were obtained as close as possible to 30 June each year to match the ABS data. The ABS had not released population data by location for the year 2016 at the time of writing this report so CASR estimated the 2016 figures based on the averaged proportional change over the previous five years, a method of estimation previously confirmed by RACV. For the age range under study and for the years 2014 to 2016, the ABS noted that there were no nominations of "no gender" in the population data.

Population data from the ABS for regions of Victoria were only available for five year age groups (e.g. 15-19 and

20-24 years). Consequently, population numbers for each individual year of age (from 18 to 24 years) had to be estimated from the age groups. To do this, the population data for Victoria by individual age were obtained from the ABS. For each year (2011 to 2015), the population data by individual age was summed into the same age groups as in the data for population by regions of Victoria (15-19 and 20-24 years). The proportion of the total age group population that each individual age accounted for was calculated. These proportions were then applied to the age group-based population numbers for regions of Victoria to estimate the number of persons for each individual age. As some estimations were required, the population data based on regions in Victoria will vary to some degree from the population data used for gender and total licence numbers.

Once the number of driver licences at each age was obtained, these numbers were tabulated against respective ABS population data for each age or age group for metropolitan and rural areas, and for gender. The percentages of licensed drivers per population were then calculated for each category. These percentages were then examined to ascertain any trends over time in driver licensing rates by location and gender for ages 18 to 24.

1.3 Structure of this report

The remainder of this report consists of an updated version of section 4.1 from Bailey et al. (2015) providing licensing rates in Victoria by age. This is followed by analyses of licensing trends by gender and then by location of residence. The report concludes with a short commentary section containing brief discussion of the findings in relation to recent Australian research on licensing rates among young adults, together with recommendations for future research on this topic. The Appendices chapter contains tables of all the driver licensing rates analyses that pertain to the graphs (figures) seen in Chapter 2.

2 Population-based licensing rates in Victoria (2001-2016)

2.1 Licensing rates

The population rates derived from the recently acquired licensing data for 2014 to 2016 are presented in Figure 2.1 as a seamless continuation of the rates from 2001 to 2013 from Bailey et al. (2015). (Refer Appendix A1 for data table). It can be seen in Figure 2.1 that, over the years 2001 to 2016, between 40% and 72% of Victorian adults aged 18 or 19, and between 62% and 90% of those aged 20-24 years, were licensed drivers. Overall, from 2001 to 2016 there was an 18% decrease in the average licensing rate for those aged 18 to 24 years from 78% in 2001 to 64% in 2016. In 2016, 18 year olds had the lowest licensing rate on record (since 2001) at 39.6%.

Over time, the pattern is one of substantial decline in licensing from 2001 to 2009, followed by a very slight decline from 2011 onwards. Despite a little year to year fluctuation, the very slight downward trend has continued across 2014 to 2016.

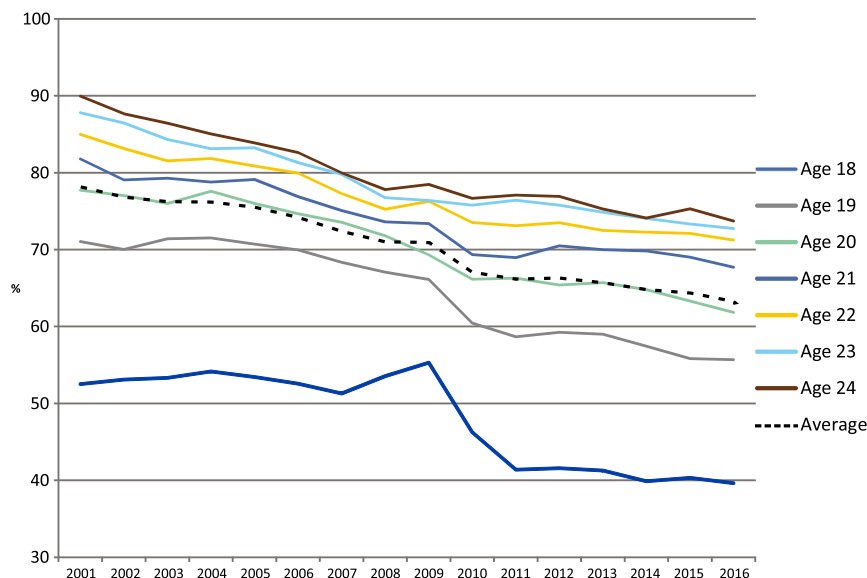


Figure 2.1
Licensing rates (percentages of Victorian population) for ages 18-24, 2001-2016

In order to demonstrate if these patterns found for age 18 to 24 drivers were reflective of the rates among age groups of drivers older than 18 to 24, Figure 2.2 shows the licensing rates of drivers aged 25 and older from 2001 to 2016 (refer Appendix A2). From 2011, while there were relatively fewer adults aged 25 to 29 and 70 to 90 who were licensed, between 90% and 99% of adults aged 30 to 69 were licensed. Moreover, the pattern across the 30 to 64 age groups has been generally one of stability and consistency since 2014 with the slight increase in licensing for adults aged 65 to 69 years continuing during this period.

However, this recent pattern of stability was not always consistent with the patterns prior to 2011. Across 2001 to 2011, licensing rates among ages 25 to 29 fell from 94% to 84%; ages 30 to 34 fluctuated slightly around 95%; ages 35 to 39 fluctuated a little around 97%; ages 40 to 54 rose slightly from around 95% to 97% towards nearly 100%; while age groups older than 55 all rose substantially.

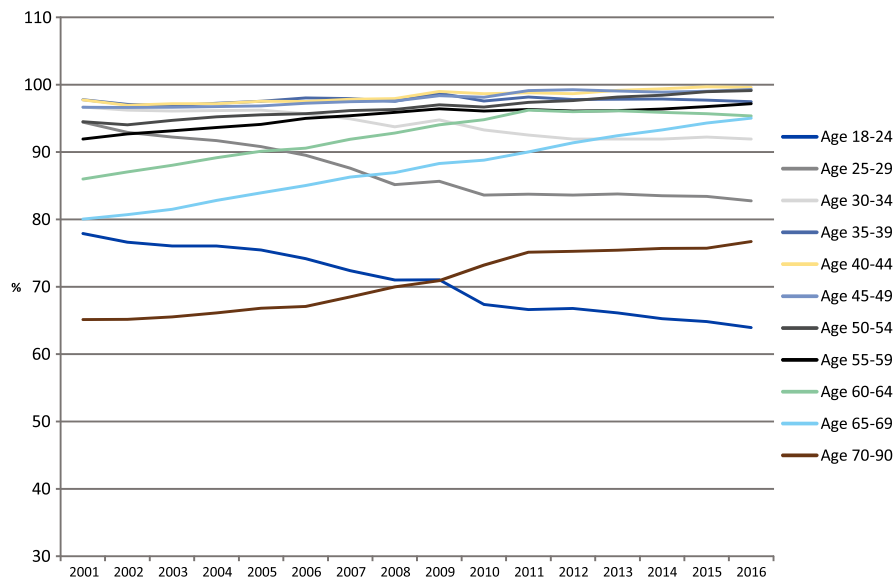


Figure 2.2
Licensing rates (percentages of Victorian population) for age groups, 2001-2016

In Bailey et al. (2015) it was possible to use the raw numbers of licences held to obtain an indirect indication of how many new (i.e. first time) licence holders there were within ages 18 to 24 across the period 2002 to 2014. This involved taking the total number of all licence holders aged 19 in 2002 and subtracting the number of all licence holders aged 18 in 2001 to produce the number of new licence holders aged 19 in 2002. This same methodology was adopted in the present study.

Figure 2.3 shows the trend in new licence holders aged 19 to 24 across the period 2002 to 2016 (refer Appendix A3). The raw numbers of licence holders by ages 18-24 used to develop Figure 2.3 are displayed in Appendix A4. In recent years (2012 to 2016), the number of new licence holders aged 19 has remained steady, whereas licence numbers for ages 20 to 24 have risen, suggesting the possibility of some young Victorian adults becoming licensed up to a few years later than the traditional age of 18.

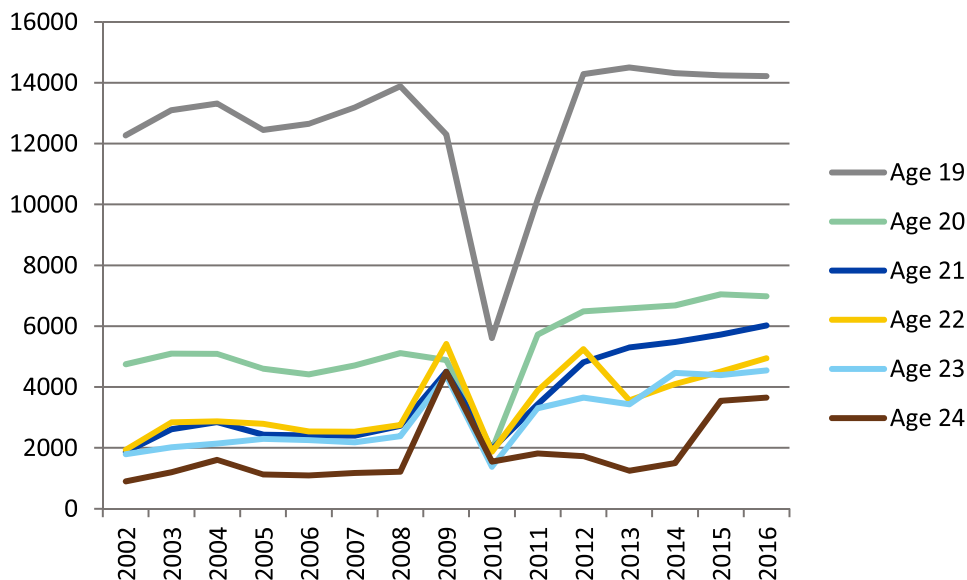


Figure 2.3
New licence holders for drivers aged 19-24, 2002-2016

2.2 Licensing rates by gender

The licensing pattern for males aged 18 to 24 across 2014 to 2016, as seen in Figure 2.4 (refer Appendix A5), was broadly reflective of the very slight downward trend found in Figure 2.1 for adults generally across this period and age range, including that those aged 18 had a licensing rate substantially lower than for those in other age groups.

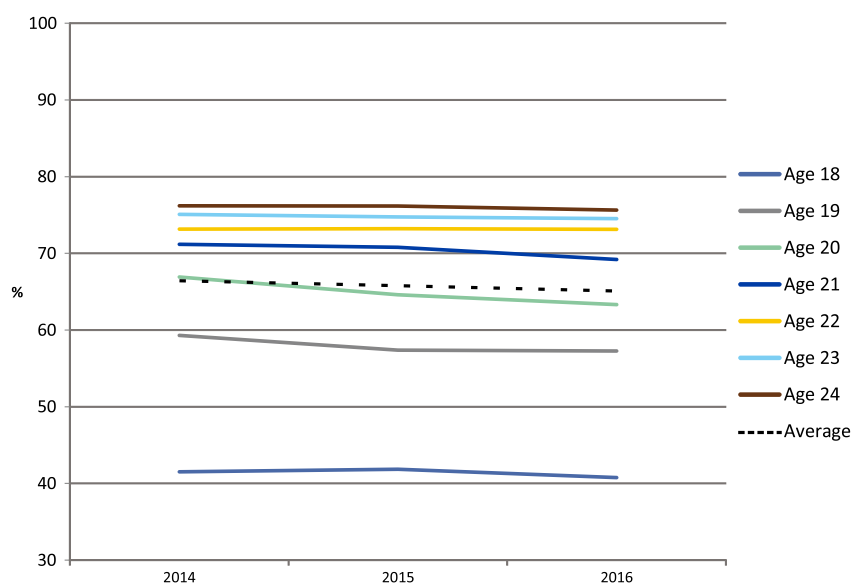


Figure 2.4
Male licensing rates (percentages of male Victorian population) for ages 18-24, 2014-2016

Figure 2.5 compares the licensing rates for males age 25 to 90 across the years 2014 to 2016 (refer Appendix A6). Again, the overall pattern for males aged 25 to 90 is consistent with the pattern found for adults generally in this age group (see Figure 2.2). While the age group 18 to 24 is included here for comparison, males aged 25 to 29 and those over 70 had substantially lower licensing rates than those in the 30 to 69 age groups.

However, it can be seen that the male licensing rates for ages 35 to 59 exceed 100%. The raw male licence numbers used to calculate the population rates in Figure 2.5 were double-checked and confirmed by VicRoads. It is not clear why these rates exceed 100% but it may be indicative of 'noise' in the data source that was not able to be eliminated in the data queries. It seems likely that this presence of 'noise' would occur consistently across the raw licence numbers of several age groups. This issue was not experienced in the 2015 study by Bailey et al. as licensing rates broken down by gender were not explored. The issue has only surfaced in the present study and VicRoads has indicated it is not resourced to investigate possible causes. Importantly for the present study, however, the rates in excess of 100% have occurred for age groups other than young adults, and it is young adults that form the prime focus of the present study.

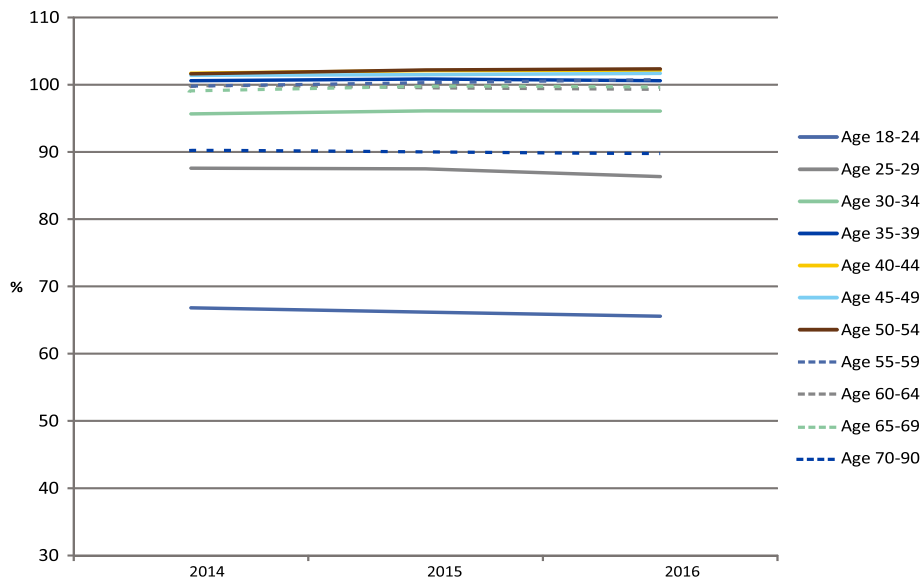


Figure 2.5
Male licensing rates (percentages of male Victorian population) for age groups, 2014-2016

It can be seen in Figure 2.6 (refer Appendix A7) that the licensing rates for females aged 18 to 24 across the years 2014 to 2016 were broadly reflective of the patterns found for young male drivers in Figure 2.4, and drivers generally in this age group in Figure 2.1, including that those aged 18 had a licensing rate substantially lower than for the other ages.

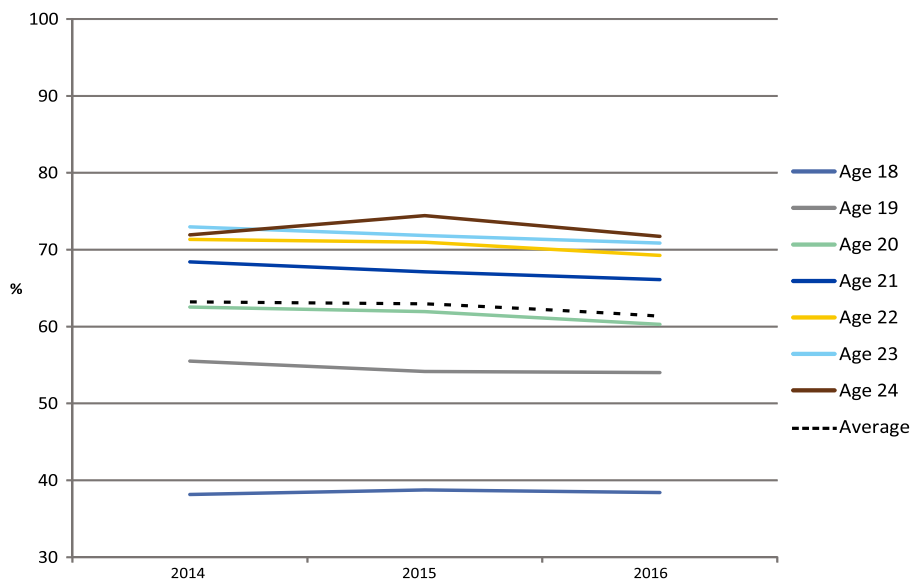


Figure 2.6
Female licensing rates (percentages of female Victorian population) for ages 18-24, 2014-2016

Female driver licensing rates for those in age groups from 25 to 90 can be seen in Figure 2.7 (refer Appendix A8). The overall patterns for females aged 25 to 90 are consistent with the patterns found for adults generally in this age group (Figure 2.2). Again, the youngest females (age 25 to 29) and those over 70 had substantially lower licensing rates than the 30 to 69 age groups.

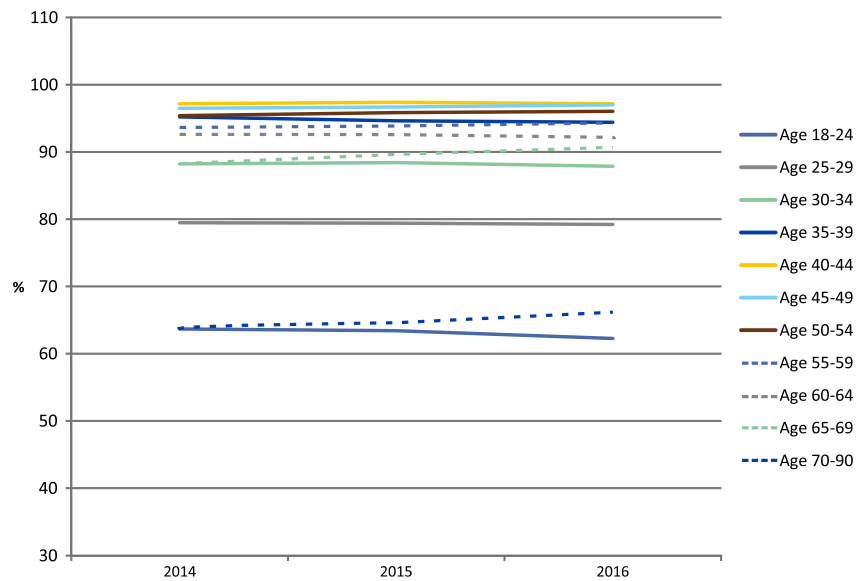


Figure 2.7
Female licensing rates (percentages of female Victorian population) for age groups, 2014-2016

Additionally, male and female licensing rates by age were compared. Figure 2.8 shows the licensing rates by gender and age averaged across 2014 to 2016 (refer Appendix A9). Males were statistically significantly more likely than females to be licensed, for each age in the 18 to 24 range (refer Appendix A10).

In each year, 2014, 2015 and 2016, there was a greater proportion of males aged 18 to 24 who were licensed than females, and these comparisons were statistically significant (refer Appendix A11).

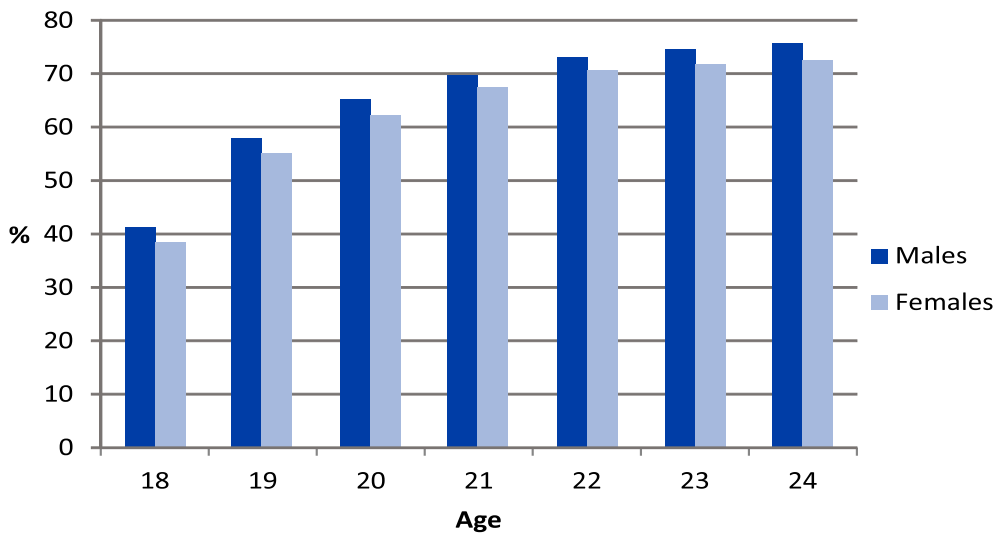


Figure 2.8
Comparison of male and female licensing rates (as percentages of Victorian population) for ages 18-24 averaged, 2014-2016

Figure 2.9 makes a similar comparison for ages 25 to 90 (refer Appendix A12). As for ages 18 to 24, males aged 25 to 90 were consistently slightly more likely to be licensed than females, although the difference was more marked in the age 70 to 90 group.

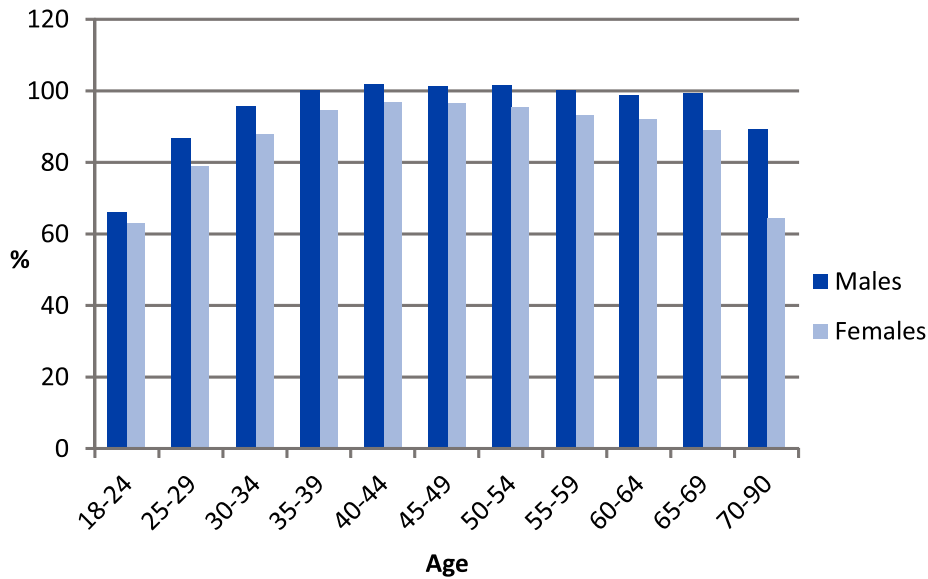


Figure 2.9
Comparison of male and female licensing rates (as percentages of Victorian population) for age groups averaged, 2014-2016

2.3 Licensing rates by driver residence

The driver licence numbers were analysed by postcode of driver residence and expressed as percentages of the population. It can be seen in Figure 2.10 (refer Appendix A14) that licensing rates for ages 18 to 24 in the Greater Melbourne metropolitan area fluctuated slightly across the period 2011 to 2016. On average across the age group though, there was a slight decrease from around 2012 but stabilising from 2015.

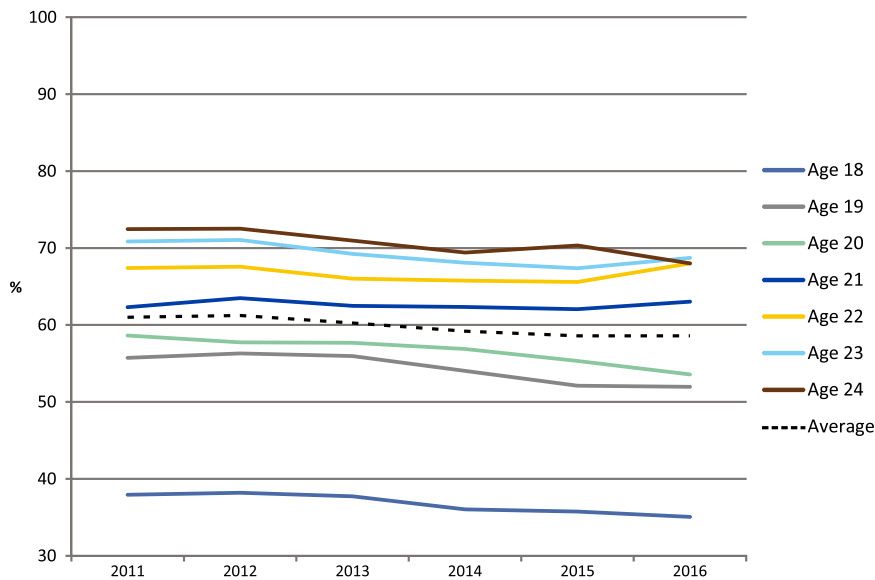


Figure 2.10
Licensing rates (percentages of Greater Melbourne population) for residents of Greater Melbourne aged 18-24, 2011-2016

Figure 2.11 shows licensing rates for the overall rural area (that is, Victoria excluding the Greater Melbourne area) (refer Appendix A15). The overall pattern for rural residents aged 21 to 24 is one of increasing licensing, but with fairly stable licensing rates for ages 18 to 20.

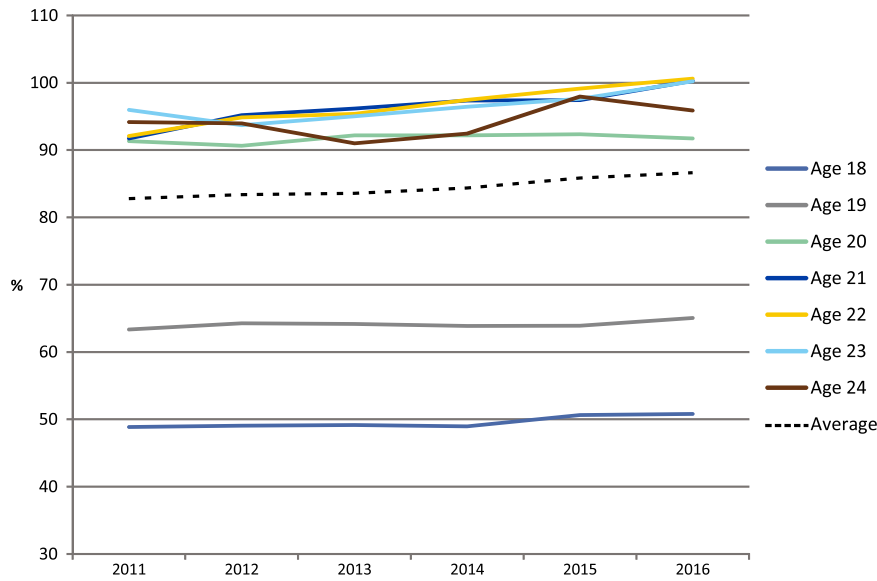


Figure 2.11
Licensing rates (percentages of overall rural area) for residents of all rural areas aged 18-24, 2011-2016

In order to examine patterns in rural licensing in greater detail, the rural category was further divided into two categories: regional centres (Geelong, Ballarat, Bendigo), and rural Victoria excluding regional centres. Figure 2.12 shows the percentages of licence holders aged 18 to 24 (per population) in total for three regional centres: Geelong, Ballarat and Bendigo (refer Appendix A16). There were differential patterns of licensing among individual ages in the 18 to 24 group, with rates increasing for ages 21 to 24, but decreasing for ages 18 to 20. On average across the ages, however, the overall regional centre pattern was one of stability.

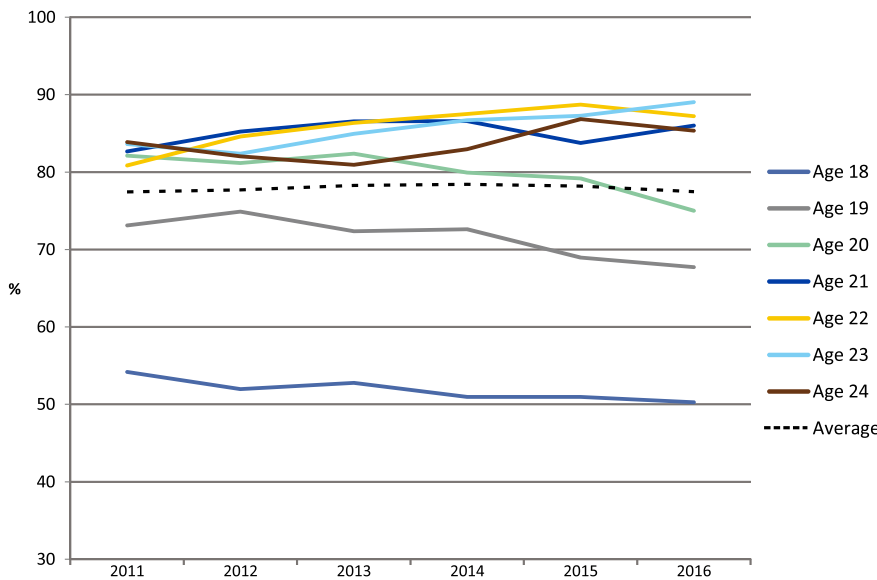


Figure 2.12
Licensing rates (percentages of regional centre population) for residents of regional centres aged 18-24, 2011-2016

Figure 2.13 shows licensing rates for ages 18 to 24 across 2011 to 2016 for rural Victoria excluding the three regional centres (Refer Appendix A17). There have been increases in the licensing rates for those aged 18 to 24 but particularly among those aged 21 to 24. A similar pattern for those aged 21 to 24 was observed for the three regional centres in Figure 2.12. Figure 2.13

Licensing rates (percentages of rural Victoria excl. regional centres) for residents of rural Victoria (excluding regional centres) aged 18-24, 2011-2016

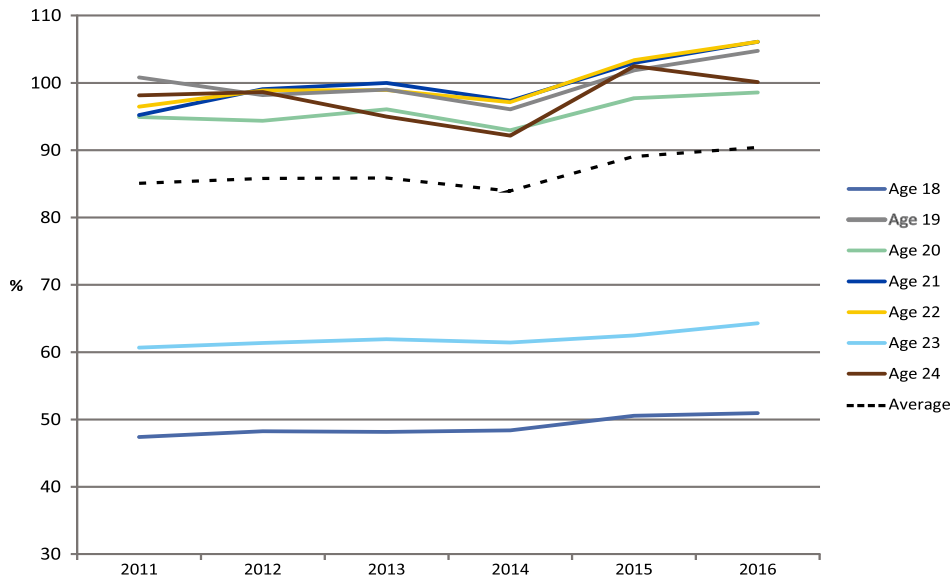


Figure 2.13
Licensing rates (percentages of rural Victoria excl. regional centres) for residents of rural Victoria (excluding regional centres) aged 18-24, 2011-2016

Figure 2.14 compares the four areas of driver residence above: Greater Melbourne area, regional centres, rural areas excluding regional centres, and overall rural Victoria, for averaged licensing rates among those aged 18 to 24 for the period 2011 to 2016 (refer Appendix A18). While there has been a slight decrease (4%) in young driver licensing since 2011 in the Greater Melbourne area, there have been increases in the overall rural area (4.7%) and particularly in the rural areas excluding regional centres (6.3%). On average, licensing rates for the regional centres were fairly stable. The Greater Melbourne area had a much lower level of licensure compared to the rural area.

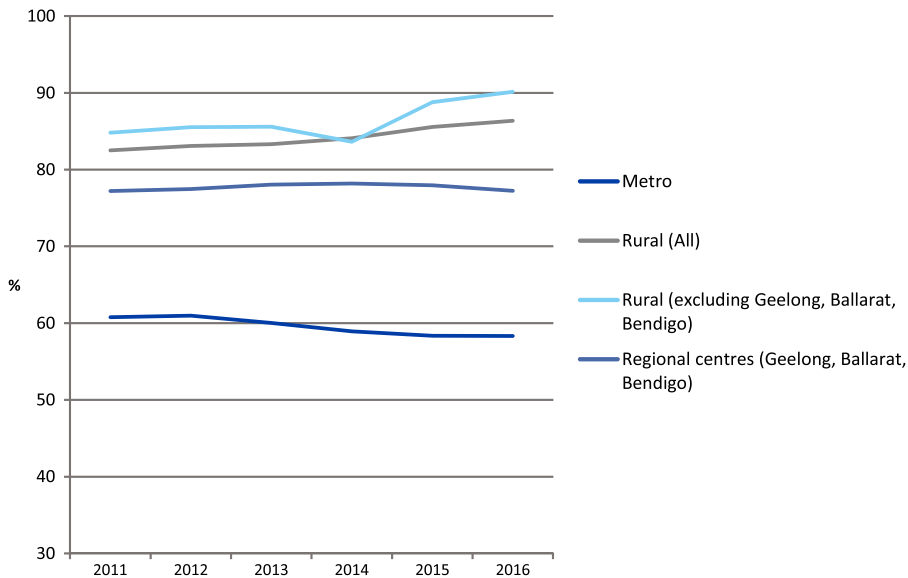


Figure 2.14
Licensing rates (percentages of population) by location of residence in Victoria, aged 18-24, 2011-2016

Figure 2.15 shows licensing rates averaged across 2011 to 2016 for each age in the range 18 to 24 and for each of the four areas of driver residence (refer Appendix A19). As might be expected, 20 to 24 year olds in each area were more likely to be licensed than 18 to 19 year olds. However, at all ages rural young people were statistically significantly more likely to be licensed than their counterparts in the Greater Melbourne area (refer Appendix A20.). Interestingly, the licensing patterns show that from age 20 most young adults in rural areas were licenced (92%), compared to just over half (56%) living in Greater Melbourne where the metropolitan rates only increased slowly up to around 70% at age 24. In the 20 to 24 age range, those living overall in rural areas (and rural areas when excluding regional centres) were most likely to be licensed. In contrast for that age group, those living in Greater

Melbourne or the three regional centres were least likely to be licensed. This shows that young adults living in urbanised environments are less likely to be licensed.

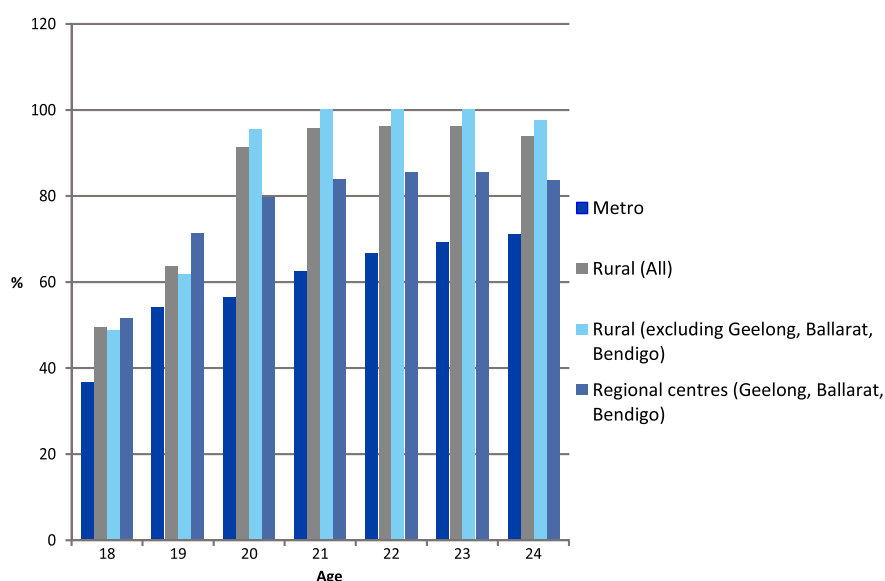


Figure 2.15
Licensing rates (percentages of population) averaged across 2011 to 2016, for each age 18-24, by residence

2.4 Summary of licensing trends among young adults in Victoria

Overall across the years from 2001 to 2016, there has been a decreasing trend for young Victorian adults to hold a driver licence. On average, licensing rates have decreased by 18% from 78% in 2001 to 64% in 2016. During the same period, licensing rates among Victorians in the 25 to 29 age group have also declined, but not as substantially (by 12%), going from 94% in 2001 to 83% in 2016.

Across the years 2014 to 2016, there has been a very slight downward trend in licensing for those aged 18 to 24 while for older age groups (i.e. age 30 to 65) licensing rates have remained relatively stable. While the present study covers only three further years of data, it will be interesting to see the extent to which the recent patterns of stability in licensing among Victorian adults persist.

Over a third (37%) of Victorian adults aged 18 to 24 in 2016 did not hold a driver licence. While 18 year olds are less likely to have a licence than those who are older, this is largely because many are in the process of either acquiring a licence if not yet to acquire one. However, the lower licensing rate for 18 year olds may also reflect that many young adults in Victoria are choosing not to drive as their prime choice of transport mode. The decline among 18 year olds has been the most substantial out of the 18 to 24 age group and has resulted in the lowest licensing rate for 18 year olds on record in 2016 (39.6%). It is not yet clear as to what extent such patterns may continue beyond 2016

Gender-wise the available data showed that, across the years from 2014 to 2016, on average 66% of eligible males aged 18 to 24 were licensed whereas around 87% of males aged 25 to 29 were licensed. In comparison, fewer females in these age groups were licensed: on average 62% of females aged 18 to 24 and around 79% of females aged 25 to 29. For each individual age from 18 to 24, males had statistically significant higher licensing rates than females.

For those aged 18 to 24, licensing rates in the Greater Melbourne area tended to fluctuate slightly from 2011 to 2016, although on average across the ages there was a slight downward trend over that time (4%). In contrast, licensing rates increased by 4.7% in the overall rural area. Further analysis of rural areas uncovered a pattern of increased licensing over time for rural areas when excluding regional centres (6.3%) but relatively stable licensing rates for Victorian regional centres (Geelong, Ballarat and Bendigo). However, for regional centres the pattern was a bifurcated one, with ages 21 to 24 being more likely to be licensed across the time period (increasing rates), and ages 18 to 20 seemingly less likely to be licensed (decreasing rates). It may be that young adults residing in regional centres within Victoria are either taking longer to obtain a licence, or are intentionally delaying obtaining one. Overall, there was a clear trend that those living in Greater Melbourne or regional centres were less likely to be licensed than those dwelling in other rural areas, possibly due to the greater availability of alternative transport modes.

3 Commentary and future research needs

That at least one Australian state has reported experiencing declining proportions of young adults with driver licences is of emergent national interest. Indeed, the Bureau of Infrastructure, Transport and Regional Economics (BITRE), in a 2017 Information Sheet, Drivers Licences in Australia, noted (p.12):

“There has been much attention given lately to the increasing tendency for younger age groups to not hold a licence.”

The Information Sheet then goes on to display a graph (Figure 14) of age-related trends in driver licences in Victoria. The graph covers licensing data from 1994 to 2015. For 18 to 28 year olds, the graph shows a trend of about 82% of Victorians in that age group licensed in 1994, rising to about 88% in 2001, before dropping to 77% in 2010, with a stable trend after that. By contrast, licensing rates among 29 to 48 and the over 65s have increased to around 95% towards 2008 and have tended to be stable since then. Interestingly, the BITRE considers that, not only have the changes in trends not ‘destabilised’ the overall trend, but that they are “unlikely to do so over the coming decades”.

It may well be that the changes in Victorian licensing rates for young adults are indicative of an overall national pattern, in tune with patterns found in some overseas jurisdictions as mentioned at the start of this report. Such changes have also been noted in car industry circles. Roy Morgan Research every few years conducts surveys of the millennial generation on a range of topics. Their 2016 State of the Nation survey report found that 67% of this generation who participated in a car driving survey said they drove a vehicle, whereas in 2006 the respective figure was 72.5%. Roy Morgan’s head statement for this finding was, “Young people no longer equate driving with freedom, and around one third of Aussies aged 18 to 34 don’t drive”, adding “...and are less likely to drive than people of their age a decade ago”.

It is a moot point as to what extent the current patterns found in 18 to 24 and 25 to 29 year olds’ licensing rates may continue. It will be important to monitor these patterns over the coming decade, and with respect to gender and residence particularly. We need to ascertain for example if those 18-24 year olds who currently do not have a licence eventually choose to obtain one after age 25. We should also examine to what extent those in regional centres aged 21 to 24 continue to become increasingly licensed while those aged 18 to 20 become less likely. It may be that young adults licensing rates in regional centres will follow patterns in the metropolitan area, should these centres become more urbanised. Further research should consider surveying young adults living in these regional centres to obtain a better understanding of the trends in the data, and the reasons behind the differential patterns in licensing. It is likely that there are a number of multifaceted and interlinked factors behind the decision of whether or not and if so, when, to obtain a driver licence. These could include the availability of transport, employment options, cost of transport, and lifestyle preferences.

In terms of road safety, a continuing trend for fewer young adults being licensed may mean reduced overall young driver exposure to the road, which potentially could result in fewer crashes involving young drivers and their passengers (Dutzik, Inglis, & Baxandall, 2014).

Acknowledgements

This study was funded by the Royal Automobile Club of Victoria (RACV) Limited through a Project Grant to the Centre for Automotive Safety Research. The RACV Project Managers were Rebekah Smith and Georgia Baggio-Quiah. The Centre for Automotive Safety Research is supported by both the South Australian Department of Planning, Transport and Infrastructure and the South Australian Motor Accident Commission.

The views expressed in this report are those of the authors and do not necessarily represent those of the University of Adelaide or the funding organisations.

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Appendices

Table A1
Driver licensing (males) rates per population, by ages 18-24, for years 2014-2016

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Age 18	52.50	53.11	53.33	54.16	53.43	52.58	51.29	53.53	55.30	46.24	41.39	41.57	41.27	39.89	40.33	39.63
Age 19	71.06	70.03	71.42	71.51	70.72	69.95	68.34	67.06	66.11	60.44	58.68	59.26	59.00	57.45	55.81	55.67
Age 20	77.73	77.03	75.99	77.58	75.99	74.66	73.54	71.81	69.33	66.15	66.29	65.39	65.69	64.78	63.32	61.85
Age 21	81.78	79.05	79.27	78.77	79.11	76.89	75.07	73.62	73.37	69.36	68.95	70.50	69.98	69.83	69.02	67.70
Age 22	85.00	83.15	81.55	81.83	80.87	79.96	77.29	75.24	76.27	73.53	73.09	73.50	72.48	72.27	72.11	71.25
Age 23	87.80	86.46	84.32	83.11	83.24	81.32	79.78	76.74	76.39	75.78	76.40	75.79	74.86	74.05	73.33	72.74
Age 24	89.93	87.65	86.44	85.05	83.87	82.62	79.97	77.82	78.47	76.66	77.09	76.91	75.29	74.10	75.31	73.72

Table A2

Driver licensing rates per population, by ages 24-90, for years 2001-2016

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Age 18-24	77.90	76.63	76.05	76.07	75.45	74.19	72.40	71.02	71.03	67.37	66.61	66.79	66.13	65.28	64.84	63.96
Age 25-29	94.43	92.93	92.23	91.71	90.80	89.52	87.62	85.16	85.67	83.62	83.76	83.62	83.78	83.50	83.42	82.77
Age 30-34	96.68	96.24	96.11	96.16	96.23	95.71	94.93	93.76	94.79	93.29	92.52	91.94	91.94	91.92	92.23	91.93
Age 35-39	97.77	97.10	96.90	97.24	97.55	98.05	97.93	97.56	98.74	97.58	98.18	97.81	97.85	97.88	97.72	97.48
Age 40-44	97.75	96.94	97.20	97.20	97.55	97.51	97.84	97.95	98.99	98.68	98.80	98.67	99.16	99.38	99.70	99.60
Age 45-49	96.65	96.61	96.64	96.77	96.86	97.26	97.47	97.59	98.38	98.13	99.12	99.26	99.05	98.90	99.05	99.30
Age 50-54	94.52	94.04	94.72	95.24	95.55	95.69	96.15	96.32	97.02	96.70	97.39	97.64	98.18	98.45	98.96	99.13
Age 55-59	91.92	92.70	93.17	93.64	94.10	94.99	95.39	95.89	96.44	96.10	96.32	96.11	96.17	96.39	96.75	97.18
Age 60-64	85.99	87.06	88.04	89.16	90.12	90.59	91.90	92.83	94.05	94.80	96.23	95.99	96.14	95.91	95.71	95.37
Age 65-69	80.04	80.71	81.50	82.83	83.95	85.03	86.28	86.94	88.31	88.80	90.01	91.38	92.43	93.28	94.31	95.02
Age 70-90	65.13	65.17	65.53	66.14	66.81	67.07	68.50	69.99	70.91	73.22	75.14	75.27	75.45	75.71	75.73	76.72

Table A3

Numbers of new licence holders, ages 18 to 24, for years 2002-2016

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Age 19	12272	13096	13315	12453	12656	13192	13888	12301	5607	10175	14282	14501	14321	14247	14221
Age 20	4752	5101	5089	4604	4414	4705	5117	4885	1936	5726	6489	6581	6680	7044	6979
Age 21	1862	2616	2848	2435	2407	2403	2724	4508	1962	3434	4815	5299	5481	5723	6026
Age 22	1937	2841	2871	2788	2539	2534	2750	5417	1871	3876	5241	3560	4100	4504	4945
Age 23	1793	2017	2143	2298	2257	2182	2386	4371	1375	3300	3650	3433	4465	4392	4543
Age 24	899	1197	1602	1125	1091	1175	1218	4500	1545	1819	1723	1246	1499	3547	3653

Table A4
Number of licensed drivers by age, Victoria, 2001-2016

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Age18	34112	34696	35744	36492	36243	36163	36179	39250	40723	33374	29912	30180	30278	29274	29933	29392
Age19	46438	46384	47792	49059	48945	48899	49355	50067	51551	46330	43549	44194	44681	44599	43521	44154
Age20	50965	51190	51485	52881	53663	53359	53604	54472	54952	53487	52056	50038	55337	56256	51643	50500
Age21	52369	52827	53806	54333	55316	56070	55762	56328	58980	56914	56921	56871	55337	56256	57084	57669
Age22	54478	54306	55668	56677	57121	57855	58604	58512	61745	60851	60790	62162	60431	59437	60760	62029
Age23	56277	56271	56323	57811	58975	59378	60037	60990	62883	63120	64151	64440	65595	64896	63829	65303
Age24	57678	57176	57468	57925	58936	60066	60553	61255	65490	64428	64939	65874	65686	67094	68443	67482

Table A5

Driver licensing (males) rates per population, by ages 18-24, for years 2014-2016

	2014	2015	2016
Age 18	41.52	41.84	40.77
Age 19	59.29	57.39	57.27
Age 20	66.90	64.61	63.32
Age 21	71.19	70.78	69.21
Age 22	73.17	73.21	73.13
Age 23	75.09	74.75	74.54
Age 24	76.20	76.17	75.64

Table A6

Driver licensing (males) rates per population, by ages 25-90, for years 2014-2016

	2014	2015	2016
Age 25-29	87.57	87.47	86.34
Age 30-34	95.65	96.10	96.07
Age 35-39	100.60*	100.85*	100.58*
Age 40-44	101.72*	102.10*	102.12*
Age 45-49	101.39*	101.50*	101.69*
Age 50-54	101.61*	102.19*	102.35*
Age 55-59	99.52	100.05*	100.48*
Age 60-64	99.66	99.27	99.05
Age 65-69	98.82	99.51	99.89
Age 70-90	90.19	89.30	89.51

*See note in section 2.2

Table A7

Driver licensing (females) rates per population, by ages 18-24, for years 2014-2016

	2014	2015	2016
Age 18	38.16	38.74	38.42
Age 19	55.50	54.14	54.00
Age 20	62.53	61.94	60.30
Age 21	68.40	67.13	66.10
Age 22	71.33	70.97	69.26
Age 23	72.98	71.85	70.87
Age 24	71.94	74.42	71.73

Table A8

Driver licensing (females) rates per population, by ages 25-90, for years 2014-2016

	2014	2015	2016
Age 25-29	79.47	79.41	79.22
Age 30-34	88.22	88.42	87.86
Age 35-39	95.20	94.64	94.41
Age 40-44	97.14	97.39	97.17
Age 45-49	96.48	96.68	97.01
Age 50-54	95.40	95.85	96.04
Age 55-59	93.38	93.60	94.04
Age 60-64	92.34	92.33	91.89
Age 65-69	88.00	89.38	90.44
Age 70-90	63.67	64.36	65.90

Table A9

Driver licensing rates for males compared to females, ages 18 to 24 (averaged over 2014 to 2016)

	Age 18	Age 19	Age 20	Age 21	Age 22	Age 23	Age 24
Males	41.37	57.98	64.93	70.37	73.17	74.79	76.00
Females	38.44	54.54	61.58	67.19	70.50	71.89	72.69

Table A10

Tests of statistical significance, males compared to females by individual age (combined years 2014 to 2016)

Age 18	Does have a licence	Does not have a licence
Males	47127	66780
Females	41472	66412

Chi-square = 198.54, $p < .001$

Age 19	Does have a licence	Does not have a licence
Males	69864	50630
Females	62410	52014

Chi-square = 292.09, $p < .001$

Age 21	Does have a licence	Does not have a licence
Males	89865	37834
Females	81143	39621

Chi-square = 292.74, $p < .001$

Age 22	Does have a licence	Does not have a licence
Males	95180	34908
Females	87042	36420

Chi-square = 222.49, $p < .001$

Age 23	Does have a licence	Does not have a licence
Males	100823	33990
Females	93205	36443

Chi-square = 283.77, $p < .001$

Age 24	Does have a licence	Does not have a licence
Males	105458	33301
Females	97561	36650

Chi-square = 391.85, $p < .001$

Table A11

Tests of statistical significance, males compared to females, ages 18 to 24 (for 2014, 2015 and 2016)

2014	Had a licence	No licence
Males	195406	97097
Females	177511	101285

Chi-square = 618.62, p < .001

2015	Had a licence	No licence
Males	196411	100367
Females	178802	103071

Chi-square = 478.73, p < .001

2016	Had a licence	No licence
Males	197487	103727
Females	179037	108447

Chi-square = 689.22, p < .001

Table A12

Driver licensing rates for males compared to females, ages 25 to 90 (averaged over 2014 to 2016)

	Age 18-24	Age 25-29	Age 30-34	Age 35-39	Age 40-44	Age 45-49	Age 50-54	Age 55-59	Age 60-64	Age 65-69	Age 70-90
Males	66.18	87.12	95.94	101.53	101.98	101.53	102.05	100.02	99.32	99.42	89.66
Females	63.12	79.37	88.16	96.73	97.23	96.73	95.77	93.68	92.19	89.30	64.66

Table A13

Numbers indicating 'no gender' on licence applications

	2014	2015	2016
Age 18	0	0	0
Age 19	0	0	0
Age 20	0	0	0
Age 21	0	0	1
Age 22	0	0	4
Age 23	0	0	0
Age 24	0	0	0
Age 18-24	0	0	5
Age 25-29	0	3	6
Age 30-34	1	1	2
Age 35-39	4	0	1
Age 40-44	0	2	2
Age 45-49	1	0	1
Age 50-54	0	2	2
Age 55-59	0	0	0
Age 60-64	0	0	0
Age 65-69	0	0	0
Age 70-90	0	0	0
TOTAL	6	8	19

Table A14

Licensing rates by age (18 to 24) for Greater Melbourne area, 2011-2016

	2011	2012	2013	2014	2015	2016
Age 18	37.94	38.18	37.74	36.03	35.75	35.07
Age 19	55.74	56.32	55.95	54.02	52.10	51.96
Age 20	58.63	57.74	57.69	56.87	55.33	53.56
Age 21	62.32	63.49	62.47	62.35	62.05	63.03
Age 22	67.39	67.56	66.03	65.76	65.59	67.99
Age 23	70.86	71.05	69.24	68.09	67.37	68.72
Age 24	72.47	72.53	70.98	69.42	70.33	68.00

Table A15

Licensing rates by age (18 to 24) for overall rural area, 2011-2016

	2011	2012	2013	2014	2015	2016
Age 18	48.86	49.05	49.16	48.94	50.65	50.79
Age 19	63.35	64.27	64.18	63.86	63.91	65.05
Age 20	91.34	90.64	92.19	92.18	92.35	91.72
Age 21	91.71	95.17	96.17	97.35	97.42	100.28*
Age 22	92.10	94.85	95.37	97.47	99.12	100.60*
Age 23	95.98	93.71	95.03	96.44	97.62	100.21*
Age 24	94.15	93.96	91.00	92.45	97.95	95.86

*see note in section 2.2

Table A16

Licensing rates by age (18 to 24) for regional centres (Geelong, Ballarat, Bendigo), 2011-2016

	2011	2012	2013	2014	2015	2016
Age 18	54.19	51.95	52.77	50.95	50.97	50.27
Age 19	73.11	74.89	72.36	72.62	68.96	67.72
Age 20	82.11	81.15	82.38	79.94	79.17	75.00
Age 21	82.67	85.24	86.56	86.58	83.76	86.01
Age 22	80.85	84.60	86.34	87.51	88.71	87.22
Age 23	83.62	82.37	84.95	86.69	87.26	89.03
Age 24	83.87	82.02	80.93	82.96	86.84	85.35

Table A17

Licensing rates by age (18 to 24) for rural excluding regional centres, 2011-2016

	2011	2012	2013	2014	2015	2016
Age 18	47.40	48.26	48.17	48.38	50.56	50.94
Age 19	60.67	61.37	61.92	61.44	62.49	64.30
Age 20	94.93	94.36	96.07	92.96	97.73	98.58
Age 21	95.23	99.08	99.98	97.34	102.99*	106.11*
Age 22	96.48	98.88	98.95	97.14	103.37*	106.10*
Age 23	100.80	98.17	99.01	96.08	101.86*	104.77*
Age 24	98.16	98.65	94.99	92.16	102.50*	100.11*

Table A18

Licensing rates by age average (18 to 24) for four areas of driver residence, 2011-2016

	2011	2012	2013	2014	2015	2016
Greater Melbourne	60.76	60.98	60.01	58.94	58.36	58.33
Rural (All)	82.50	83.09	83.30	84.10	85.57	86.36
Rural remainder (excluding Geelong, Ballarat, Bendigo)	84.81	85.54	85.58	83.64	88.79	90.13
Regional centres (Geelong, Ballarat, Bendigo)	77.20	77.46	78.04	78.18	77.95	77.23

Table A19

Licensing rates averaged across 2011-2016 for four areas of driver residence, for each age 18 to 24

	Age 18	Age 19	Age 20	Age 21	Age 22	Age 23	Age 24
Greater Melbourne	36.78	54.35	56.64	62.62	66.72	69.22	70.62
Rural (All)	49.58	64.10	91.74	96.35	96.58	96.50	94.23
Rural (excluding Geelong, Ballarat, Bendigo)	48.95	62.03	95.77	100.12	100.15	100.11	97.76
Regional centres (Geelong, Ballarat, Bendigo)	51.85	71.61	79.96	85.14	85.87	85.65	83.66

Table A20

Tests of statistical significance, comparing metro and rural by individual age (combined years 2011 to 2016)

Age 18	Does have a licence	Does not have a licence
Metro	116184	199843
Rural	61598	62662

Chi-square = 6077.47, p < .001

Age 19	Does have a licence	Does not have a licence
Metro	178812	150504
Rural	82983	46466

Chi-square = 3647.49, p < .001

Age 20	Does have a licence	Does not have a licence
Metro	212164	162755
Rural	91812	8270

Chi-square = 42352.36, p < .001

Age 21	Does have a licence	Does not have a licence
Metro	240691	143704
Rural	99017	3802

Chi-square = 43608.62, p < .001

Age 22	Does have a licence	Does not have a licence
Metro	263718	131532
Rural	102081	3670

Chi-square = 37620.80, p < .001

Age 23	Does have a licence	Does not have a licence
Metro	283193	126065
Rural	105438	3855

Chi-square = 34176.83, p < .001

Age 24	Does have a licence	Does not have a licence
Metro	295534	123294
Rural	105331	6452

Chi-square = 26751.24, p < .001



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