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Trends in young adult driver licensing rates in South Australia

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Trends in young adult driver licensing rates in South Australia

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ABSTRACT

Declines in the proportions of young adults with driver licences have been observed in several countries. This study investigated whether declines in driver licensing rates have also occurred among young adults (17-24 years) in South Australia and whether any such trends are associated with gender, location of residence (metropolitan/rural) and socio-economic status. Examination of licensing trends from 2009 to 2018 revealed a decreasing trend for young South Australians to hold a driver licence. The decline was most evident for those aged 17 to 19 years with licensing rates decreasing from 62% in 2009 to 55% in 2018. The steepest decline (from 52% to 37%) was observed among drivers aged 17. In contrast, licensing rates for those aged 20 to 24 years were stable at approximately 75% suggesting some young drivers are delaying getting a licence until their early to mid 20s. Further analyses indicated that the lowest licensing rates were among young adults living in metropolitan Adelaide or middle socio-economic ranked areas. In addition, both young males and females aged 17 to 19 and those living in the metropolitan area had declining licensing rates over time. These groups have the greatest potential to take up alternative travel modes such as active travel, public transport and ride sharing. Transport planners and policy makers need to ensure that the safety needs resulting from potentially increased take-up of alternative travel modes by young adults are met, as suggested by their declining licensing rates. Meeting these safety needs will depend on determining which travel modes are being taken up and in which circumstances young adults are using them. Trends in licensing rates and travel mode choices among young adults should continue to be monitored as the transport system continues to become more multimodal.

KEYWORDS

Licensing, young adult, travel modes, active travel

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Summary

Declines in young adult driver licensing have been noted in the United States, Canada, the United Kingdom and in a number of European countries. Some young adults delay obtaining a licence, while others forgo a licence entirely. In Australia, the Centre for Automotive Safety Research (CASR) found a decreasing trend in licensing across 2001 to 2016 in Victoria for those aged 18 to 24. This study was the first to investigate whether declines in driver licensing rates have also occurred among young adults in South Australia and whether any such trends are associated with gender, location of residence (metropolitan/rural) and socio-economic status. The findings have implications for future planning and policy around safe active travel, shared vehicle use and public transport initiatives in South Australia.

This study examined numbers of South Australian driver licences issued from 2009 to 2018 for ages 17 to 89. The percentages of licensed drivers per population by age group were then calculated using Australian Bureau of Statistics (ABS) population data to indicate not only trends in licensing over time, but any trends in *not* obtaining a licence. Licensing rates were also analysed for young adults (17-24 years) by gender, driver residence and socio-economic status.

The analyses of driver licensing rates in South Australia revealed:

- 17 to 19 year olds were the age group least likely to be licensed, followed by 20 to 24 year olds
- Licensing rates are declining over time for those aged 17 to 19 years, decreasing from 62% in 2009 to 55% in 2018 with the steepest decline (from 52% to 37%) observed among drivers aged 17
- Some 17 to 19 year olds appear to be delaying licensing until their early to mid 20s
- 17 to 19 year old males are becoming less likely to be licensed than females aged 17 to 19
- Currently, almost one half of 17 to 19 year olds living in metropolitan Adelaide do not have a licence compared to around 30% in rural South Australia
- For ages 17 to 19, licensing rates are highest among those with the highest socio-economic ranking and lowest for those of middle socio-economic ranking
- Over time, licensing rates are declining for young adults aged 17-19 years of both genders (but males to a greater extent) and for those living in the Adelaide metropolitan area.

These findings demonstrate that the lowest licensing rates are among young adults aged 17 to 19 and those living in metropolitan Adelaide or middle socio-economic ranked areas with both males and females aged 17 to 19 and those living in the metropolitan area recording declining licensing rates over time. Moreover, for as long as these young people delay getting a licence, the more likely they are to be using alternative travel modes and, if they do eventually obtain a licence, they may still maintain use of alternative travel modes. These are sustainable travel habits that can last a lifetime. Equally, the provision of safe walking and cycling infrastructure, the development of active travel networks and making shared vehicle use and public transport more attractive, all reduce the need to hold a driver's licence.

The overall implication for South Australia is to ensure that it meets the safety needs, both in terms of policies and planning, posed by the potential increased take-up of alternative travel modes by young adults, as strongly suggested by their declining licensing rates. To further facilitate and shape young adult's travel behaviour, research is needed to determine which travel modes are being adopted (and in what circumstances) and also explore the lifestyle factors, socio-economic circumstances and generational influences behind the delays or forgoing of a driver's licence, in the South Australian context. Trends in licensing rates and travel mode choices among young adults should continue to be monitored as the transport system continues to become more multimodal.

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1 Introduction

Among the priority actions in *South Australia's Road Safety Action Plan 2018-2019* is a project to increase safe active travel and greater use of public transport, along with delivering targeted education and communications programs to vulnerable road users. One underlying factor affecting the take up of active travel, shared vehicle use and public transport is the proportion of young adults who are choosing *not* to obtain a driver's licence. Young people without a licence may be delaying a decision to obtain one, while others may choose to forgo a licence entirely. Any changes in trends for young adult licensing have implications for future transportation planning, policy and road safety.

1.1 Declines in licensing rates

Declines in young adult driver licensing have been noted in the United States, Canada, the United Kingdom and in a number of European countries (e.g. Sivak & Schoettle, 2012; Delbosc & Currie, 2013). In Australia, decreases in licensing rates among young adults in Sydney have been reported (Raimond & Milthorpe, 2010). More recently, research by the Centre for Automotive Safety Research (CASR) (Bailey, Wundersitz, Raftery & Baldock, 2015; Wundersitz, Bailey & Thompson, 2017) found an 18% decrease from 2001 to 2016 for those aged 18-24 to be licensed to drive in Victoria. Currently, over a third of Victorians in this age group do not hold a driver's licence. Bailey et al. (2015) conducted a small national survey of young adults who do not drive ($n=144$). The survey revealed that many young people say they do not drive because they prefer active travel modes (for various reasons), because they dislike driving, or because public transport/being a passenger suits them better.

In their study on licensing decline among young Victorians, Wundersitz et al. (2017) also found that females across the age range 18 to 24 were *less* likely than males to be licensed (note that a provisional licence can be obtained from a minimum age of 18 in Victoria). Furthermore, young adults living in the Greater Melbourne area had a much lower level of licensing compared to rural areas, and recorded a decrease in licensing rates over time. It is possible that travel over greater distances and fewer alternative travel modes to personal car use contribute to the urban/rural disparity. It is not immediately apparent why young females were less likely to be licensed.

In the last three years, research efforts on licensing patterns among young adults have tended not only to continue documenting changes in licensing rates, but also to explore the extent to which non-licensing represents intention never to be licensed, or merely to delay obtaining one. Additionally, there is emerging research exploring various factors contributing to the changes found, particularly in terms of socio-economic factors and life stages, as well as the implications for active travel planning and supporting the safety of vulnerable road users.

For example, in an article submitted to the web-based Green Car Congress in February 2019, Sivak reported on an extension of his 2012 study with Schoettle. In this more recent work, which continued to analyse national licensing trends among young Americans using data from the Federal Highway Administration, it was found that some young adults who did not hold a driver's licence in 2007 had acquired one ten years later, yet many had not. Specifically, of those aged 20 to 24 in 2007 without a licence, 45% had acquired one by 2017, but 55% had not. Of those aged 25 to 29 without a licence in 2007, 30% had one by 2017, and hence 70% did not. In sum, many Americans aged 20 to 29 in 2007 who did not have a licence did not acquire a licence during the subsequent ten years.

In Victoria, Australia, Delbosc (2017) reported that, while the licensing rate for 20 year olds declined from 75% in 2003 to 66% in 2011, the licensing rate for 25 year olds remained steady between 78

and 81% across 2003 to 2011, with licensing rates rising still further as these drivers reached age 30. This suggests a propensity in Victoria for *delaying* rather than forgoing a licence.

However, irrespective of whether young people delay or forgo licensing, there is a combined overall effect of reduced driving exposure by this cohort. Additionally, as Delbosc (2017) has noted, there may also be young adults who have acquired a licence but do not drive or even own a car. This subgroup may also have a preference for active travel modes, shared vehicle use and public transport.

There is a wide range of other reasons people may have for delaying or forgoing a licence, apart from, or along with, any preference for active travel or other alternative travel modes. In the UK, various reasons were extensively explored by Chatterjee, Goodwin, Schwanen et al. (2018), who considered that declines in both licensing and private car use among young adults are indicative of a wide range of factors: reductions in partnering and parenting, difficulties in securing stable employment, costs of getting a licence and running a car, ubiquitous use of smart communication technologies, declining social status of owning a car, environmental concerns, and the attractiveness of alternative travel modes. Chatterjee et al. (2018) concluded that, not only is each factor in itself intrinsically complex, but the factors are likely to be collectively influential on licensing rates and car ownership in complex combinations rather than in distinct and separate ways.

In Australia, Delbosc (2017) noted that various explanations for licensing decline covered in various international studies include: declining social importance of having a car, implementation of graduated licensing schemes, and financial cost. Like Chatterjee et al. (2018), she noted there is also a tendency for the millennial generation (and the subsequent Generation Z) to delay certain life-stages compared to previous generations, such as continuing to live with parents, time-lags in obtaining full-time work, tendencies to combine further education with part time work, and delaying marriage and child rearing, all suggestive of reduced need to obtain a licence, at least for the time being. In fact, the traditional motivations for learning to drive as a teenager (e.g. independence) may no longer be applicable. If someone decides to delay obtaining a driver's licence, when a licence is eventually gained different forms of motivations are likely to apply (e.g. responsibilities towards new dependants) (Fylan & Caveney, 2018).

For many young adults, there are also likely to be underlying socio-economic factors contributing to decisions to delay or forgo licensing. Some indicators of socio-economic status have been directly associated with lower levels of licensing among young adults from a number of different countries including lower household income (Delbosc & Currie, 2014; Le Vine & Polak, 2014; Tefft, Williams & Grabowski, 2014) and lower levels of employment (Delbosc & Currie, 2014; Hjorthol, 2016; Le Vine & Polak, 2014). These factors can directly be a prime reason for not being licensed and they can also contribute indirectly through their influence on life circumstances such as continuing to live with parents or delaying child rearing (Ahmed, 2018; Chatterjee, et al., 2018). Societal circumstances such as the commonality in low-wage, uncontracted jobs (lack of tenure) also contribute to licensing delay either directly or through individual life circumstances (Chatterjee, et al., 2018).

1.2 Alternative travel modes

Adopters of multi-mode travel and intermodal transport may employ a mix of travel forms, including walking, cycling, public transport, shared travel (e.g. ride share such as Uber/Ola/Lyft, shared private vehicle use as a passenger), instead of, or in combination with, driving oneself. The effect of an increasing trend for multi-modal travel is that it reduces dependence on driving in both frequency of driving and distances driven (in other words, reduced driving exposure). In addition to the clear environmental and health benefits, the extent to which walking and cycling feature in multi-modal travel has implications for transport policies and planning to improve the safety of pedestrians and

cyclists as vulnerable road users. The extent to which multi-modal travel involves public transport and shared vehicle use has implications for making such travel more attractive as well as implications for supporting shared car use.

If, as the literature is indicating, more young adults are delaying or forgoing driver licensing and taking up multi-modal travel involving active travel modes such as walking or cycling and/or other alternative travel modes, this provides a rationale for not only strengthening the programs and communication activities focusing on safe active travel but also for increased provision of infrastructure that supports safer walking and cycling. Similarly, if young adults, with or without a licence, show a preference for using public transport and/or sharing private vehicles, then making these travel modes more attractive may bring reduced on-road risk in terms of crashes if those young people themselves are then not driving vehicles.

1.3 The current project

As stated, declining licensing rates among young Australian adults have been found in Sydney (Raimond & Milthorpe, 2010) and in Victoria (Bailey et al., 2015; Wundersitz et al., 2017). However, no previous studies, of which we are aware, have examined the extent to which such declines may exist in South Australia. Therefore, this project examined the ages at which young adults obtained a driver's licence in South Australia over the last decade with the aim of extending the current Australian knowledge base of trends in young adult travel behaviour. The objectives of this project were to:

- Investigate driver licensing trends in South Australia since 2009 for those aged 17-24 years, in comparison to other age groups.
- Examine trends in young driver licensing in relation to gender, location of residence and socio-economic status.

In this report, "licences" and "licensing" refer to both provisional and full (unrestricted) licences, but exclude learner's permit drivers. The term "unlicensed" is avoided as it pertains to people who drive without ever gaining a licence, or who drive while on a suspended/disqualified licence. The focus of this project is on young people who decide to never drive or be licensed, or who delay a decision to obtain a licence.

Additionally, it should be noted that, in September 2010, among a number of enhancements to its Graduated Licensing Scheme (GLS) for novice drivers, South Australia increased the minimum required time on a learner's permit from 6 to 12 months for drivers under age 25. This effectively made the minimum licensing age rise from 16½ to 17 for those drivers.

Finally, the term 'alternative travel modes' collectively refers to a wide variety of ways of travelling other than by driving oneself. These include:

- Active travel modes (cycling and walking)
- Wheeled devices such as scooters, skateboards, e-scooters (and their hire schemes)
- Travelling as a passenger in a vehicle
- Shared vehicle use (e.g. Uber/Ola/Lyft, shared vehicle plans)
- Public transport (including taxis).

2 Methodology

This study examined numbers of South Australian licences issued over a decade to gauge the extent of any changes in licensing, especially among young adults. The licensing data were obtained from TRUMPS, the vehicle registration and driver licensing database of the South Australian Department for Infrastructure and Transport (DIT) (which at the time of the study was the Department of Planning, Transport and Infrastructure). The data sought were the total numbers of licence holders for individual ages 17 to 89 years, for each year as at 30 June in the period 2009 to 2018. The licence numbers counted distinct driver licence 'clients', not any multiple classes of licence' (e.g. CAR, BIKE, Light Rigid) that a person may hold. In other words, each client was only counted once.

Overall driver licensing and non-licensing rates

Driver licensing rates (percentages) per age group were calculated using Australian Bureau of Statistics (ABS, 2018a) population data, based on a census at 30 June, for each year within the period 2009 to 2018. Percentages of the population at various ages who were and those who were *not* licensed were also calculated to indicate not only trends in licensing between 2009 and 2018, but any trends in *not* obtaining a licence over that period.

New licence holders

It was also 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 2010 to 2018. This involved taking the total number of all licence holders aged 18 in 2010 and subtracting the number of all licence holders aged 17 in 2009 to produce the number of *new* licence holders aged 18 in 2010. (The data tables for the new licences analysis cover the period 2010-2018 rather than 2009-2018). Similarly, to find out how many new licence holders there were aged 18 in 2011, the number of licence holders aged 17 in 2010 was subtracted from the number of licence holders aged 18 in 2011. This process was successively repeated for 18 years olds up to 2018, and then for individual ages up to 24. This approach has previously been used to determine numbers of new licence holders (Bailey et al., 2015; Wundersitz et al. 2017).

Gender analyses

Licence rates for young adults by gender were calculated using licence data and the ABS population data for the years 2009 to 2018. The total numbers of drivers in the gender analyses do not match the total numbers of driver's licences held because cases where non-binary genders were declared, or where a gender was undeclared, were excluded. Such instances occurred mainly from 2015 when a 'gender X' option was made available on DIT's licence application forms. In any one year, cases of undeclared gender, or gender X, number less than 0.001% of all driver's licences.

Location of driver's residence

Both the available licensing data and the ABS population data included breakdowns by postcode of residence. The proportions of the young adult population (age groups 17-19 and 20-24) who held a driver's licence were then analysed by remoteness of residence for the last five years of available data (2013-2017). Remoteness of residence was defined using the Australian Statistical Geography Standard (ASGS) which categorises five areas of remoteness (RA): major city, inner regional, outer regional, remote, and very remote. Drivers' RA was determined by matching their postcode with the corresponding RA using ABS concordance grid CG_POSTCODE_2017_RA_2016. Estimated population data were determined by age group and RA by matching the SA2 codes in ABS *Regional population by age and sex, Australia* (2018b, Table 3) with postcodes. (See Appendix A for the full

method for linking and calculating population data by geographic area.) Within this study, the RA category 'major city' was defined as urban/metropolitan while the remaining four categories were defined as rural.

Socio-economic status

Licensing rates by socio-economic status (SES) were calculated for young adults over the last five years for which data were available (2013-2017). SES was based on the ABS Socio-Economic Indexes for Areas (SEIFA) using the Index of Relative Advantage and Disadvantage (IRSAD) (ABS, 2016). This measure ranks areas in Australia according to relative socio-economic advantage and disadvantage using a weighted average of selected variables. The IRSAD index is divided into deciles (i.e. increments of 10%) such that a ranking of 1 represents the lowest 10% SES decile (greatest disadvantage) while a ranking of 10 represents the highest 10% decile (greatest advantage). The ABS offers two decile rankings: one in which deciles are ranked nationally and the other in which deciles are ranked within each state. Rankings for within South Australia were used. The deciles were then arranged as quintiles (increments of 20%), by grouping each of the IRSAD deciles into groups of two (i.e., quintile ranking 1 (lowest SES) = deciles 1 & 2; quintile ranking 2 = deciles 3 & 4; quintile ranking 3 = deciles 5 & 6; quintile ranking 4 = deciles 7 & 8; and finally quintile 5 (highest SES) = deciles 9 & 10). Note that SEIFA are assigned to geographical areas so they represent the overall SES of the population living in the area and not necessarily the circumstances of each individual in that location.

The estimated population was determined by age group and IRSAD quintile by using the estimated resident population for each postcode region as per the method used to link population data for the remoteness areas analysis. A more detailed description of the data linking is provided in Appendix A.

3 Population-based driver licensing rates in South Australia

This chapter provides results for the analyses of the population based licensing rates in South Australia: overall licensing and non-licensing rates for all ages, and young adult licensing rates by gender, location of residence and socio-economic rankings. Data tables referred to in this section can be found in Appendix B.

3.1 Overall licensing and non-licensing rates

Overall, the licensing rate for young adults aged 17 to 24 decreased by 3% from 68.5% in 2009 to 66.7% in 2018 (see Table 3.1).

Table 3.1
Percentages of SA population with licences, average for age 17 to 24

Age	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
17-24	68.5%	69.5%	71.3%	69.3%	68.9%	68.5%	67.8%	67.3%	67.2%	66.7%

However, within this broad group of young drivers, different trends may be evident among the youngest (17-19 years) compared to those who are in their 20s (20-24 years). These age groups are explored separately below in greater detail.

3.1.1 Licensing rates for ages 17 to 19 years

Licensing rates, expressed as a percentage of the South Australian population, for individual ages 17 to 19 years are shown in Table 3.2 and Figure 3.1. In 2009, 52.3% of 17 year olds, 64.4% of 18 year olds and 65.7% of 19 year olds were licensed to drive. In the subsequent years to 2011, these percentages rose to peak licensing levels for the time period being studied. A plausible explanation for this peaking is the introduction in 2010 of the graduated licensing system (GLS) requirement for drivers to spend 12 months on a learner's permit before progressing to a provisional licence (see Section 1.3). For example, new learner's permit drivers aged 17 in 2010 would have had to spend 12 months on their permit, resulting in them gaining a provisional licence in 2011. Prior to 2010, a learner's permit could be obtained at age 16 and, with a required six month period on the permit, a provisional licence could be obtained from age 16½. It appears that 16 year olds in 2008 and 2009 had anticipated the introduction of the longer learner's permit period by gaining a provisional licence before the change took effect. An additional data query revealed that, in 2008 and 2009, 60% and 63% (respectively) of 16 year olds held a provisional licence or learner's permit. In 2010, the rate had risen to 67%. Similarly, as seen in Table 3.2, increasing numbers of those aged 17, 18 and 19 years sought to gain a provisional licence in anticipation of the rule change.

Following the licensing peaks, from 2012, a substantial decline in licensing at age 17 is evident. Moreover, the peak in licensing at age 17 in 2011 had a flow-on effect when this cohort of drivers turned 18 in 2011 and 2012, with a licensing peak in the order of 68-69%. Successive follow-on peaking effects can be observed for 19 year olds in 2013.

While there has been some variation during this time period, overall licensing rates have declined for young adults aged 17 and 18. Licensing rates for 17 year olds have declined (by 29%) from 52.3% in 2009 to 36.9% in 2018, the lowest rate in the last decade. The rate for 18 year olds has decreased to a lesser extent: from 64.4% in 2009 to 58.8% in 2018. Licensing rates for those aged 19 remained relatively stable over this time frame, suggesting that the licensing declines experienced in this age group are confined to the youngest ages.

Table 3.2
 Percentages of SA population with licences at ages 17 to 19

Age	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
17	52.3%	55.2%	57.1%	42.5%	42.1%	42.2%	39.7%	38.3%	38.9%	36.9%
18	64.4%	66.5%	69.2%	68.4%	62.5%	62.0%	60.6%	60.6%	59.4%	58.8%
19	65.7%	69.0%	72.6%	71.4%	71.6%	68.0%	66.8%	66.3%	66.7%	66.3%

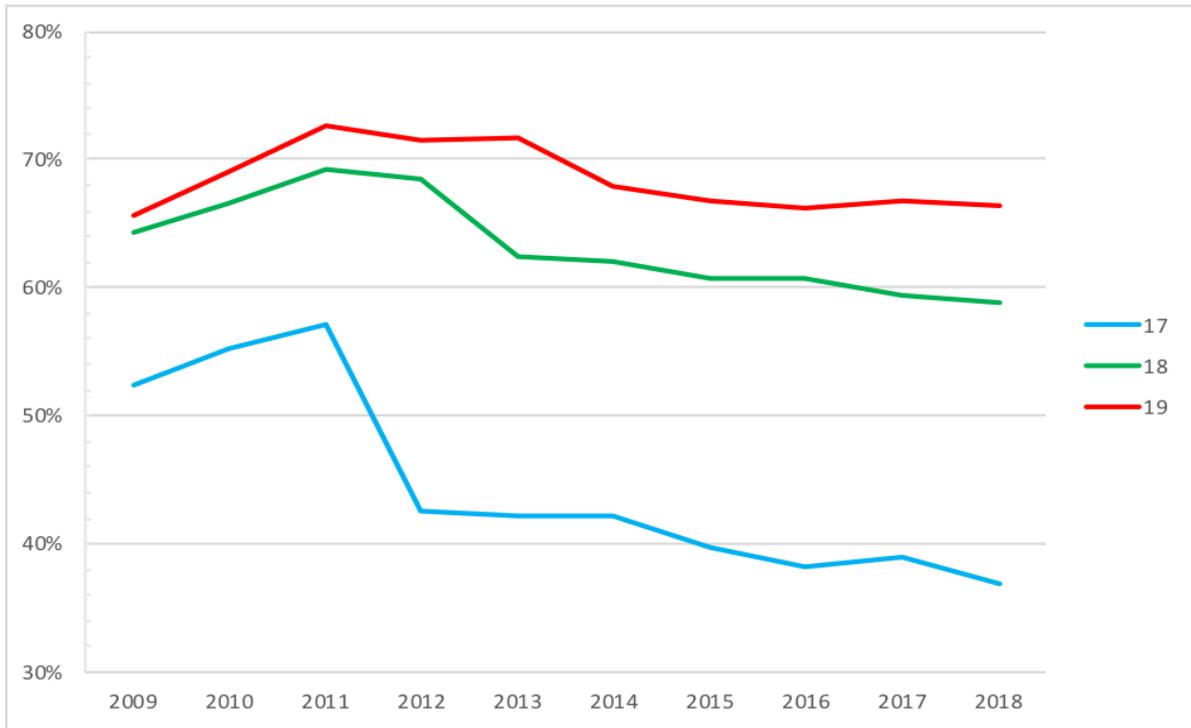


Figure 3.1
 Percentages of SA population with licences at ages 17, 18 and 19

3.1.2 Licensing rates for ages 20 to 24 years

Table 3.3 and Figure 3.2 display the licensing rates for individual ages 20 to 24 years. Although the licensing rates for ages 20, 21, 22 and 23 vary substantially from 2009 to 2018, they share a similar trend pattern. The rate for 20 year olds in 2009 is 68.8%, rising to a peak of 73.7% in 2014, and dropping to 70.3% in 2018. The rate for 21 year olds peaked in 2015, the rate for 22 year olds peaked in 2016, and the rate for 23 year olds peaked in 2017. This successive peaking is likely to reflect the follow-on effects from the licensing changes in 2010 that saw increasing numbers of ages 16 and 17 seeking to gain licences, as earlier discussed. The rate for 24 year olds, however, is fairly steady over the ten-year period, fluctuating between 76.8% and 78.2%.

Table 3.3
Percentages of SA population with licences, ages 20 to 24

Age	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
20	68.8%	69.0%	72.6%	73.5%	73.1%	73.7%	70.6%	70.6%	70.7%	70.3%
21	71.4%	71.3%	71.6%	73.9%	75.2%	74.4%	75.3%	72.4%	73.0%	73.4%
22	73.0%	73.6%	73.9%	72.9%	75.2%	76.4%	75.6%	76.4%	74.4%	74.4%
23	75.3%	74.6%	75.9%	75.2%	74.5%	75.8%	76.9%	76.1%	77.0%	75.2%
24	77.4%	76.7%	77.1%	76.8%	77.4%	75.7%	76.8%	77.5%	77.6%	78.2%

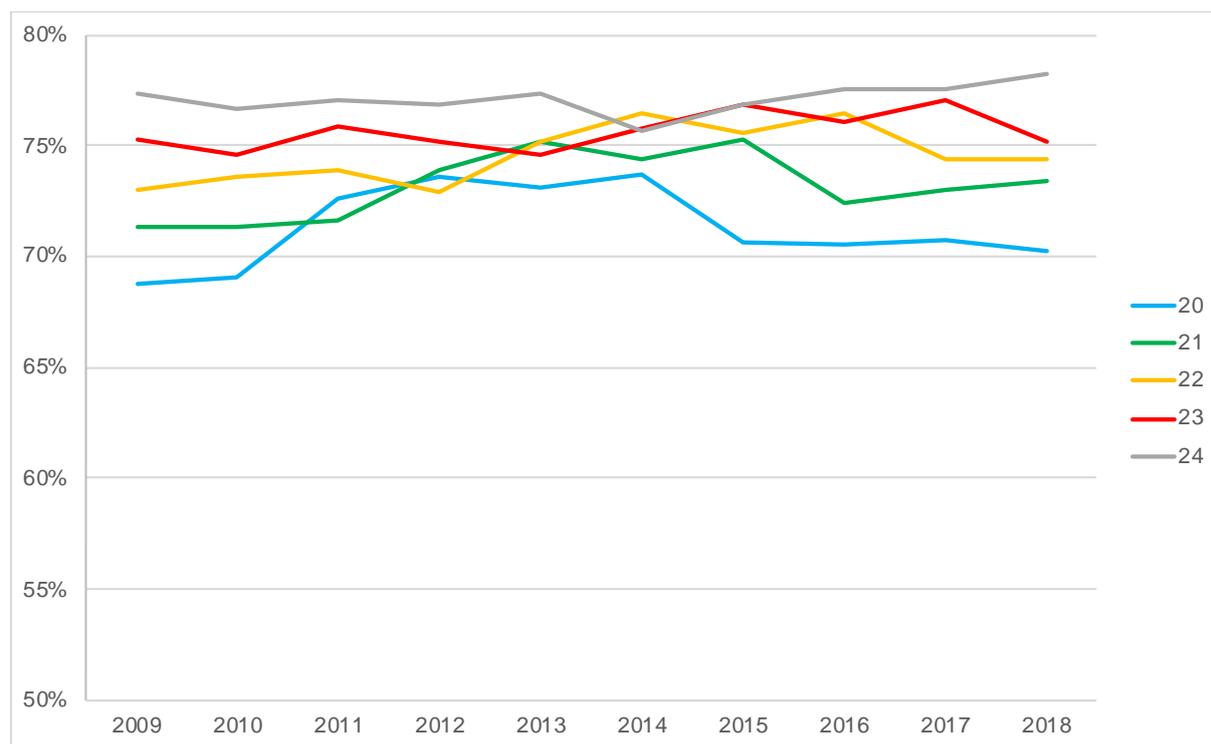


Figure 3.2
Percentages of SA population with licences, ages 20 to 24

3.1.3 Licensing rates for ages 17 to 89 years

To determine if the licensing trends found for young adults are comparable to older age groups, the licensing rates for drivers aged 17 to 89 years and over from 2009 to 2018 are presented by age group in Figure 3.3 (see Appendix B.1 for data tables). Those aged 30 to 69 years have the highest licensing rates, between 90 and 95%, and these rates were relatively consistent across the years from 2009 to 2018. However, the rates among drivers aged 70 to 89 years, and to a lesser extent 60 to 69 years, have been increasing over time, which might reflect an increasing propensity for older drivers to hold on to their licences for longer. By contrast, the rates for the 17 to 19 and 20 to 24 age groups are much lower than those for adults aged from 30 to 69. From 2011, a decline in licensing rates for those aged 17 to 19 is clearly evident.

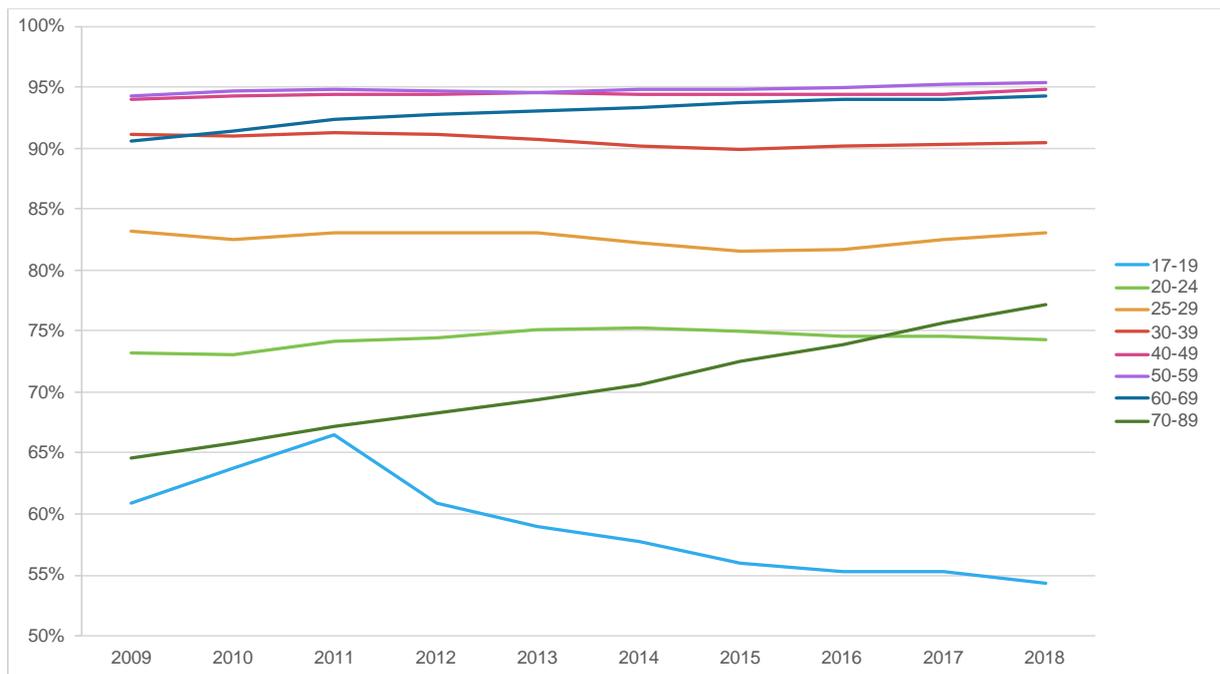


Figure 3.3
Percentages of SA population with licences, by age groups 17 to 89 years

The overall licensing rates (Figure 3.3) indicated some distinct licensing trends among specific age groups over the period 2009 to 2018 so these are summarised in Figure 3.4 (see Appendix B.2) for easy interpretation. It can be readily seen that the licensing rates for ages 17 to 19 are the lowest of the three age groups, at between 61% and 66% and clearly decreasing over time (10.7% decrease from 2009 to 2018). The highest rates of licensing (90% to 91%) occurred among ages 25 to 69 and these remained relatively stable over time. The licensing rates for ages 20 to 24 (73% to 75%) are somewhat higher than the youngest drivers (aged 17-19) and remained relatively consistent over this period. In stark contrast to the youngest age group, the licensing rate for the oldest age group (aged 70-89 years) increased from 65% in 2009 to 77% in 2018. Of interest, since 2017 a greater proportion of people aged 70 to 89 were licensed than people aged 20 to 24.

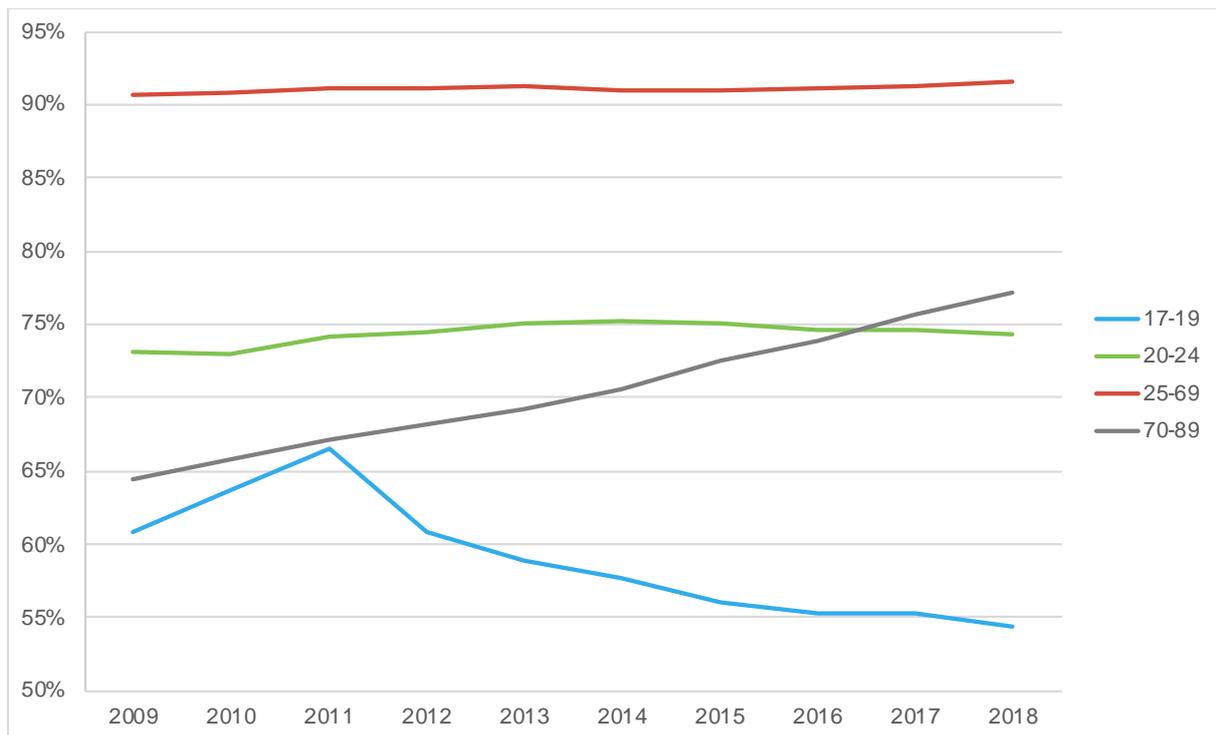


Figure 3.4
Percentages of SA population with licences, across specific age groups

3.1.4 New licence holders

As outlined in Chapter 2, 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 2010 to 2018. It can be seen in Figure 3.5 (see Appendix B.3 for raw numbers) that there are relatively high numbers of young adults who first gain a licence at age 18. The substantial increase in numbers of 18 year olds gaining a licence between 2012 and 2013 is likely due to the flow-on effect of younger adults seeking to gain a licence before the 2010 changes came into effect. By comparison, ages 19 to 24 are much less likely than 18 year olds to gain a licence for the first time.

Despite this, the average *new* licence trend (dashed line) across 2010 to 2018 is one of an overall slight increase, at least since 2012. If more people at ages 21 to 24 are gaining licences at older ages, this suggests a trend of some people aged 17 to 19 *delaying* for a few years a decision to obtain a licence.

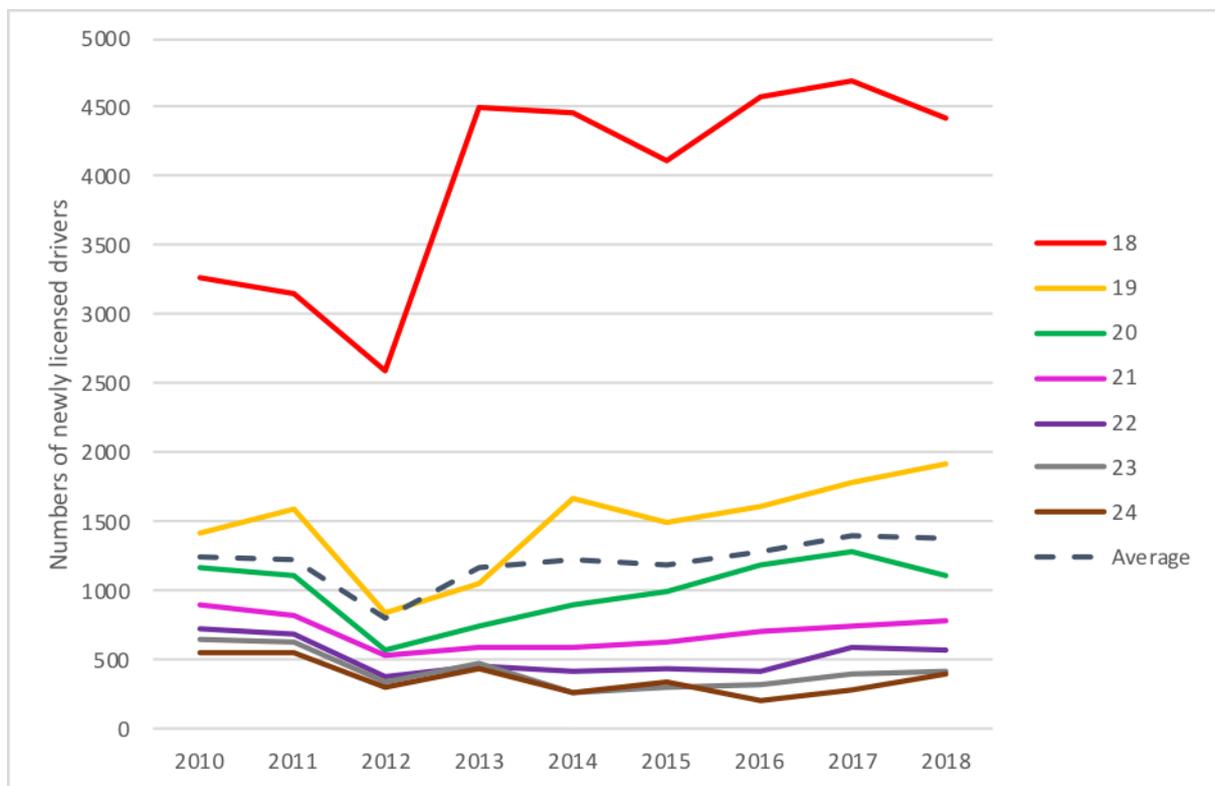


Figure 3.5
Numbers of new licence holders aged 18 to 24

3.1.5 Summary of overall licensing rates

The analyses found that, across 2009 to 2018 in South Australia:

- 17 to 19 year olds were the age group least likely to be licensed
- 25 to 69 year olds were most likely to be licensed
- The licensing rates of 17 and 18 year olds have declined; with the rates in 2018 being *lower* than in 2009
- 17 year olds experienced the steepest decline in licensing rates, with a 29% reduction from 2009 to 2018
- It is plausible that some 17 to 19 year olds are delaying getting a licence until their early to mid 20s
- The licensing rates of ages 25 to 69 tended to be stable over the ten year period while rates for ages 70 to 89 increased

3.1.6 Non-licensing rates of young adults

In 2018 in South Australia, approximately 63% of 17 year olds, 41% of 18 year olds and 34% of 19 year olds were *not* licensed to drive. Of those aged 20 to 24, slightly *fewer* than 20% were not licensed in 2018.

By comparison, among 25 to 69 year olds, between 4% and 14% were not licensed to drive in 2018. In fact, despite some year to year fluctuation across 2009 to 2018, there has been a fairly consistent trend over those years for drivers under age 25 to be more likely to *not* hold a licence than drivers aged 25 to 69.

Some further information about this trend of increasing non-licensure was gleaned from exploring how many young adults chose to obtain a licence from ages 18 to 24 rather than at age 17. Figure 3.5 suggests a gradually increasing trend since 2012 for young people to delay obtaining a licence until their mid to late 20s. The implications for alternative travel modes of increasing proportions of young adults choosing to not be licensed, or to delay obtaining a licence, are discussed in Chapter 4.

3.2 Young adult licensing rates by gender

Licensing rates for young adult age groups 17 to 19 and 20 to 24 were calculated by gender across 2009 to 2018. A graphical summary of the analysis can be seen in Figure 3.6 (see Appendix B.4 and B.5 for data tables). It can be seen that each of the age groups 17 to 19 and 20 to 24 has roughly similar proportions of females to males. However, females aged 20 to 24 were slightly less likely to be licensed than males. For 17 to 19 year olds, there has been a substantial decline in licensing rates since 2011, with the male rate declining more steeply than the female rate. Of interest, in this age group, prior to 2015, males were slightly *more* likely to be licensed than females, but from 2015, males were slightly *less* likely to be licensed.

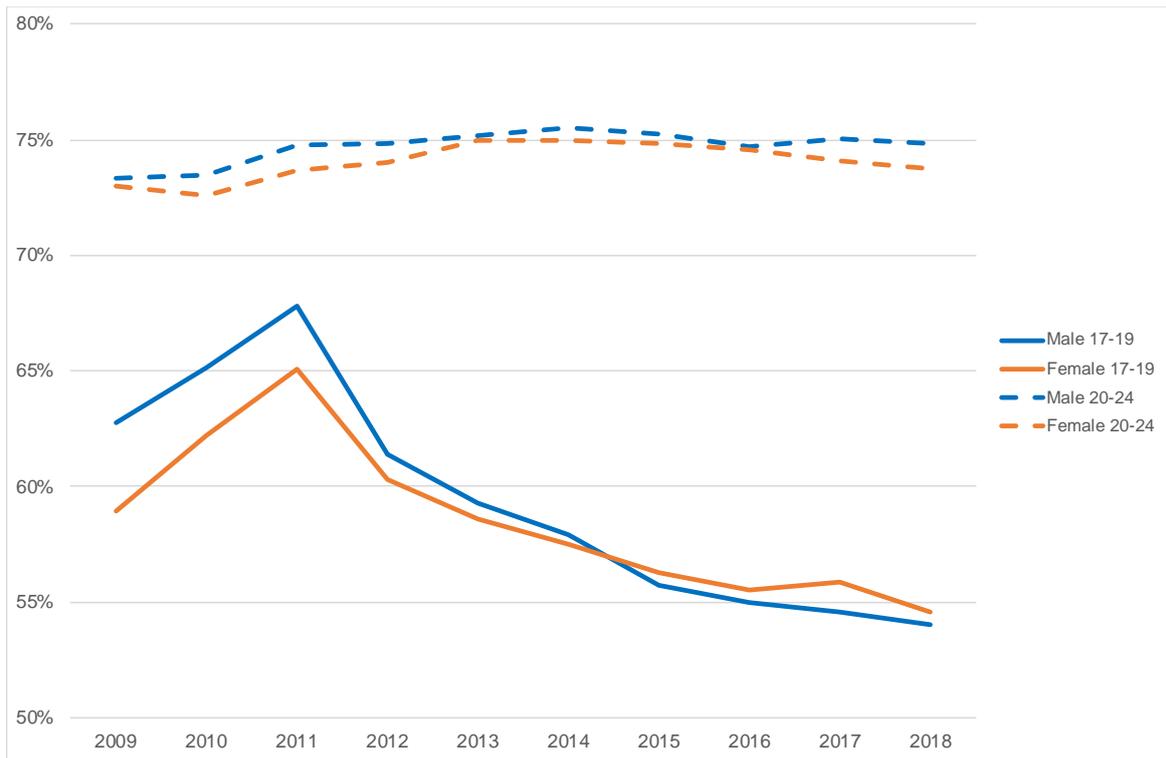


Figure 3.6
Licensing rates by gender and age group (17 to 19, and 20 to 24)

Recent trends in licensing rates by gender for the two age groups, averaged across the last five years (2014 to 2018), are contrasted in Figure 3.7 (see Appendix B.6). For young adults aged 17-19, licensing rates did not differ statistically significantly by gender but among those aged 20-24, licensing rates were statistically significantly higher among males than females (see Appendix B.7).

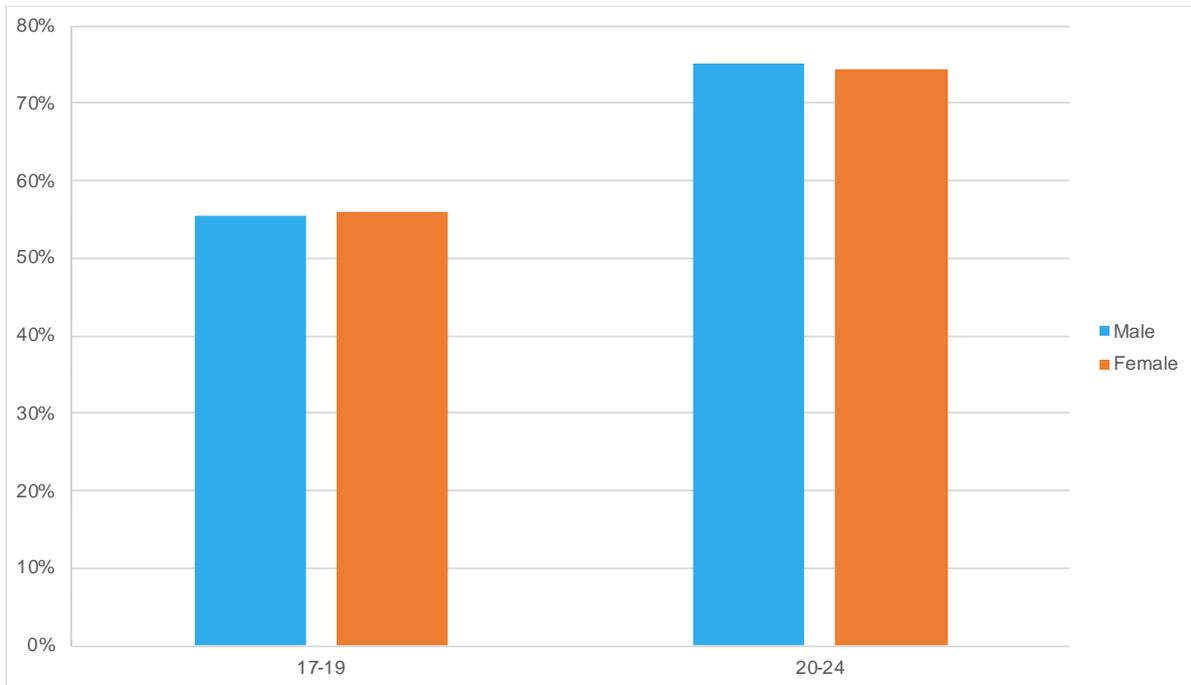


Figure 3.7
Licensing rates by gender and age group, average 2014 to 2018

Figure 3.8 (Appendix B.8) shows the licensing rate by gender in greater detail for each individual age from 17 to 24, averaged from 2014 to 2018. From age 17 to 19, males were slightly less likely to be licensed while from age 21 to 24, females were slightly less likely to be licensed. However, these gender differences were not statistically significant apart from at age 24 (see Appendix B.9 for statistical tests).

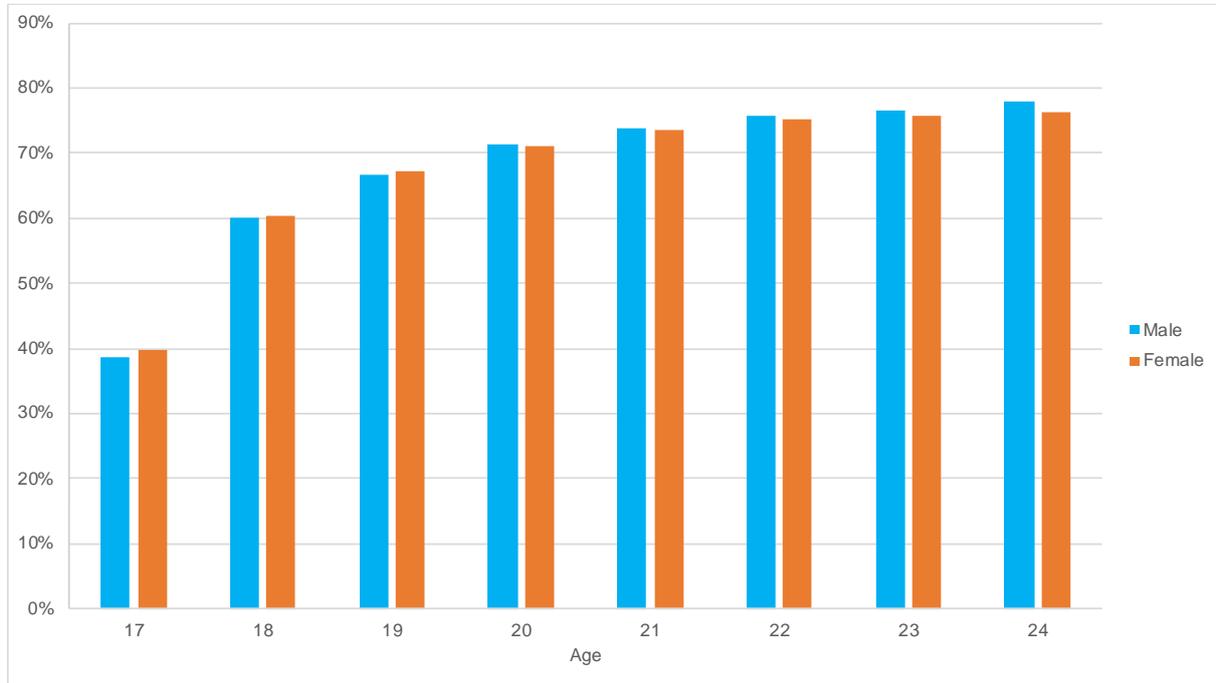


Figure 3.8
Male and female licensing rates for individual ages 17-24, average 2014 to 2018

In order to examine this further, the next two figures show the gender proportions of newly licensed drivers who gain their licences in their early to mid 20s rather than at ages 17 to 19. Figure 3.9 shows the raw numbers (not rates) of female new licence holders at ages 18 to 24 (see Appendix B.10 for raw numbers). While there has been some fluctuation in the numbers of female new licence holders aged 18 and 19, on average there has been minimal fluctuation in the average trend across ages 18 to 24, especially since 2013.

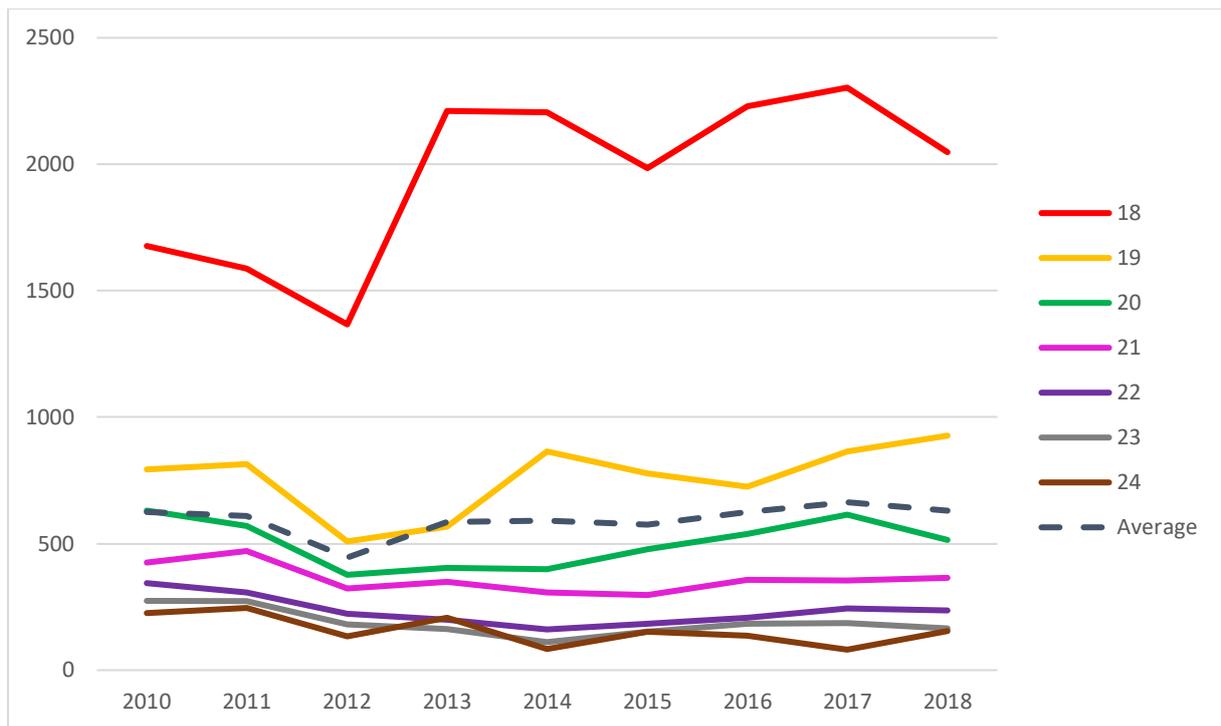


Figure 3.9
Female new licence holders, ages 18 to 24

The numbers of male new licence holders for ages 18 to 24 can be seen in Figure 3.10 (see Appendix B.11 for raw numbers). Similar to the pattern for female new licence holders, the numbers of male new licence holders at ages 18 and 19 have fluctuated across 2010 to 2018. However, the average trend since 2013, and the trend lines for individual ages 20 to 22 particularly, suggest there has been an increase in numbers of male newly licensed drivers since 2013. It is plausible that the steeper decline of males aged 17 to 19 seen in Figure 3.6 may be indicative of a propensity for this group to delay obtaining a licence till their early to mid 20s.

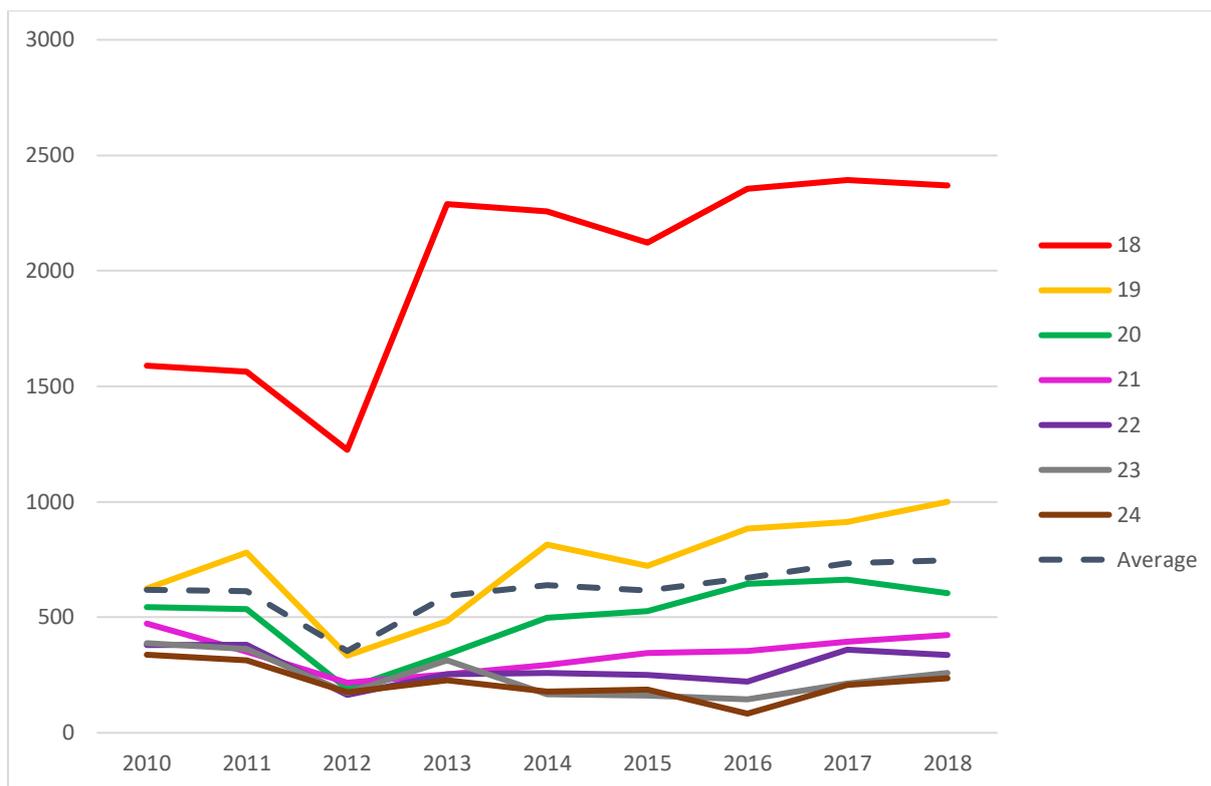


Figure 3.10
Male new licence holders, ages 18 to 24

3.3 Young adult licensing rates by location of driver's residence

Figure 3.11 (see Appendix B.12) displays the proportions of the resident population with a licence for those aged 17 to 19 and 20 to 24, in metropolitan and rural areas, and for each year in the last five years, 2013 to 2017. While there appears to be a gradual decline in licensing rates from 2013 to 2017 among 17 to 19 year olds living in metropolitan Adelaide, the rate has remained somewhat stable for those in rural South Australia. This pattern is also observed for 20 to 24 year olds in both regions.

The average proportion of licence holders by area of residence across 2013 to 2017 for age groups 17 to 19 and 20 to 24 are shown in Figure 3.12 (see Appendix B.13). For both age groups, a lower proportion of young people living in metropolitan areas are licensed compared to those in rural areas (statistically significant for both age groups, see Appendix B.14).

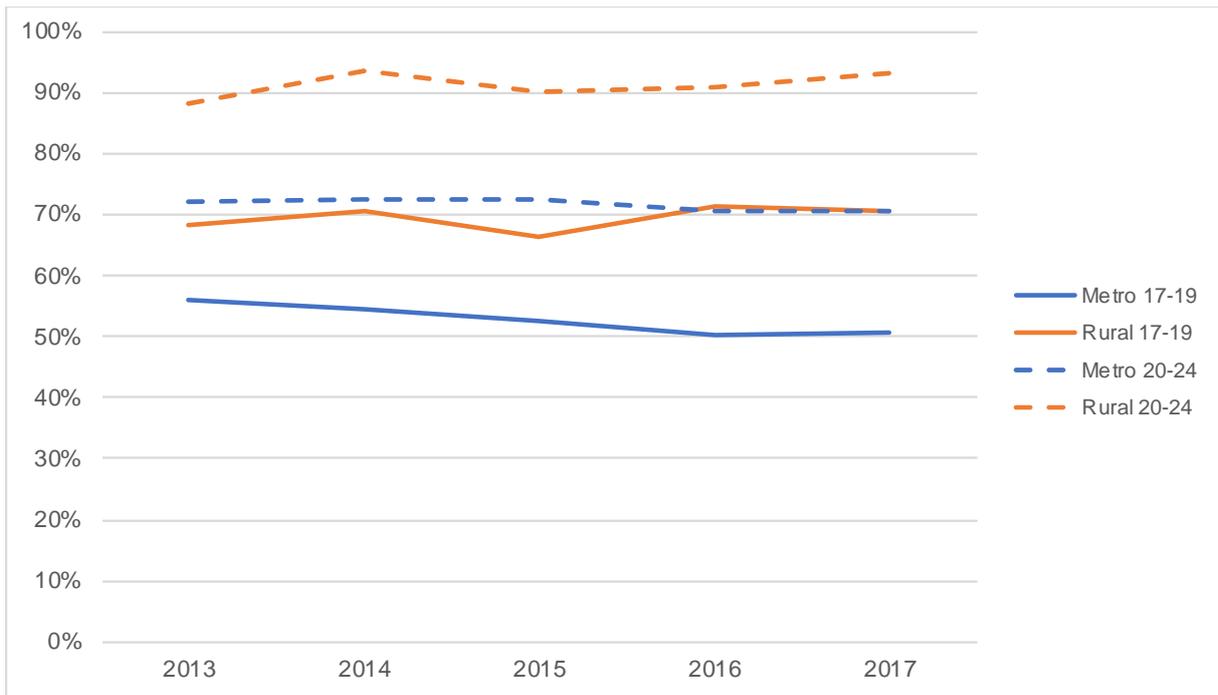


Figure 3.11
Licensing rates by area of residence and age group (17 to 19 and 20 to 24)

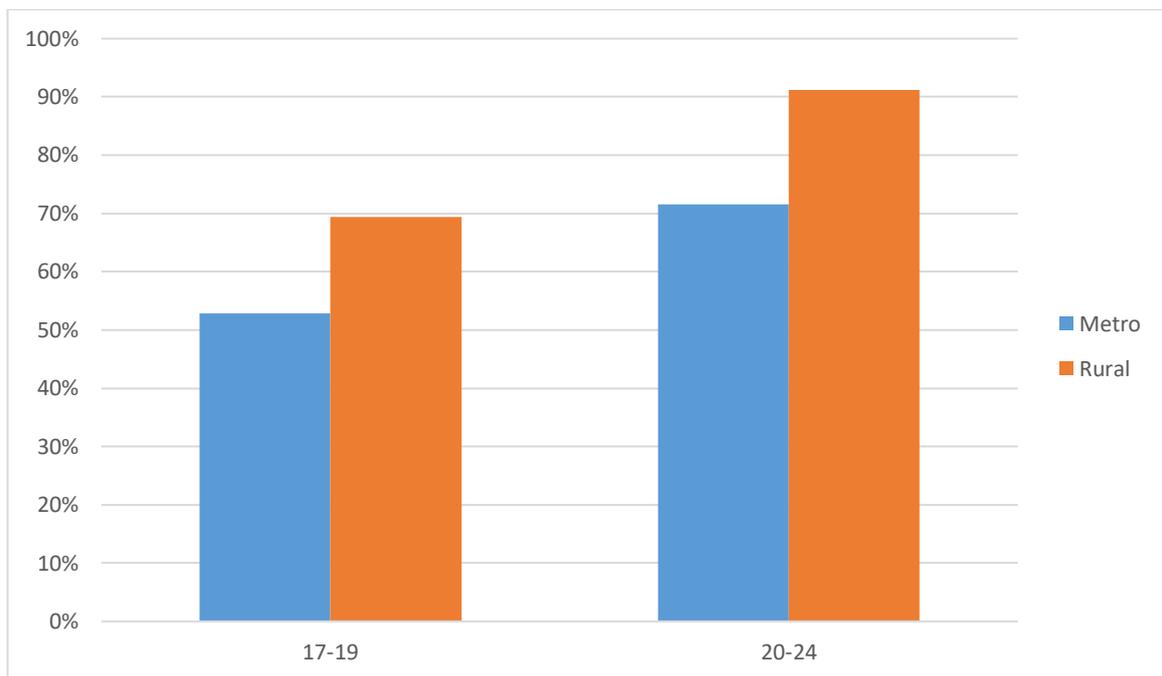


Figure 3.12
Licensing rates by area of residence, average 2013 to 2017

3.4 Young adult licensing rates by socio-economic rankings

The proportion of the South Australian resident population with a licence, based on the SEIFA quintile for their area of residence are shown in Figures 3.13 and 3.14 (see Appendix B.15 and B.16) for those aged 17 to 19 and 20 to 24 respectively. No clear trends for licensing rates by socio-economic rankings could be discerned from the data for either age group over time. For example, the licensing rates for quintiles 1 and 2 (representing the lowest socio-economic status), fluctuate in both age groups across the period 2013 to 2017. Likewise, for quintiles 4 and 5 (highest socio-economic status), there are similar fluctuations in licensing rates over time for both age groups. This does not mean that socio-economic status has not been influential on the licensing patterns found so far, merely that the analyses conducted do not suggest such a relationship.

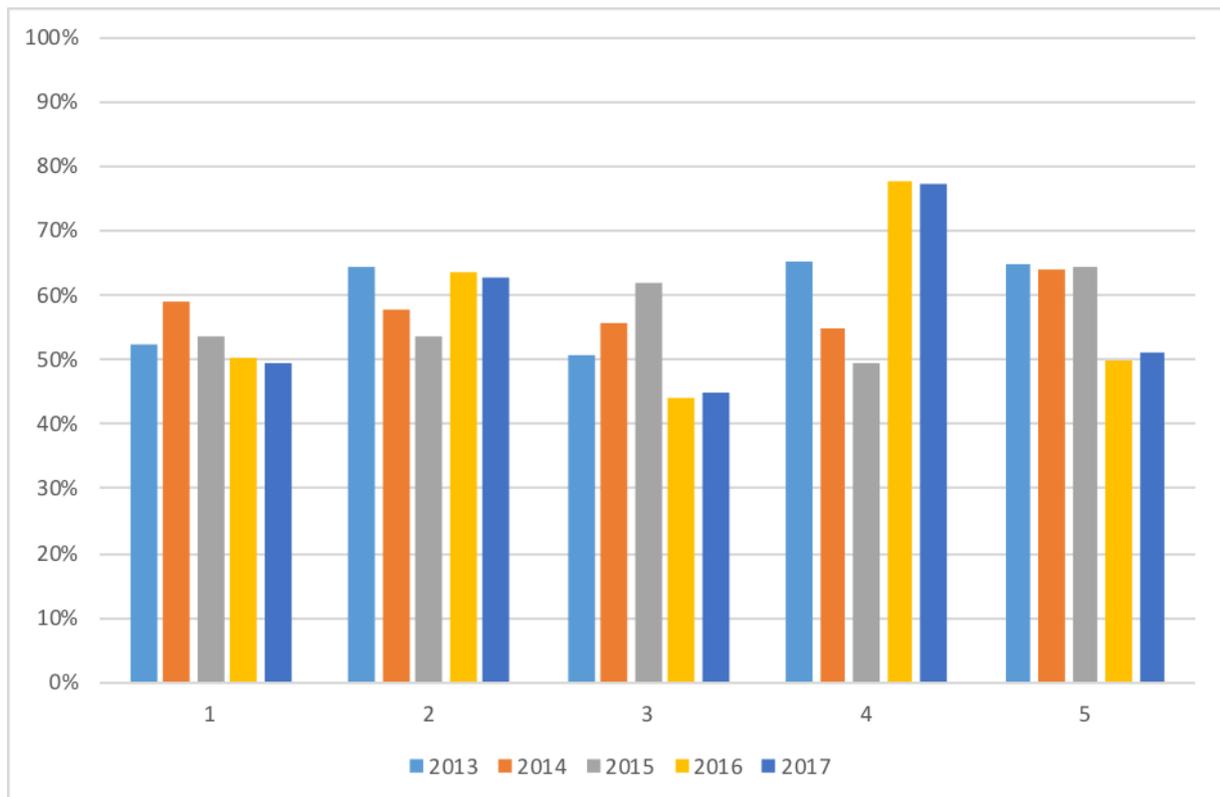


Figure 3.13
Licensing rates for 17-19 year olds based on SEIFA quintile (1=lowest SES, 5=highest SES)

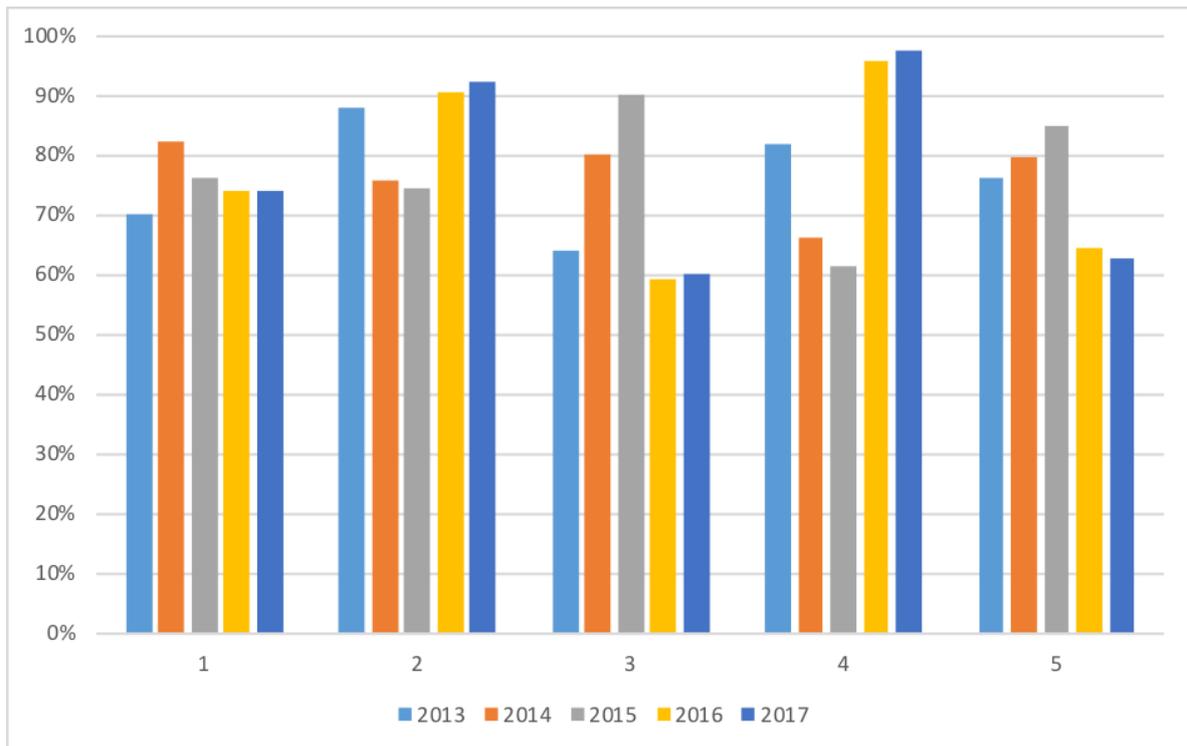


Figure 3.14
Licensing rates for 20-24 year olds based on SEIFA quintile (1=lowest SES, 5=highest SES)

To simplify the data in the previous figures, Figure 3.15 (see Appendix B.17) shows the *average* of the proportions of licence holders for three SES groups, Low (SEIFA quintiles 1 and 2), Middle (quintile 3), and High (quintiles 4 and 5) across 2013 to 2017. Among young adults aged 17-19 years, there are statistically significant differences in licensing rates with the highest rates among those with high socio-economic ranking (see Appendix B.18). For young adults aged 20-24 years, there are also statistically significant differences but it is those with a low socio-economic ranking who have the highest licensing rates. Within both age groups, middle socio-economic status is associated with the lowest licensing rates (51% at 17-19 years, 71% at 20-24 years).

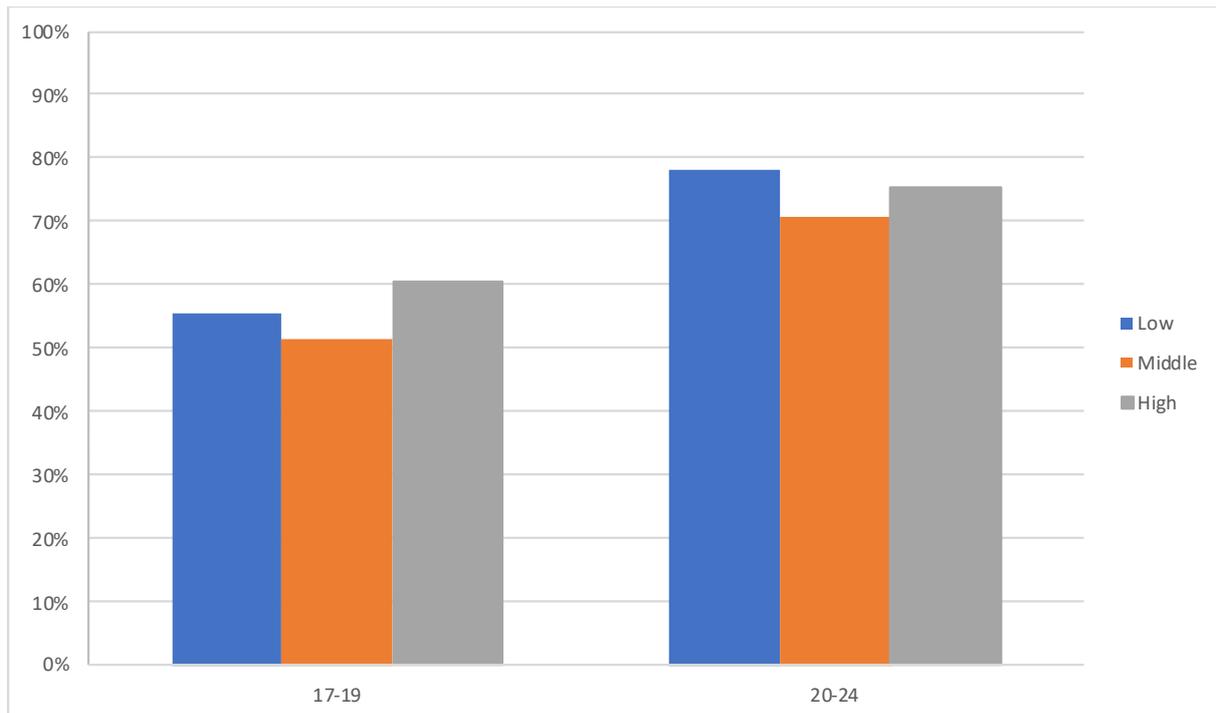


Figure 3.15
Licensing rates for low, middle, and high SES groups, average 2013-2017

3.5 Summary of licensing trends among young adults in South Australia

The analyses of driver licensing trends among young adults in South Australia showed that:

- 17 to 19 year olds were the age group least likely to be licensed, followed by 20 to 24 year olds
- In 2018, 37% of 17 year olds were licensed (conversely 63% were not licensed), a substantial (29%) decrease from 52% in 2009
- Some 17 to 19 year olds appear to be delaying licensing until their early to mid 20s
- 17 to 19 year old males are becoming less likely to be licensed than females aged 17 to 19
- Currently, almost one half of 17 to 19 year olds living in metropolitan Adelaide do not have a licence compared to around 30% in rural South Australia
- For ages 17 to 19, licensing rates are highest among those with the highest socio-economic status but for ages 20 to 24 the highest licensing rates are for those with the lowest socio-economic status. Those with middle socio-economic status had the lowest licensing rates
- Licensing rates are declining over time for those aged 17-19 years, for both genders (but males to a greater extent) and for those living in the Adelaide metropolitan area

4 Discussion

In this chapter, the results of the South Australian driver licensing trends relevant to young adults are discussed, including in relation to trends reported in Victoria. This is followed by a consideration of the implications of the findings for the take up of active travel and other alternative travel modes in South Australia. Finally, some possibilities for future research into this topic are discussed.

4.1 Discussion of South Australian driver licensing trends

Investigation of licensing trends from 2009 to 2018 revealed a decreasing trend for young South Australians to hold a driver licence. On average, for those aged 17 to 24 years licensing rates have decreased from 69% in 2009 to 66% in 2018. This decline was most evident for those aged 17 to 19 years with licensing rates dropping by 11% from an average of 62% in 2009 to 55% in 2018. The steepest decline (from 52% to 37%) was observed among drivers aged 17. In contrast, licensing rates for those aged 20 to 24 years were stable at approximately 75%.

Victoria has also experienced a licensing decline, with licensing rates among 18 to 24 year olds dropping from 71% in 2009 to 63% in 2016. The rates for every individual age between 18 and 24 showed a decline over that period (Wundersitz, et al., 2017). The main difference between the two states is that licensing rates among 20 to 24 year olds in South Australia remained fairly stable, whereas the rates for that age group in Victoria declined. This suggests a greater propensity for South Australians aged 20 to 24 to choose driving as their predominant travel mode. Moreover, there was a slight increase since 2013 for more newly licensed drivers at ages 20 to 24, which suggests that some 17 to 19 year olds are delaying getting a licence till their early to mid 20s. A similar trend of licence delaying was suggested by the Victorian data (Wundersitz, et al., 2017).

Despite this, in both South Australia and Victoria, young adults aged 17 or 18 to 24 are still less likely to hold a driver's licence than adults aged 25 to 69. In both states, between 86% and 96% of adults aged 25 to 69 were licensed to drive. This is suggestive of a consistent trend for young adults to be less reliant on their own motorised transport than older age groups.

Analyses by gender in South Australia found stable rates for females and males aged 20 to 24 but declining licensing rates for ages 17 to 19, with males exhibiting a steeper decline than females. The analysis of newly licensed drivers by gender suggests that, since 2013, males have been slightly more likely than females to delay getting a licence until their 20s. Within the 20 to 24 age group, over the last five years licensing rates were, on average, higher for males than females. For those aged 17 to 19, from the year 2015 male rates have been slightly lower than female rates. These findings are in contrast to Victoria (Wundersitz et al., 2017) and the United States (Thigpen & Handy, 2018) where young females were less likely to be licensed and more likely to delay licensing than males. This emerging trend in South Australia should be explored further in terms of any new gender-related lifestyle, socio-economic or cultural factors contributing to delaying licensure.

Examination of driver residence revealed that, in both the 17 to 19 and 20 to 24 age groups, young adults in the metropolitan area were less likely than those in rural regions to hold a driver's licence. Moreover, 17 to 19 year olds living in metropolitan Adelaide have become less likely to be licensed since 2013, with just 50% holding a licence in 2017. It was also found that, in Victoria, urban dwelling young adults were less likely to hold a licence than their rural counterparts, but those rates over time tended to be stable. These findings are consistent with Melia, Chatterjee and Stokes (2018) who found that urbanisation and a trend towards urban living contributed to less driving and increased public transport use among adults aged 16 to 34 in the United Kingdom. It is likely that an urban environment with higher population density places greater constraints on driving and also offers more

readily available alternative transport options. Thigpen and Handy (2018) reported similar findings in the United States.

With respect to socio-economic ranking, among the youngest group aged 17 to 19, the highest licensing rates were recorded for the high socio-economic group. However, in the 20-24 age group the highest licensing rates were for the low socio-economic group. This finding suggests that there may be some socio-economic factors associated with a licensing delay. While not conclusive, this would be supportive of other research that found socio-economic indicators (i.e. lower household income) are associated with delayed licensure (Tefft et al., 2014). Within both age groups, the middle socio-economic group had the lowest licensing rates, suggesting that this is a group most likely to consider alternative transport options.

In summary, these findings show that the lowest licensing rates are among young adults aged 17 to 19 and those living in metropolitan Adelaide or middle socio-economic ranked areas. Furthermore, both young males and females aged 17 to 19 and those living in the metropolitan area have declining licensing rates over time. Therefore, these groups have the greatest potential to take up active and other travel modes in South Australia both now and into the future.

4.2 Implications for the take up of other travel modes

Trends of declining licensing may well constitute a major underlying factor for the take up of active travel (e.g. cycling) and other travel modes (e.g. public transport). The reviewed literature indicates that a wide range of generational, lifestyle and attitudinal factors additionally influence the take up of non-driving travel modes. The complex interdependencies between these factors, as asserted by Chatterjee, et al. (2018), mean that they can indirectly influence active and alternative travel mode take-up, as well through their prime, direct influence on an individual's decision as to whether to delay or forgo getting a licence. However, there is a paucity of research as to which non-driving travel modes are currently preferred by young Australian adults and the extent to which they are used. Active travel modes, for example, might be just as popular, or more or less popular, than passenger travel in shared vehicles or on public transport. Until such research is conducted, the implications of a declining driver licensing trend can only be general rather than specific to particular alternative travel modes.

Moreover, it seems that *some* young South Australians are delaying obtaining a licence, evident in the higher licensing rates among those aged 20-24 years compared to drivers younger than that. While Sivak (2019) found in the United States that many young adults without a licence had not acquired one over the subsequent ten years, it remains to be seen to what extent this may be true for South Australia. Nevertheless, for as long as young people delay getting a licence, the more likely they are to be using alternative travel modes and, if they do eventually obtain a licence, they may still maintain use of alternative travel modes. Delbosc (2017) argues that we should seize on the phenomenon of licensing decline as a demographic trend that works in favour of sustainable transport policy and planning:

Each year without a driving licence extends the window of opportunity for a young person to familiarise him or herself with... active travel, car sharing, or intermodal transport. These [activities]... *if sufficiently supported*, can translate into sustainable habits that may continue into their [potential] licensing years. Travel habits extend far beyond driver licensing, and already evidence suggest that millennials with licences are more multi-modal than previous generations. [italics added] (Delbosc, 2017, p. 923)

The travel habits may constitute the travel choice for a single journey or they may occur in combination in a single journey, regardless of whether or not a driver's licence is also held. Delbosc

(2017) also points out that providing safe walking and cycling infrastructure, together with other developments such as providing active travel networks to key destinations like schools and parks (supported by phone apps), and making public transport more attractive can all reduce the dependence on the private car for families. In fact, research by Thigpen and Handy (2018) finds that parents giving their children permission for independent (active) travel can be quite influential on their children's subsequent licensing decisions and use of alternative travel modes when they become adults. They also found evidence of a link between growing up in walkable neighbourhoods and subsequent licensing delay in the late teenage years, with a foundational culture in multi-mode travel carrying well into adulthood. Their findings suggest cultural changes are behind the decreased licensing trend. Given that 63% of 17 year olds and 41% of 18 year olds in South Australia are *not* licensed to drive, there is huge potential to implement programs to encourage young adults to use alternate travel modes, when possible.

An overall implication for South Australia is to ensure that it meets the safety needs posed by any increased take-up of alternative travel modes by young adults, as strongly suggested by their declining licensing rates and the generational/lifestyle factors indicated in the literature. Meeting these safety needs, however, will depend on finding out which non-driving travel modes are being taken up and the frequency young adults are using them. By providing adequate infrastructure, attractive functional public transport and promoting shared vehicle use, there is also the opportunity to shape future alternative travel mode choices and facilitate longer term generational change.

4.3 Future needs

4.3.1 Understanding factors associated with not obtaining a licence

Additionally, there is a need to explore possible factors associated with non-licensing among 17 to 19 year olds. Such research should enquire as to the reasons these young adults give for not being licensed within the South Australian context. For example, we do not know the extent to which the current driver licensing trends are due to individual choice or the constraints imposed by socio-economic factors, labour/housing markets or availability of alternative travel modes. There is some evidence from the present study suggesting that socio-economic factors may have an initial impact on licensing rates (at ages 17-19, those with a high socio-economic ranking had the highest licensing rates) but this needs further exploration. Understanding why young people do not obtain a licence (or delay until their 20s) is not only important for strengthening government programs, but to contribute to the growing perspective on this phenomenon in the research literature.

4.3.2 Use of alternative travel modes

Associated with understanding why young adults do not obtain a licence is the need to ascertain the alternative travel modes being used by this group. For example, it is important to determine if and in what circumstances young adults are using active travel modes, public transport, or traveling as a passenger in a private vehicle. Given the international findings of a growing trend for young adults to be more multi-modal in travel choices when compared with previous generations, multi-modal travel should be a focus of the investigations. It is equally important to explore the barriers to the take up of alternative travel modes and private vehicle use among groups with higher licensing rates, such as those in rural communities, so that new initiatives might be developed to overcome such barriers.

4.3.3 On-going monitoring of driver licensing and travel mode trends

To ascertain if the licensing rates reported in the present study continue to decline, plateau or begin to increase, there is a need for ongoing monitoring (e.g. every two years) of licensing trends in South

Australia. Ideally, licensing trends should continue to be explored by demographic and socio-economic factors. It would also prove informative to compare any ongoing trends in South Australia with those in other jurisdictions. Within Australia, the exploration of licensing trends among young adults and possible reasons for declining licensing trends (whether delaying or forgoing licensure) is still in its early stages. Given the potential implications of such trends, further research is important for understanding this emerging phenomenon. To date, young adult licensing trends have been studied in Sydney and in Victoria, and now in South Australia, while research is currently also underway in Queensland and New South Wales (Senserrick, Siskind & Watson, 2019). It would be invaluable to conduct similar investigations in the remaining jurisdictions in order to provide a nation-wide picture of licensing trends. Likewise, travel mode choices should continue to be monitored as the Australian transport landscape continues to change rapidly, with increasing multimodality, more ride share facilities and the progression towards autonomous vehicles.

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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 organisation.

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Appendix A – Methodology for determining estimated resident population

Some of the data needed for this project were not available on the ABS website but can be found on data.gov.au then searching for “ASGS” and obtaining the relevant (i.e., year) data, for example:

- coding indexes: asgs2016codingindexes
- correspondences file : asgs2016_2016gridcorrespondences

The ABS *Regional population by age and sex, Australia, 3235.0* contains estimated resident population for age and sex by regions. Regions are in SA2 codes and age is in five year age groups (0-4, 5-9, 10-14, etc.). In order to match the population data with the licensing data it was necessary to match SA2 codes with postcodes of driver residence (from the driver licence file).

To link SA2 with postcode, use locality to SA2 coding index from the relevant ASGS coding indexes from data.gov.au, e.g., “2017 locality to 2016 SA2 coding index” from “asgs2016codingindexes”. This file contains postcodes and 9 digit SA2 codes.

The 9-digit SA2 codes need to be converted to 5 digit SA2 codes for linking with the population data. Take the first number – all South Australian SA2 codes start with 4 – and the last 4 digits of the 9 digit code in two separate cells using the MID function. The CONCATENATE function is then used to join these cells into one number. When finished, the result may need to be converted to a number (if it is a number stored as text).

EXAMPLE:

	A	B	C	D
1	401011001	=MID(A1,1,1)	=MID(A1,6,4)	=CONCATENATE(B1+C1)
Result		4	1001	41001

Once the 9-digit code has been converted to a 5 digit code, use the VLOOKUP formula to insert the postcode into an Excel spreadsheet within the ABS 3235.0, for example, VLOOKUP with the 5 digit SA2 code and insert the matching postcode.

Following this, create a spreadsheet with the list of postcodes in the first column and then the age groups of interest as the head row. Use the SUMIF function to populate the population for each postcode and age group. This will capture if the postcode appears in more than one SA2.

NOTE: This process will exclude some postcodes because SA2 codes cover larger areas and may contain more than one postcode. This is not an issue because the population from those postcodes will still be counted and it is likely that the RA and SES are similar. The most important aspect is that the total population is included.

To add RA and SES to the population file use VLOOKUP to match the post code from the population file with the RA and SES from the driver licence file.

Appendix B – Licence data tables

OVERALL LICENSING RATES

Table B.1
Percentages of SA population with licences, by age groups 17 to 89

Age	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
17-19	60.9%	63.7%	66.5%	60.9%	58.9%	57.7%	56.0%	55.3%	55.2%	54.4%
20-24	73.2%	73.0%	74.2%	74.5%	75.1%	75.2%	75.0%	74.6%	74.6%	74.3%
25-29	83.3%	82.5%	83.1%	83.0%	83.1%	82.2%	81.5%	81.7%	82.5%	83.0%
30-39	91.2%	91.0%	91.3%	91.1%	90.7%	90.2%	89.9%	90.2%	90.3%	90.4%
40-49	94.0%	94.2%	94.4%	94.4%	94.6%	94.3%	94.4%	94.4%	94.4%	94.8%
50-59	94.3%	94.6%	94.8%	94.6%	94.6%	94.9%	94.9%	95.0%	95.2%	95.3%
60-69	90.6%	91.5%	92.3%	92.7%	93.0%	93.3%	93.7%	94.1%	94.0%	94.3%
70-89	64.5%	65.8%	67.2%	68.2%	69.3%	70.6%	72.5%	73.9%	75.6%	77.1%

Table B.2
Percentages of SA population with licences, for specific age groups 17 to 89

Age	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
17-19	60.9%	63.7%	66.5%	60.9%	58.9%	57.7%	56.0%	55.3%	55.2%	54.4%
20-24	73.2%	73.0%	74.2%	74.5%	75.1%	75.2%	75.0%	74.6%	74.6%	74.3%
25-69	90.7%	90.8%	91.2%	91.2%	91.2%	91.0%	90.9%	91.1%	91.3%	91.6%
70-89	64.5%	65.8%	67.2%	68.2%	69.3%	70.6%	72.5%	73.9%	75.6%	77.1%

Table B.3
Numbers of new licences by ages 18 to 24

Age	2010	2011	2012	2013	2014	2015	2016	2017	2018
18	3265	3152	2594	4502	4461	4107	4584	4698	4423
19	1419	1596	845	1051	1680	1502	1611	1784	1931
20	1176	1106	568	744	896	1005	1183	1281	1121
21	899	820	542	602	600	642	710	754	789
22	724	687	388	452	421	435	431	603	573
23	662	636	354	477	277	313	329	398	423
24	563	560	310	435	263	338	219	288	394
18-24	1244	1222	800	1180	1228	1192	1295	1401	1379

GENDER

Table B.4
Percentages of licences held by females, ages 17 to 24

Age	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
17	50.0%	53.5%	55.6%	41.4%	41.4%	42.4%	40.4%	39.0%	39.2%	37.3%
18	62.3%	65.0%	68.1%	67.9%	61.9%	61.7%	60.4%	61.2%	60.3%	58.4%
19	64.2%	67.8%	71.2%	71.2%	71.7%	67.8%	67.3%	65.8%	67.2%	67.3%
20	68.5%	68.2%	71.8%	73.1%	73.2%	73.6%	70.5%	70.7%	70.1%	70.6%
21	70.6%	71.0%	71.3%	73.8%	75.3%	74.4%	74.9%	72.5%	73.0%	72.3%
22	73.7%	72.7%	73.4%	73.1%	75.2%	76.3%	75.5%	75.9%	74.1%	74.2%
23	75.3%	74.7%	74.7%	74.6%	74.4%	75.5%	76.8%	76.1%	76.2%	74.6%
24	77.1%	76.2%	77.1%	75.6%	76.8%	74.8%	76.2%	77.4%	76.7%	76.9%
17-19	58.9%	62.2%	65.1%	60.3%	58.6%	57.5%	56.3%	55.5%	55.9%	54.6%
20-24	73.0%	72.6%	73.6%	74.0%	75.0%	74.9%	74.8%	74.6%	74.1%	73.8%

Table B.5
Percentages of licences held by males, ages 17 to 24

Age	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
17	54.6%	56.8%	58.7%	43.6%	42.8%	42.1%	38.9%	37.5%	38.5%	36.5%
18	66.3%	68.0%	70.3%	68.9%	63.0%	62.3%	60.4%	60.1%	58.6%	59.1%
19	67.1%	70.2%	74.0%	71.6%	71.6%	68.1%	66.4%	66.8%	66.2%	65.3%
20	69.1%	69.8%	73.4%	73.9%	73.0%	73.9%	70.7%	70.4%	71.2%	69.9%
21	72.1%	71.6%	71.9%	74.0%	75.0%	74.4%	75.7%	72.3%	72.9%	74.3%
22	72.4%	74.4%	74.4%	72.7%	75.1%	76.5%	75.6%	76.9%	74.6%	74.5%
23	75.3%	74.5%	77.0%	75.7%	74.7%	76.0%	76.9%	76.1%	77.8%	75.8%
24	77.6%	77.1%	77.1%	78.0%	77.9%	76.5%	77.4%	77.6%	78.5%	79.5%
17-19	62.8%	65.1%	67.8%	61.4%	59.3%	57.9%	55.8%	55.0%	54.6%	54.0%
20-24	73.3%	73.5%	74.8%	74.8%	75.2%	75.5%	75.3%	74.7%	75.0%	74.8%

Table B.6
Percentage of licences held by males and females ages 17-19 and 20-24 (average for 2014-2018)

	17-19	20-24
Males	55.5%	75.1%
Females	56.0%	74.4%

Table B.7
Tests of statistical significance, comparing males to females (average for 2014-2018)

Age 17-19	Had a licence	No licence
Males	18183	14602
Females	17439	13722

Chi-square = 1.64 $p = .201$, ns

Age 20-24	Had a licence	No licence
Males	44515	14796
Females	41810	14369

Chi-square $p = 6.08$ $p = .014$

Table B.8
Percentages of licences held by males and females, ages 17 to 24 (average for 2014-2018)

	Age 17	Age 18	Age 19	Age 20	Age 21	Age 22	Age 23	Age 24
Males	38.7%	60.2%	66.5%	71.2%	73.9%	75.6%	76.5%	77.9%
Females	39.7%	60.4%	67.1%	71.1%	73.4%	75.2%	75.8%	76.4%

Table B.9
Tests of statistical significance, comparing males to females by individual age (average for 2014-2018)

Age 17	Had a licence	No licence
Males	4084	6470
Females	4011	6102

Chi-square = 2.02, p=.155 ns

Age 18	Had a licence	No licence
Males	6552	4336
Females	6252	4100

Chi-square = 0.11, p=.746 ns

Age 19	Had a licence	No licence
Males	7547	3795
Females	7175	3521

Chi-square = 0.73, p=.394 ns

Age 20	Had a licence	No licence
Males	8246	3332
Females	7769	3159

Chi-square = 0.05, p=.831 ns

Age 21	Had a licence	No licence
Males	8694	3069
Females	8171	2957

Chi-square = 0.69, p=.408 ns

Age 22	Had a licence	No licence
Males	9024	2915
Females	8464	2789

Chi-square = 0.43, p=.515 ns

Age 23	Had a licence	No licence
Males	9215	2827
Females	8642	2756

Chi-square = 1.60, p=.206 ns

Age 24	Had a licence	No licence
Males	9335	2653
Females	8764	2708

Chi-square = 7.23, p = .007

Table B.10
Female new licence holders, ages 18 to 24

Age	2010	2011	2012	2013	2014	2015	2016	2017	2018
18	1676	1588	1367	2212	2205	1984	2229	2303	2049
19	793	815	509	567	864	779	725	865	927
20	631	570	377	405	399	477	539	615	515
21	425	471	324	349	306	297	356	355	366
22	344	306	224	199	161	184	207	243	236
23	274	273	180	162	111	151	184	185	164
24	225	246	134	208	84	151	136	81	154
Average	624	610	445	586	590	575	625	664	630

Table B.11
Male new licence holders, ages 18 to 24

Age	2010	2011	2012	2013	2014	2015	2016	2017	2018
18	1589	1564	1225	2289	2256	2123	2354	2393	2369
19	625	781	334	484	816	723	884	913	1000
20	545	536	191	340	498	528	644	663	605
21	473	350	217	253	293	345	354	394	422
22	379	381	164	253	260	251	222	359	336
23	388	362	173	314	166	162	145	212	258
24	338	314	175	227	178	187	83	207	237
Average	620	613	354	594	638	617	669	734	747

LOCATION OF RESIDENCE

Table B.12
Percentage of licensed drivers in metropolitan and rural areas, ages 17-19 and 20-24

	Metro		Rural	
	17-19	20-24	17-19	20-24
2013	56.0%	72.1%	68.4%	88.2%
2014	54.5%	72.4%	70.4%	93.6%
2015	52.7%	72.4%	66.3%	90.1%
2016	50.4%	70.7%	71.3%	90.8%
2017	50.5%	70.4%	70.6%	93.2%

Table B.13
Percentage of licensed drivers in metropolitan and rural areas, ages 17-19 and 20-24 (average for 2013-2017)

	17-19	20-24
Metro	52.8%	71.6%
Rural	69.4%	91.2%

Table B.14
Tests of statistical significance, comparing metropolitan and rural areas, ages 17-19 and 20-24 (average for 2013-2017)

Age 17-19	Had a licence	No licence
Metro	25459	22759
Rural	10841	4788
Chi-square = 1320.31, p < .001		
Age 20-24	Had a licence	No licence
Metro	66673	26441
Rural	19838	1926
Chi-square = 3624.61, p < .001		

SOCIO-ECONOMIC STATUS

Table B.15
Percentage of licensed drivers aged 17-19 by SEIFA quintile

SES quintile	2013	2014	2015	2016	2017
1	52.5%	58.8%	53.4%	50.4%	49.4%
2	64.2%	57.6%	53.6%	63.6%	62.8%
3	50.9%	55.5%	61.7%	44.0%	44.9%
4	65.3%	54.8%	49.3%	77.4%	77.3%
5	65.0%	63.8%	64.3%	50.0%	51.0%

Table B.16
Percentage of licensed drivers aged 20-24 by SEIFA quintile

SES quintile	2013	2014	2015	2016	2017
1	70.0%	82.2%	75.9%	73.9%	73.9%
2	87.9%	75.5%	74.6%	90.4%	92.3%
3	64.1%	80.2%	90.0%	59.3%	60.2%
4	81.7%	66.3%	61.2%	95.6%	97.4%
5	76.1%	79.5%	84.8%	64.5%	62.6%

Table B.17
Percentage of licenced drivers by socio-economic ranking, ages 17-19 and 20-24 (average for 2013-2017)

SES	17-19	20-24
Low	55.6%	78.1%
Middle	51.4%	70.8%
High	60.5%	75.3%

Table B.18
Tests of statistical significance, comparing socio-economic ranking, ages 17-19 and 20-24 (average for 2013-2017)

Age 17-19	Had a licence	No licence
Low	13942	11128
Middle	5602	5485
High	16708	10951

Chi-square = 338.85, p<.001

Age 20-24	Had a licence	No licence
Low	33561	9456
Middle	13739	6213
High	39038	12835

Chi-square = 612.89, p<.001