2015

National Cycling Participation Survey

Victoria

AUSTRALIAN BICYCLE COUNCIL

Austroads

National Cycling Participation Survey 2015: Victoria

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Abstract

The National Cycling Participation Survey (NCPS) is a standardised survey that has been repeated biennially since March/April 2011, with minor changes to the survey structure between 2011 and 2013. The NCPS provides data on cycling participation at a national level and allows for estimates of participation for each state and territory, and the capital cities and non-capital areas within each state and territory.

The survey suggests that 16.6% (95% CI: 14.6% - 18.6%) of Victorian residents ride a bicycle in a typical week. More than one third (35.9%, 95% CI: 33.5% - 38.4%) had done so in the past year. The cycling participation rate when measured over the past month and year appears to have declined steadily since 2011 in both Melbourne and regional Victoria. The participation rate measured over the past week has declined between 2011 and 2013 but remained steady between 2013 and 2015.

Keywords

National Cycling Strategy, cycling participation, active transport

ISBN 978-1-925294-56-9

Austroads Publication No. AP-C91-15

Publication date July 2015

Pages 30

Publisher

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- promote improved practice and capability by road agencies
- promote consistency in road and road agency operations.

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- Department of Transport and Main Roads Queensland
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- Department of Planning, Transport and Infrastructure South Australia
- Department of State Growth Tasmania
- Department of Transport Northern Territory
- Territory and Municipal Services Directorate, Australian Capital Territory
- Commonwealth Department of Infrastructure and Regional Development
- Australian Local Government Association
- New Zealand Transport Agency.

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Contents

1 Introduction

1.1 Background

The National Cycling Participation Survey (NCPS) is a standardised survey that has been repeated biennially since March/April 2011. The NCPS provides data on cycling participation at a national level and allows for estimates of participation for each state and territory, and the capital cities and non-capital areas within each state and territory.

The primary survey objective is to obtain accurate data on cycling participation to monitor performance towards the National Cycling Strategy 2011-16 target of doubling cycling participation. The objective is to measure *participation* rather than *travel*. Participation is defined as the number of individuals who have cycled for any journey or purpose and in any location over a specified time period. By comparison, travel is the number of cycling trips that occurred over that time period, and may include the distance travelled, purpose and so on. Participation is much easier to define, and for individuals to recall, than travel. It is reasonable to expect an individual would remember whether they had ridden a bicycle over the past week, month or year, but far less likely they would be able to accurately recall the number of trips they have made over that period. Further details on the method and results used in NCPS are reported in detail elsewhere[1].

The survey is a telephone-based survey of residents of the study area, and includes coverage of mobile-only households. As cycling participation is greatest among children, it is critical that the survey have coverage of this group. Data on cycling participation of those aged under 15 is obtained by asking an adult in the household to report on behalf of other household members, including children. The survey fieldwork is undertaken by Market Solutions Pty Ltd and the data analysis and reporting is provided by CDM Research.

1.2 Perception indicators

An extension to the survey provides a series of attitudinal indicators which provide information on:

- feelings of comfort while riding in the municipality,
- change in cycling conditions over the past 12 months,
- barriers to riding for different purposes (commuting, education, shopping, recreation and to access public transport), and
- priorities for council to consider in improving cycling conditions.

As these questions require some insight into current cycling conditions only individuals who had ridden at least once in the past 12 months in the local government area were subject to these questions. Those who had not ridden at all in the past 12 months, or had only done so outside the municipality, were excluded from these questions. The barriers to cycling by non-cyclists have been widely studied and so are well understood. The survey does not look to investigate these barriers.

In addition to the perception questions the other main change to the cycling participation survey was to select the main respondent randomly from all household members aged 15 or above (using the next birthday method). This method avoids biases that are introduced by speaking only to the household member who answers the phone (who is **not** a randomly selected household member). This bias was unimportant with the cycling participation survey, as:

[1] Munro, C. (2011) *Australian Cycling Participation: Results of the 2011 National Cycling Participation Survey*, Austroads Publication No. AP-C91-11.

a) participation information was sought on all household members (via proxy for all others than the main respondent), and

b) only objective information (i.e. participation and demographics) were sought.

However, subjective information (i.e. the cycling perception component of the survey) cannot be gathered by proxy, and so it was necessary to ensure that the main respondent was drawn from all household members without bias.

1.3 Weighting

The person-level data are weighted at the gender and age level (2 – 9, 10 – 24, 25 – 49, 50+) to the ABS census 2011 population. The household-level data are weighted to ABS census 2011 household size (1, 2, 3, 4, 5, 6+ usual residents). The number of persons cycling is estimated by expanding the 2011 weights to estimated resident population for 30 June 2014 provided by the ABS.

1.4 Statistical significance

The estimates presented in this report are based on a sample of residents from Victoria. These estimates are subject to sampling variability as only a proportion of residents (approximately 1.0% of the resident population) were interviewed. The approach adopted in this report to represent this variability is to identify estimates where the relative standard error (RSE) exceeds 25% (denoted by a *) and exceeds 50% (denoted by **). Larger RSEs imply lower accuracy. As such, estimates denoted with a * should be treated with caution and those denoted with ** should be considered unreliable.

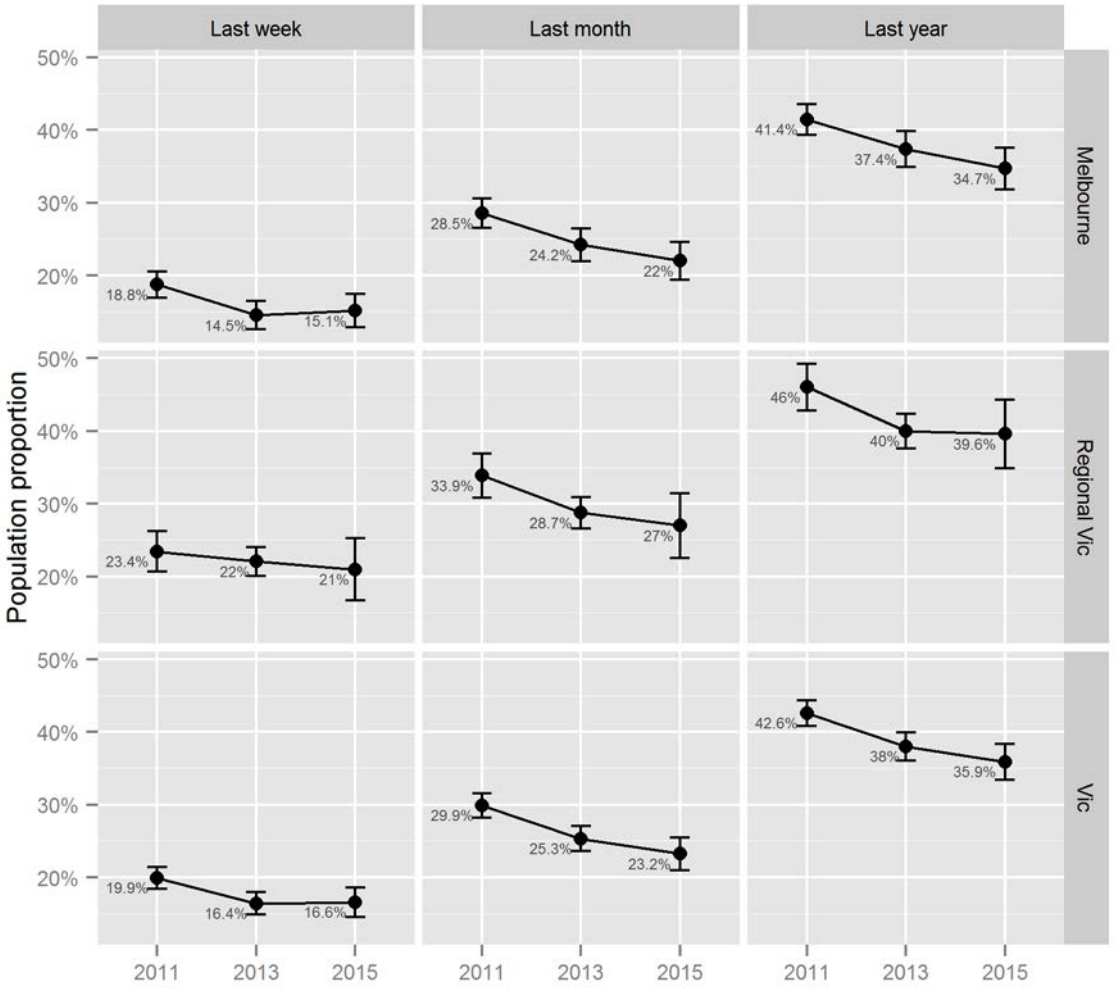
In some instances, for example for participation rates, the 95% confidence interval is reported. This represents the range within which we would expect the true population estimate to reside 95% of the time. Significant differences between parameters are present where the point estimate falls outside the confidence interval of a comparison parameter.

1.5 Survey sample

The sample consisted of 491 households containing 1,247 individuals. From the sample of 491 main respondents (i.e. the individual aged 15 or above with the next birthday that was selected for the interview) 122 had cycled at least once in the past year and so were presented with the perceptions component of the survey.

2 Results

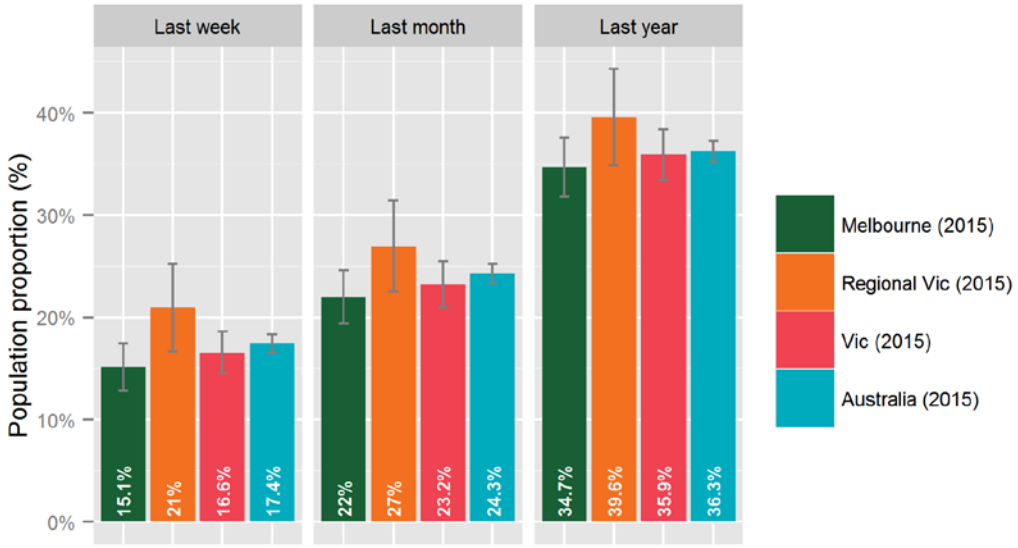
The survey suggests that 16.6% (95% CI: 14.6% - 18.6%) of Vic residents ride a bicycle in a typical week. More than one third (35.9%, 95% CI: 33.5% - 38.4%) had done so in the past year (Figure 2.1). The cycling participation rate when measured over the past month and year appears to have declined steadily since 2011 in both Melbourne and regional Victoria. The participation rate measured over the past week has declined between 2011 and 2013 but remained steady between 2013 and 2015.



■ Figure 2.1: Cycling participation of residents (error bars represent 95% confidence intervals)

These participation rates translate to approximately 969,300 residents riding in a typical week and 2,098,500 residents riding at least once in a typical year.

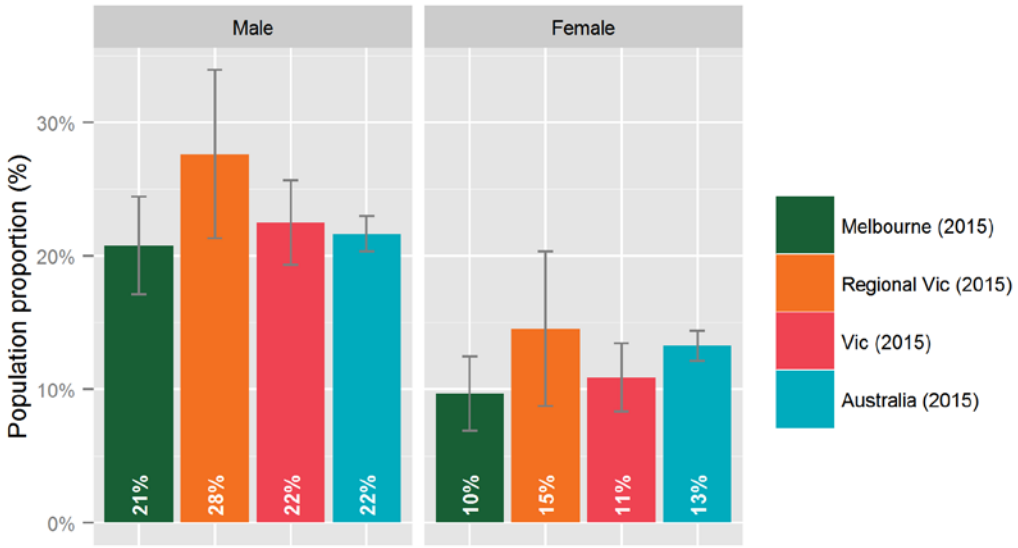
The cycling participation rate by residents of Melbourne is significantly lower than those of regional Victoria (Figure 2.2). The Victorian participation rates are similar to the national averages.



Sample: All persons.

■ Figure 2.2: Cycling participation comparison by area

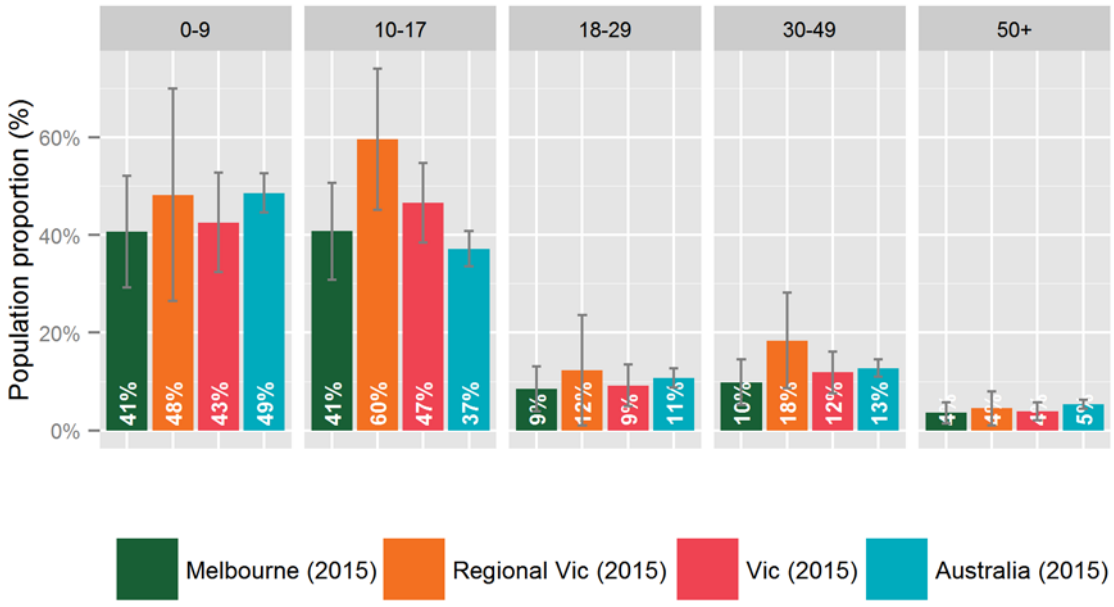
Males are significantly more likely to have ridden in the past week than females (Figure 2.3). The cycling participation rate among male residents of both Melbourne and regional Victoria is around twice that of female residents.



Sample: All persons, cycling participation in past week.

■ Figure 2.3: Cycling participation by gender

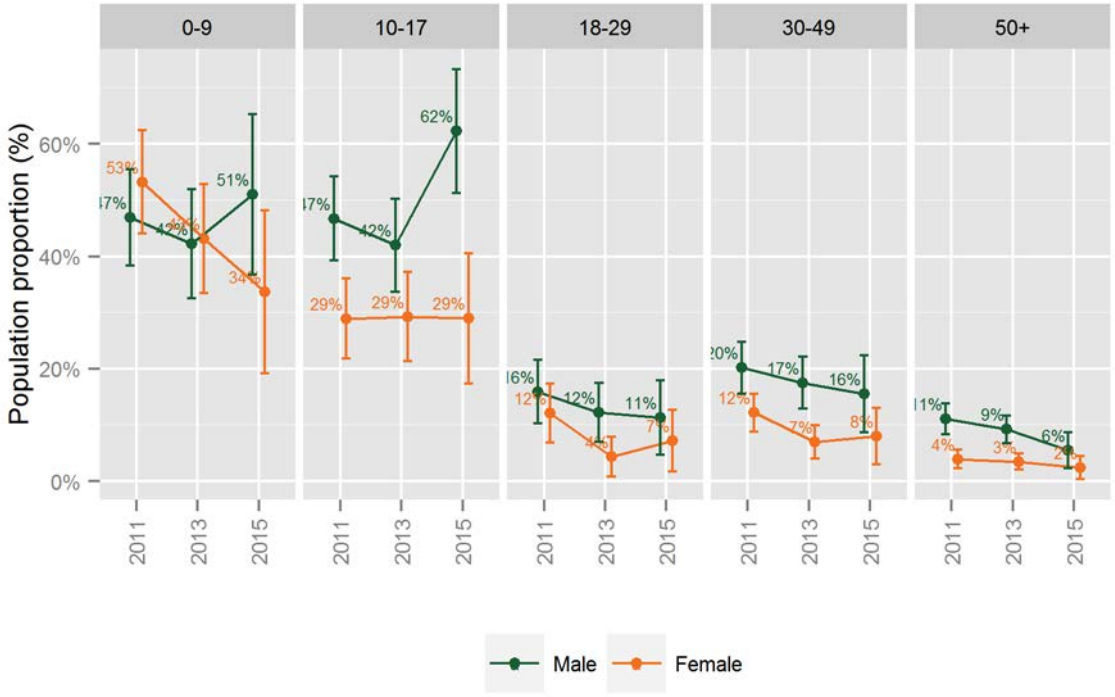
The highest cycling participation rate (measured as those who had ridden in the past week) was among children aged under 10 (Figure 2.4). The cycling participation rate is fairly consistent among older children but drops precipitously among young adults.



Sample: All persons, cycling participation in past week.

■ Figure 2.4: Cycling participation by age

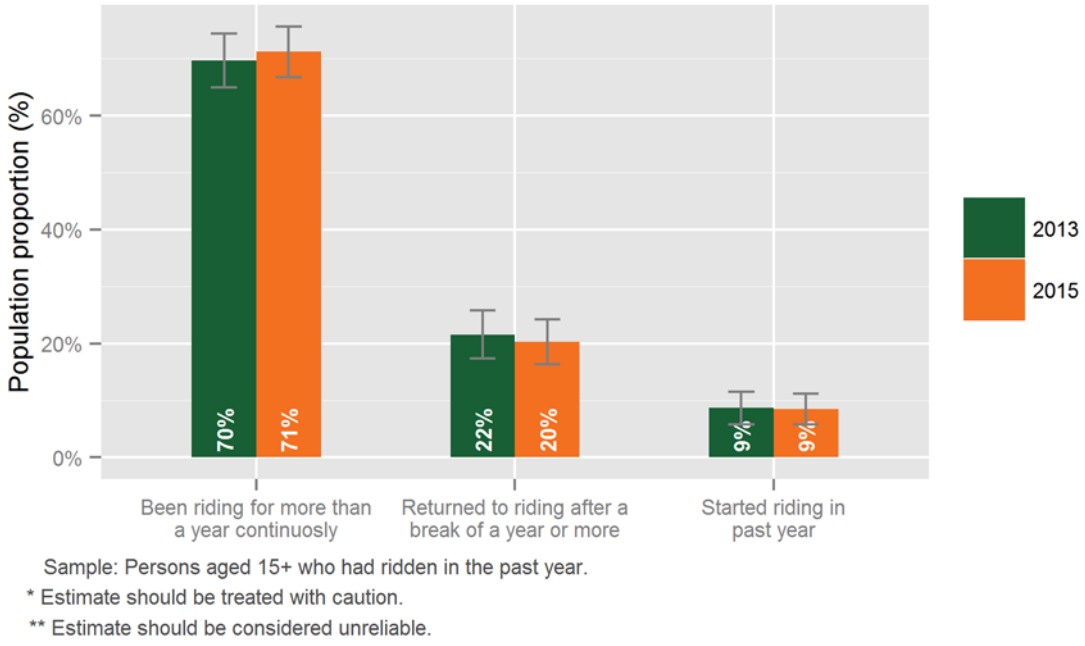
The cycling participation rate measured over the previous week may have increased among male children between 2013 and 2015, but appears to have steadily declined among older males aged over 30. The trend among females is less clear; cycling among young female children appears to have decreased significantly but female cycling participation among other age groups appears fairly stable.



Sample: All persons, cycling participation in past week.

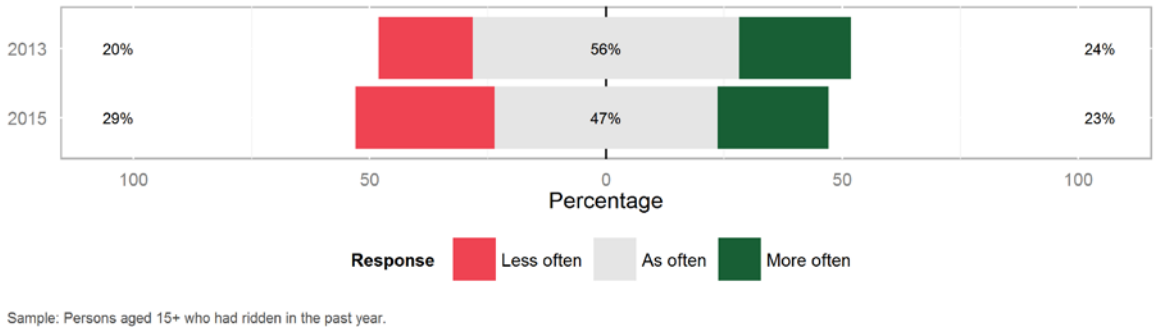
■ Figure 2.5: Cycling participation by age and gender

Those who indicated that they had ridden at least once over the past year were asked whether they had been cycling for a long period consistently, had recently started riding again or were altogether new to riding. This sample corresponds only to those aged 15 and over, which will contribute to the low proportion of those new to cycling. In both 2013 and 2015 the proportion who had returned to riding after a break of a year or more remained fairly stable at around 20% (Figure 2.6).



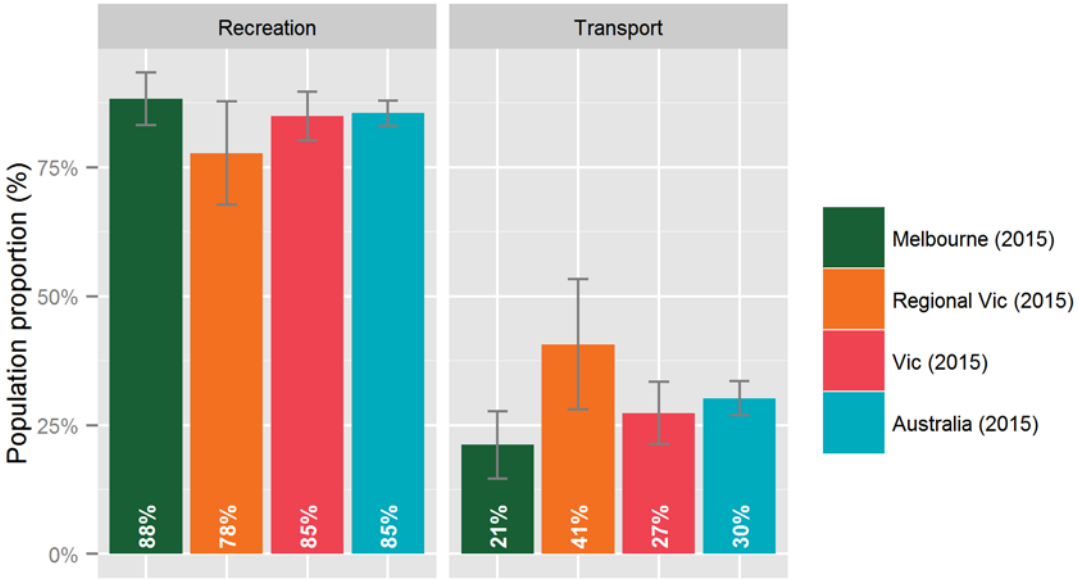
■ Figure 2.6: Cycling history

Among those who had ridden in the past year and were aged 15 or over who had indicated they had been riding continuously for more than a year, slightly more (29%) indicated they were riding less often than more often (23%) (Figure 2.7). The proportion riding less often appears to have increased since 2013.



■ Figure 2.7: Cycling frequency

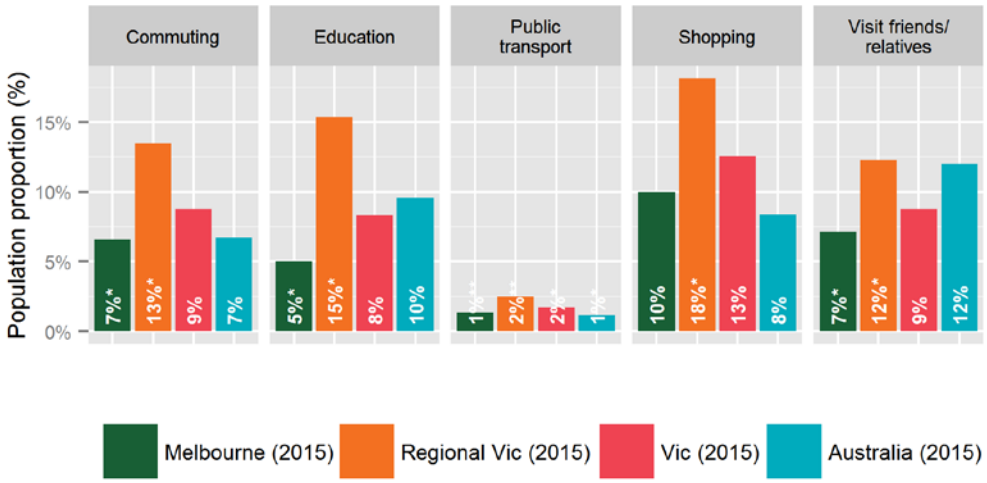
Of the people who cycled in Melbourne in the last month, 88% cycled for recreation and 21% used a bicycle for transport (Figure 2.8). The proportion riding for transport was significantly greater in regional Victoria (41%) than in Melbourne and Australia more broadly.



Sample: All persons who had ridden in the past month.

■ Figure 2.8: Cycling for recreation in comparison to cycling for transport

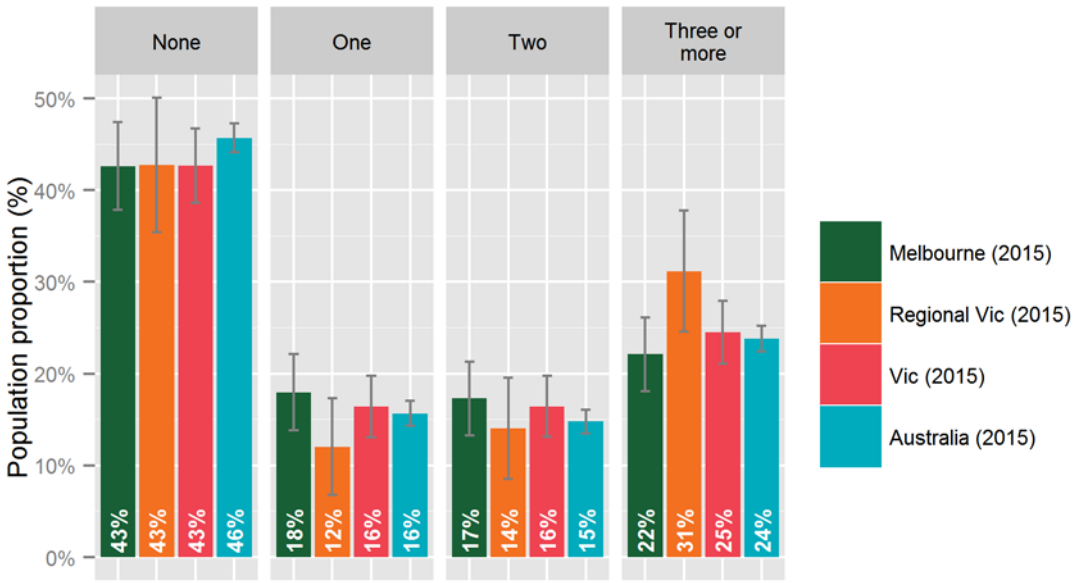
Among those who had ridden at least once in the past year, and had travelled at least once for each of the transport purposes (commuting, education, public transport, shopping and visiting friends or relatives) most had ridden to visit friends or relatives, for shopping, education or commuting (Figure 2.9). Very few had ridden to access public transport.



Sample: All persons who had ridden in the past year and who had travelled for each purpose (by any mode).
* Estimate should be treated with caution.
** Estimate should be considered unreliable.

■ Figure 2.9: Purpose of cycling for transport

Around 57% of households in Victoria have access to one or more working bicycles (Figure 2.10).

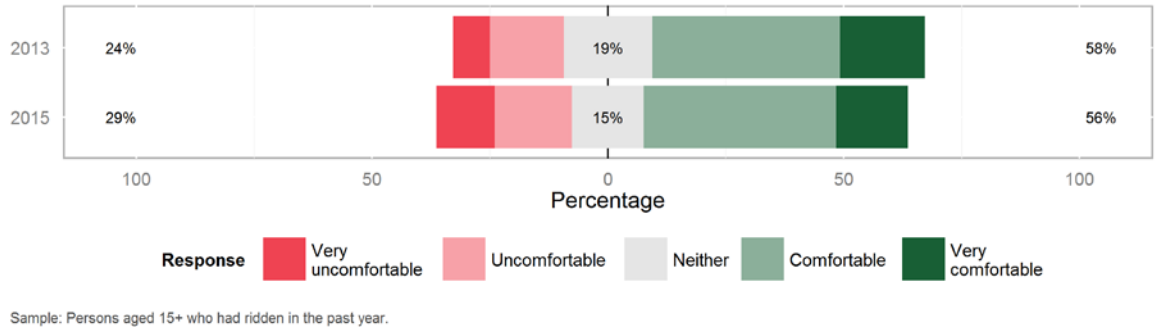


Sample: All households.

- Figure 2.10: Bicycle ownership by household

3 Rider perceptions

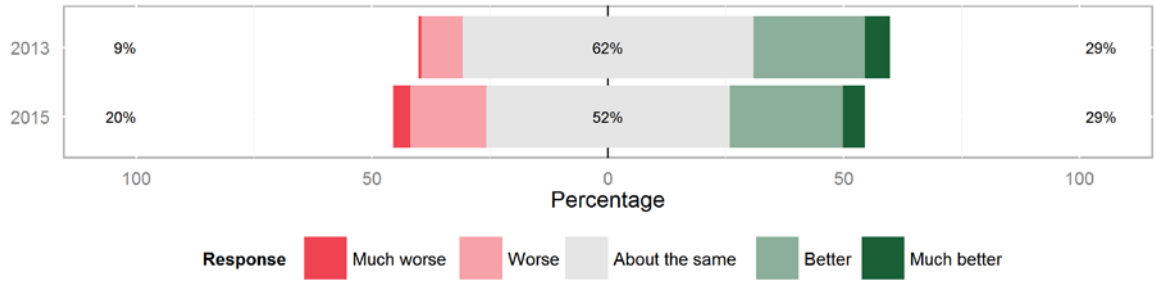
Those who had ridden at least once in the past year and were aged 15 or over were asked about their perceptions of riding in their local area. More of those who had ridden indicated they felt comfortable (56%) compared with 29% who felt uncomfortable (Figure 3.1). The proportion feeling more uncomfortable may have increased since 2013.



Sample: Persons aged 15+ who had ridden in the past year.

- Figure 3.1: Can you tell me how comfortable you feel riding in your area?

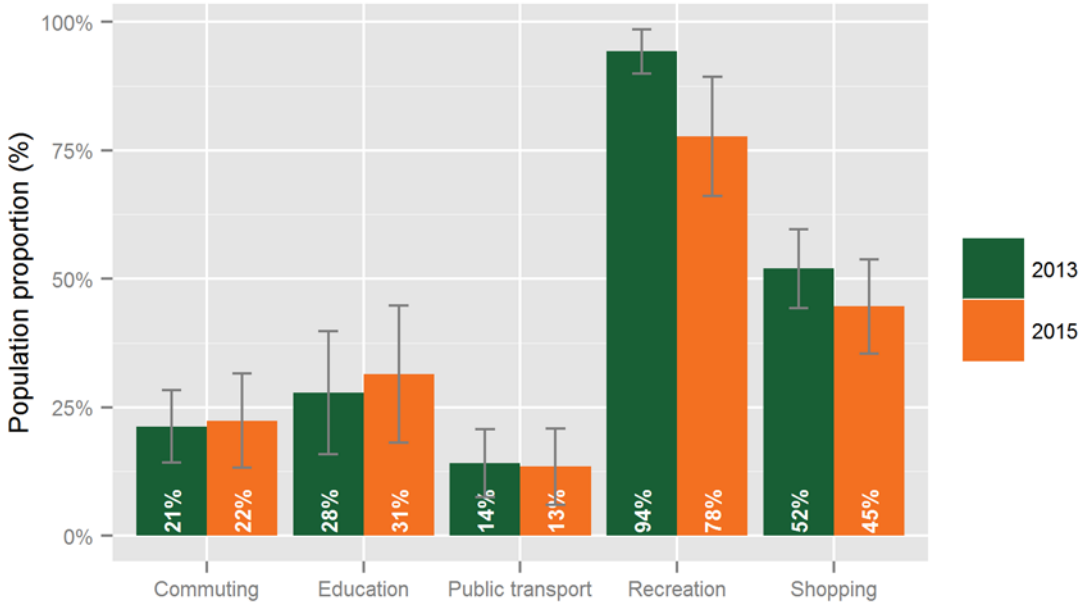
Half of riders felt riding conditions had not changed over the past 12 months while 31% felt they had improved and 19% felt they had deteriorated (Figure 3.2). There appears to have been an increase in the proportion of riders who felt conditions have deteriorated between 2013 and 2015.



Sample: Persons aged 15+ who had ridden in the past year.

- Figure 3.2: In the past year, do you think that cycling conditions in your area have become much better, better, about the same, worse or much worse?

Respondents who had ridden in the past year were asked whether they had travelled to work, education (school or university), shopping, public transport or participated in recreational exercise or fitness in the past year. For those that had undertaken these activities, they were asked whether they had ridden a bicycle for any of these purposes. Most of those who had ridden in the past year had done so at least once for recreation or exercise (78%), and half (45%) had done so for shopping (Figure 3.3). There appears to have been a significant decrease in cycling for recreation since 2013, while cycling for transport has remained fairly stable.



Sample: Persons aged 15+ who had ridden in the past year.

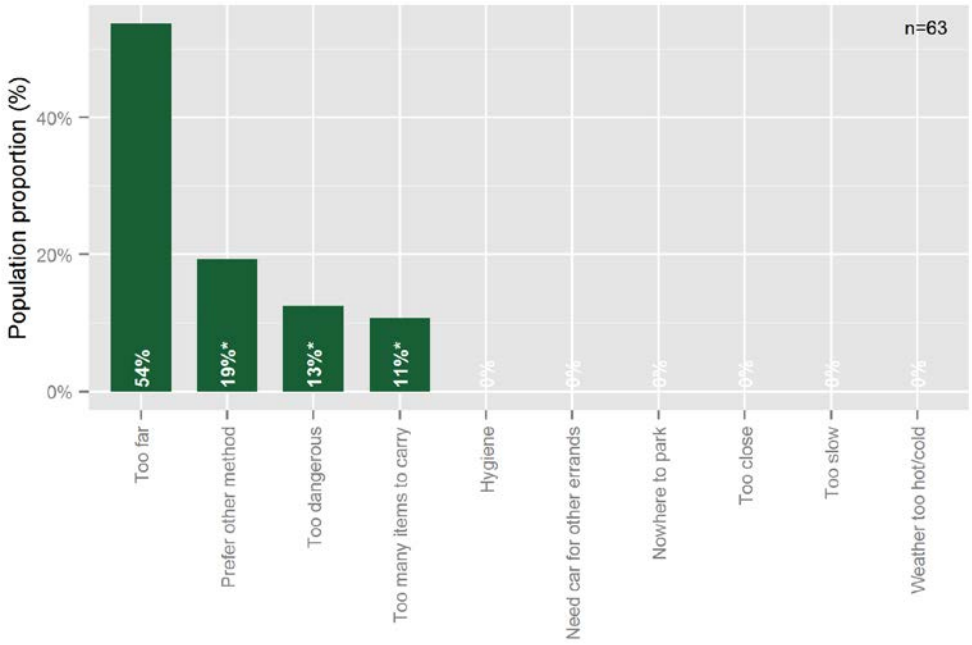
■ Figure 3.3: In the past year have you used a bicycle for any of these purposes?

Respondents who had travelled for the activities listed above, and who indicated they had not used a bicycle to do so, were asked why this was the case. For those who had not ridden to work (Figure 3.4) the most commonly cited reasons were:

- too far (54%), and
- prefer other method (19%).

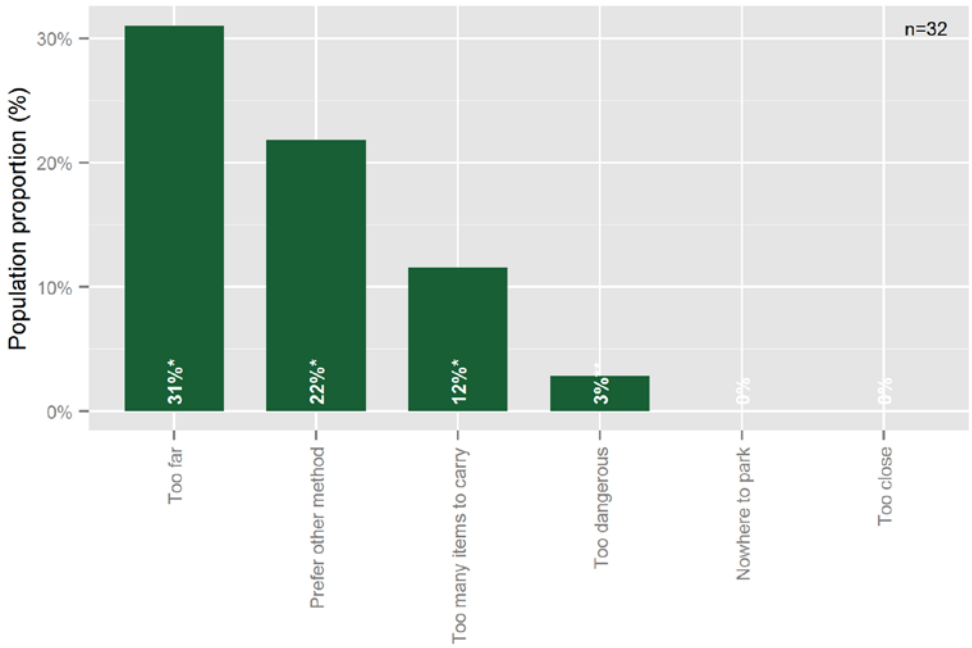
For those who had not ridden to school or education (Figure 3.5) the most commonly cited reasons were:

- too far (31%), and
- prefer other method (22%).



Sample: Persons aged 15+ who had ridden in the past year, had travelled to work but not by bicycle.
* Estimate should be treated with caution.
** Estimate should be considered unreliable.

- Figure 3.4: Why have you not used a bicycle for travel to work in the past year?

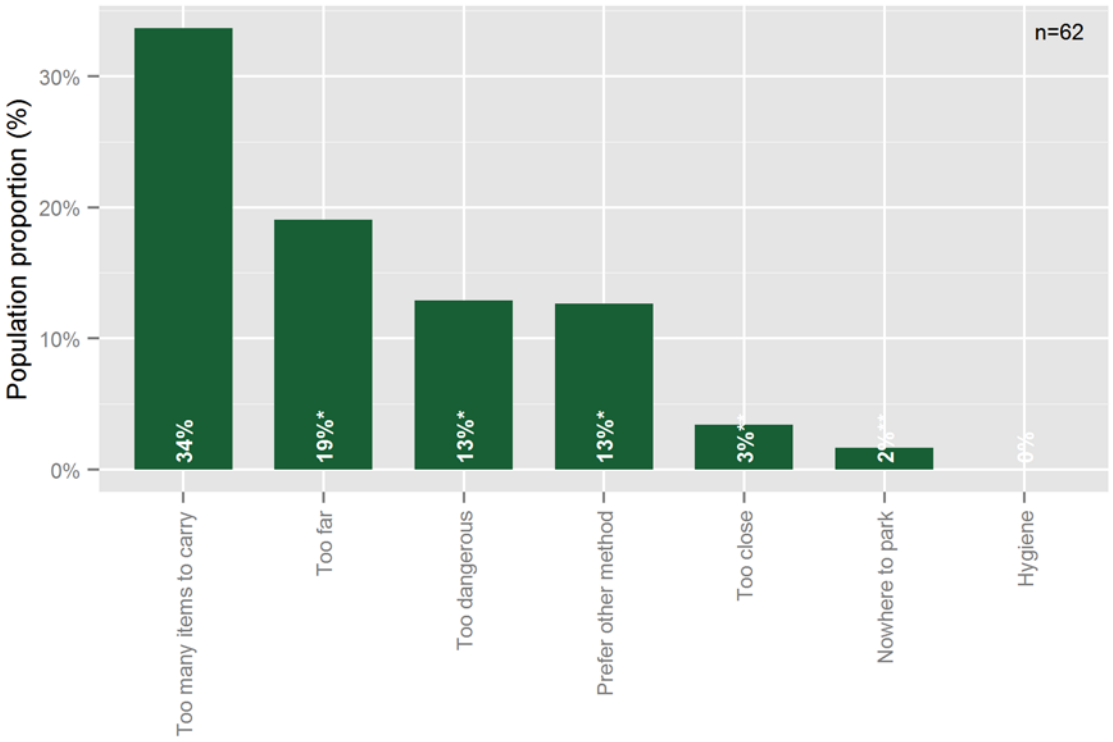


Sample: Persons aged 15+ who had ridden in the past year, had travelled to education but not by bicycle.
* Estimate should be treated with caution.
** Estimate should be considered unreliable.

- Figure 3.5: Why have you not used a bicycle for travel to school or university in the past year?

For those that had not ridden for shopping (Figure 3.6), the most commonly cited reasons were:

- they had too many items to carry (34%), and
- that it was too far (19%).



Sample: Persons aged 15+ who had ridden in the past year, had travelled to shopping but not by bicycle.
* Estimate should be treated with caution.
** Estimate should be considered unreliable.

■ Figure 3.6: Why have you not used a bicycle for travel to shops in the past year?

Respondents were asked to prioritise actions that the government could take to encourage bicycle riding. The most supported actions, as shown in Figure 3.7, were:

- more off-road paths and cycleways (73% respondents rated this a very high or high priority),
- more signs highlighting bicycle routes (61%),
- better connections between bike paths and schools (60%),
- better connections between bike paths and public transport (54%),
- more bicycle parking (54%), and
- more on-road bicycle lanes (53%).

Sample: Persons aged 15+ who had ridden in the past year.

- Figure 3.7: How important are the following actions council could take to encourage bike riding?

Appendix A: Data Tables

The following table summarises the survey results. Estimates are provided for each parameter, as well as the 95% confidence interval and a confidence rating. This confidence rating provides an indication of the sampling variability relative to the size of the estimate using relative standard errors. The lower the relative standard error the lower the sampling variability is relative to the size of the estimate. A relative standard error of less than 25% is indicated by three stars, between 25% and 50% by two stars and above 50% by one star. A score of three stars indicates a high level of confidence such that the estimate can be treated with a high degree of confidence. A confidence rating of two stars indicates a moderate level of confidence, such that the estimate should be treated with caution. One star represents a situation where there is very low confidence in the estimate, and it is unlikely to be reliable.

Table A.1: Participation statistics

Sample statistics			
No. of households:	491		
No. of individuals:	1,247		
Cycling participation	**Estimate**	**95% confidence interval**	**Confidence rating**
% who rode last week	16.6%	14.6-18.6%	***
% who rode last month	23.2%	21-25.5%	***
% who rode in past year	35.9%	33.5-38.4%	***
No. who rode last week	969,300	850,800-1,087,700	***
No. who rode last month	1,358,100	1,227,000-1,489,200	***
No. who rode in past year	2,098,500	1,954,500-2,242,500	***
Participation by demography			
Gender			
% of males who rode last week	22.5%	19.3-25.7%	***
% of females who rode last week	10.9%	8.3-13.4%	***
Age			
% of 0-9 yr olds who rode last week	42.6%	32.4-52.7%	***
% of 10-17 yr olds who rode last week	46.6%	38.4-54.8%	***
% of 18-29 yr olds who rode last week	9.2%	4.9-13.5%	***
% of 30 to 49 yr olds who rode last week	11.9%	7.6-16.2%	***
% of 50 yr+ olds who rode last week	3.9%	2-5.7%	***
Gender by Age			
Male: 0-9 yr	51%	36.8-65.3%	***
Male: 10-17 yr	62.3%	51.3-73.3%	***
Male: 18-29 yr	11.3%	4.7-17.9%	**
Male: 30-49 yr	15.6%	8.7-22.4%	***
Male: 50 yr+	5.5%	2.3-8.7%	**
Female: 0-9 yr	33.7%	19.2-48.1%	***
Female: 10-17 yr	29%	17.4-40.6%	***
Female: 18-29 yr	7.2%	1.7-12.6%	**
Female: 30-49 yr	8%	3-13%	**
Female: 50 yr+	2.4%	0.3-4.5%	**

Table A.1 (cont.): Participation statistics

Participation by purpose	Estimate	95% confidence interval	Confidence rating
Summary			
% of those who rode in past week for recreation/exercise	84.9%	80.2-89.7%	***
% of those who rode in past week for transport	27.3%	21.3-33.4%	***
Detail			
% of those who rode in past week for commuting	8.8%	5.2-12.3%	***
% of those who rode in past week for education	8.3%	4.4-12.2%	***
% of those who rode in past week for shopping	12.6%	8-17.1%	***
% of those who rode in past week to train/tram/bus	1.7%	0-3.4%	**
% of those who rode in past week to visit friends/relatives	8.8%	4.8-12.7%	***
Cycling travel			
Caution: cycling travel estimates are biased by self-reporting and recall limitations, and should be treated with a high level of caution.			
Average number of days ridden by those that had ridden in past week	3.1	2.8-3.5	***
Average time ridden (mins) in past week by those that had ridden	181	141-221	***
Household characteristics			
% of households without a working bicycle	42.7%	38.6-46.7%	***
% of households with one working bicycle	16.4%	13-19.8%	***
% of households with two working bicycles	16.4%	13.1-19.7%	***
% of households with three working bicycles	24.5%	21.1-28%	***

Appendix B: Survey Script

INTRODUCTION

My name is (…) calling on behalf of [insert relevant state roads authority or Council] from Market Solutions, a social and market research company. Today we are conducting a quick survey about the travel habits of people across Australia. The survey will be used to track travel patterns over time. Would you be able to spend a few minutes describing a little about the way you get around?

RESPONDENTS MUST BE AGED 15 YEARS OR OVER. DO NOT MENTION CYCLING IN INTRO.

USE BIRTHDAY SCREENER TO SELECT MAIN RESPONDENT

Your responses will be held strictly confidential. My supervisor may listen to parts of this interview to assist in quality control monitoring.

CONTINUE	1
Schedule Callback	2
Soft refusal	3
Hard refusal	4
Non qualifying	5
Not a residential number	6
Terminated early	7
Communication difficulty	8
Language other than English	9
No contact on final attempt	10
Over quota	11
Duplicate	12
Away for duration of study	13
Non working number	14
No answer	15
Answering machine – msg left	16
Answer mach. – other attempts	17
Engaged	18
Incorrect details	19

CONFIRM LOCATION (LGA, REGION)

Q.1. We are interested in speaking to people who live in [READ IN POSTCODE]. Can you confirm this is your postcode?

Yes	1
No (SPECIFY POSTCODE)	2

Q.2. Ask only Council samples – otherwise go to next question

And can you confirm that your council area is (READ IN COUNCIL AREA)?

INSERT COUNCIL AREA .....

CHECK QUOTAS AND CONTINUE OR TERMINATE AS REQUIRED

SECTION 1: MAIN RESPONDENT'S TRAVEL

Q.3. In the last 7 days, have you used any of the following? (READ OUT) (ACCEPT MULTIPLES)

Car as a driver	1
Car as a passenger	2
Motorcycle	3
Train	4
Bus	5
Tram	6
Bicycle, even just riding in your backyard	7
None of the above	8

INTERVIEWER NOTE: DEFINITIONS OF BICYCLES INCLUSIONS:

- ADULT AND CHILDREN'S BICYCLES WITH TWO OR MORE WHEELS
- CHILDRENS BICYCLES WITH TRAINING WHEELS

EXCLUSIONS:

- ANY REGISTERED VEHICLES (E.G. MOPEDS)
- CHILDREN RIDING TOYS SUCH AS TRICYCLES AND SCOOTERS
- CHILDREN WHO ARE IN A SEAT OR TRAILER ON A BICYCLE
- RIDING ON A STATIONARY EXERCISE BICYCLE

Q.4. Ask if did not ride in the last 7 days – otherwise go to next question

When did you last ride a bicycle? (READ OUT) (ONE ONLY)

In the last 2 weeks	1
In the last 3 weeks	2
In the last 4 weeks	3
More than a month ago	4
More than a year ago	5
Never	6

Q.5. Ask if last rode in the last 7 days – otherwise go to Q.7

In the last 7 days, on how many days did you ride a bicycle?

INSERT NO. DAYS .....

Q.6. What is your best estimate of the total time you have spent riding over the past 7 days?

INTERVIEWER NOTE: Record number of HOURS. e.g. 90 minutes should be recorded as 1.5 hours.

INSERT NO. OF HOURS .....

Q.7. Ask if rode in past 4 weeks – otherwise go to next question

For what purposes did you ride over the last 7 days/2 weeks/3 weeks/4 weeks? (READ OUT) (ACCEPT MULTIPLES)

To or from work	1
To or from school, university or study	2
To or from shopping	3
For recreation or exercise	4
To get a train, bus or tram	5
To visit friends or relatives	6
Some other reason (Specify)	7

Q.8. Ask if rode in past year – otherwise go to Q.10

Which of the following statements best describes you? Would you say you… (READ OUT)

Are new to cycling (started cycling in the last 12 months)	1
Have started to cycle again after a break of 12 months or more	2
Have been cycling for more than 12 months	3

Q.9. Ask if rode in past year and have been cycling for more than 12 months – otherwise go to next question

And would you say that you… (READ OUT)

Cycle more frequently than a year ago	1
Cycle as frequently as a year ago	2
Cycle less frequently than a year ago	3

Q.10. Now we would like you to think about comfort when bike riding within the [AREA], that is, how at ease you feel when riding in the area. Can you tell me how comfortable you feel riding in the [AREA], are you…? (READ OUT)

Very comfortable	1
Comfortable	2
Neither comfortable nor uncomfortable	3
Uncomfortable	4
Very uncomfortable	5
(Have not ridden in the area in the past year)	6

Q.11. In the past year, do you think that cycling conditions in the [AREA] have become much better, better, about the same, worse or much worse? (READ OUT)

Much better	1
Better	2
About the same	3
Worse	4
Much worse	5
(Unsure/Don't know)	6

Q.12. Do you have any comments regarding conditions for bike riding in the [AREA]? (RECORD VERBATIM)

Q.13. In general, in the past year have you done any of the following activities?
(READ OUT) INTERVIEWER NOTE: NOT JUST ACTIVITIES DONE ON A BICYCLE

Travel to work	1
Travel to school or university	2
Travel to the shops	3
Recreational exercise or fitness	4
Travelled on a tram, bus or train	5
(None of the above)	8

Q.14. In the past year, have you used a bicycle for any of the following…?
(READ OUT)

IF Q13=1: Travel to work	Yes/No
IF Q13=2: Travel to school or university	Yes/No
IF Q13=3: Travel to the shops	Yes/No
IF Q13=4: For recreational exercise or fitness	Yes/No
IF Q13=5: To travel to a tram, bus or train	Yes/No

Q.15. IF Q13=1 & Q14!=1 - Why have you not used a bicycle for travel to work in the past year?
(DO NOT READ OUT) (ACCEPT MULTIPLES)

Too far	1
Prefer other methods of transport	2
Too many items to carry on a bike	3
Hygiene reasons	4
Nowhere to park the bike	5
Too dangerous	6
Other (specify)	7
No particular reason	8

Q.16. IF Q13=2 & Q14!=2 - Why have you not used a bicycle for travel to school or university in the past year?

(DO NOT READ OUT) (ACCEPT MULTIPLES)

Too far	1
Prefer other methods of transport	2
Too many items to carry on a bike	3
Hygiene reasons	4
Nowhere to park the bike	5
Too dangerous	6
Other (specify)	7
No particular reason	8

Q.17. IF Q13=3 & Q14!=3 - Why have you not used a bicycle for travel to the shops in the past year?

(DO NOT READ OUT) (ACCEPT MULTIPLES)

Too far	1
Prefer other methods of transport	2
Too many items to carry on a bike	3
Hygiene reasons	4
Nowhere to park the bike	5
Too dangerous	6
Other (specify)	7
No particular reason	8

Q.18. IF Q13=4 & Q14!=4 - Why have you not used a bicycle for recreational exercise or fitness in the past year?

(DO NOT READ OUT) (ACCEPT MULTIPLES)

Prefer other forms of exercise	1
Too dangerous	2
Other (specify)	3
No particular reason	4

Q.19. IF Q13=5 & Q14!=5 - Why have you not used a bicycle for travel to the shops in the past year?

(DO NOT READ OUT) (ACCEPT MULTIPLES)

Too far	1
Prefer other methods of transport	2
Too many items to carry on a bike	3
Hygiene reasons	4
Nowhere to park the bike	5
Too dangerous	6
Too close (no need)	7
Other (specify)	8
No particular reason	9

Q.20. There are a number of actions the [AUTHORITY] could take to encourage bike riding in the [AREA]. For each of the following, can you tell me whether these are very high priority, high priority, moderate priority, low priority or not a priority?

SCALE: 1= VERY HIGH, 2=HIGH, 3=MODERATE, 4=LOW, 5=NOT A PRIORITY, 6=UNSURE

More off-road paths and cycleways	__
More on-road bicycle lanes	__
Better connections between bike paths and schools	__
Better connections between bike paths and shops	__
Better connections between bike paths and parks and swimming pools	__
Better connections between bike paths and public transport	__
More bicycle parking	__
Lower local road speed limits	__
More bike skills training	__
More signs highlighting bicycle routes	__
More events or campaigns that promote bike riding	__

Q.21. Do you have any suggestions for actions you would like to see [AUTHORITY] take regarding bike riding in the [AREA]? (RECORD VERBATIM)

SECTION 2: MAIN RESPONDENT'S DEMOGRAPHICS

We are interested in understanding a little about those who ride bikes and those who do not. This will help us understand how interest in cycling changes over time.

Q.24. Just a couple of questions now to help us analyse responses.

GENDER: (RECORD AUTOMATICALLY)

Male	1
Female	2

Q.25. AGE: What is your age? (INSERT 99 FOR DON'T KNOW – NONE SHOULD BE UNDER 15 YEARS OF AGE)

Under 2 years	1
2 to 4 years	2
5 to 9 years	3
10 to 14 years	4
15 to 17 years	5
18 to 24 years	6
25 to 29 years	7
30 to 39 years	8
40 to 49 years	9
50 to 59 years	10
60 to 69 years	11
70 to 79 years	12
80 years or over	13
(Refused)	14

Q.26. OCCUPATION: Which of the following categories apply to you at the moment? (READ OUT) (ACCEPT MULTIPLES)

Student – Full time	1
Student – Part time	2
Work – Full time (>35hrs/week)	3
Work – Part time (<35hrs/week)	4
Work – Casual	5
Work – Unpaid voluntary work	6
Unemployed and looking for work	7
Home duties	8
Pensioner – not retirement age	9
Retired – on pension	10
Retired – not on pension	11
Other (Specify)	12
(Refused)	13

Q.27. How many people usually live in your household? INCLUDE ALL AGES – A RESIDENT IS SOMEONE WHO HAS, OR WILL, LIVE AT THE HOUSEHOLD FOR A PERIOD OF AT LEAST 3 MONTHS

RECORD NUMBER.....

Ask next section if household has more than 1 member – otherwise go to close

SECTION 3: OTHER HOUSEHOLD MEMBERS TRAVEL

INTRO > 2 PEOPLE IN HOUSEHOLD:

We would now like to understand a little about the way the other people in your household use bikes and get a little detail about them. Starting with the oldest person in the household other than yourself and working down, could you tell me…?

INTRO = 2 PEOPLE IN HOUSEHOLD:

We would now like to understand a little about the way other people in your household use a bike and get a little detail about them, could you tell me…?

ASK Q.28 – Q.35 FOR EACH OTHER HOUSEHOLD MEMBER THEN GO TO CLOSE

Q.28. GENDER: What is their gender?

Male	1
Female	2

Q.29. AGE: What is their age? (INSERT 99 FOR DON'T KNOW)

Under 2 years	1
2 to 4 years	2
5 to 9 years	3
10 to 14 years	4
15 to 17 years	5
18 to 24 years	6
25 to 29 years	7
30 to 39 years	8
40 to 49 years	9
50 to 59 years	10
60 to 69 years	11
70 to 79 years	12
80 years or over	13

(Refused)	14
(Don't know)	15

Q.30. Ask for each person aged five years or over – otherwise go to next section OCCUPATION: Which of the following categories apply to THIS PERSON at the moment? (READ OUT) (ACCEPT MULTIPLES)

Student – Full time	1
Student – Part time	2
Work – Full time (>35hrs/week)	3
Work – Part time (<35hrs/week)	4
Work – Casual	5
Work – Unpaid voluntary work	6
Unemployed and looking for work	7
Home duties	8
Pensioner – not retirement age	9
Retired – on pension	10
Retired – not on pension	11
Other (Specify)	12
(Refused)	13
Child – not school age	14

Q.31. In the last 7 days, has this person used any of the following methods of transport? (READ OUT) (ACCEPT MULTIPLES)

Car as a driver	1
Car as a passenger	2
Motorcycle	3
Train	4
Bus	5
Tram	6
Bicycle, even just riding in your backyard	7
None of the above	8
(Don't know)	7

INTERVIEWER NOTE: DEFINITIONS OF BICYCLES

INCLUSIONS:

- ADULT AND CHILDREN'S BICYCLES WITH TWO OR MORE WHEELS
- CHILDRENS BICYCLES WITH TRAINING WHEELS

EXCLUSIONS:

- ANY REGISTERED VEHICLES (E.G. MOPEDS)
- CHILDREN RIDING TOYS SUCH AS TRICYCLES AND SCOOTERS
- CHILDREN WHO ARE IN A SEAT OR TRAILER ON A BICYCLE
- RIDING ON A STATIONARY EXERCISE BICYCLE

Q.32. Ask if did not ride in the last 7 days – otherwise go to next question

When did THIS PERSON last ride a bicycle? (READ OUT) (ONE ONLY)

In the last 2 weeks	1
In the last 3 weeks	2
In the last 4 weeks	3
More than a month ago	4
More than a year ago	5
Never	6
(Don't know)	7

Q.33. Ask if last rode in the last 7 days – otherwise go to Q21

In the last 7 days, on how many days did they ride a bicycle? (RECORD 99 FOR DON'T KNOW)

INSERT NO. DAYS .....

Q.34. What is your best estimate of the total time they have spent riding over the past 7 days? (RECORD 99 FOR DON'T KNOW)

INTERVIEWER NOTE: Record number of HOURS. E.g. 60 minutes should be recorded as 1 hour.

Minutes Hours Minutes Hours

INSERT NO. OF HOURS .....

Q.35. Ask if rode in past 4 weeks, otherwise go to next question

For what purposes did they ride over the last 7 days/2 weeks/3 weeks/4 weeks? (READ OUT) (ACCEPT MULTIPLES)

To or from work	1
To or from school, university or study	2
To or from shopping	3
For recreation or exercise	4
To get a train, bus or tram	5
To visit friends or relatives	6
Some other reason (Specify)	7
Don't know	8

Q.36. How many bicycles in working order are in your household? INTERVIEWER NOTE: DEFINITIONS OF BICYCLES

INCLUSIONS:

- ADULT AND CHILDREN'S BICYCLES WITH TWO OR MORE WHEELS
- CHILDRENS BICYCLES WITH TRAINING WHEELS

EXCLUSIONS:

- ANY REGISTERED VEHICLES (E.G. MOPEDS)
- CHILDREN RIDING TOYS SUCH AS TRICYCLES AND SCOOTERS
- CHILDREN WHO ARE IN A SEAT OR TRAILER ON A BICYCLE
- RIDING ON A STATIONARY EXERCISE BICYCLE

RECORD NUMBER.....

CLOSE

Q37. As part of quality control procedures, someone from our project team may wish to re-contact you to verify a couple of responses you provided today. For this reason, may I please have your first name?

RECORD FIRST NAME

Q38. As this is market research, it is carried out in compliance with the Privacy Act and the information you provided will be used only for research purposes. Your answers will be combined with those of other participants, no individual responses will be identified.

We do re-contact people from time to time for related research projects. Would it be okay if we contacted you again in the future to invite you to participate in any similar research? We will only use this information to contact you to invite you to participate in research, your details will not be passed on to any third party.

IF AGREE, SAY: We will only keep your contact details on record for 12 months. You may ask to have your details removed at any time over the next 12 months.

Agree to future research	1
Do not agree to future research	2

CLOSE: That's the end of the interview. Thank you for your time and responses. My name is (…) from Market Solutions, if you have any queries about this survey feel free to call this office during business hours – would you like the number? (Provide number if required – 03 9372 8400 and ask to speak to Anna Lethborg. If you have any general queries, you can call the Market Research Society's Survey Line on 1300 364 830.

RECORD INTERVIEWER'S ID

AUDITING (OFFICE ONLY)

Q39. Was the date and time of interview correct?

Yes 1
No 2

Q40. Was the interview recorded correctly?

Yes 1
No 2

Q41. Was the interviewer courteous?
Yes 1
No 2

Q42. AUDITOR'S ID

ENTER ID.....

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Bureau of Infrastructure, Transport and Regional Economics

Australian cycling safety: casualties, crash types and participation levels

At a glance

This paper presents an analysis of cycling safety in Australia. Topics included are

- analysis of casualties by demographics
- types of crash that result in cyclist injuries
- recent trends in cycling participation.

Cyclists comprise 3 per cent of all road fatalities and 15 per cent of all road hospitalisations. These proportions are higher today than five or ten years ago.

Children (0–16 years) have the highest population-standardised rate of cycling hospitalisations. This is in contrast to vehicle occupant hospitalisations, which peak in both the young adulthood ages and in the older (65+) ages.

Males are approximately four times more likely than females to be hospitalised following a cycling crash. For hospitalisations following any road crash, the male/female ratio is approximately 2:1.

Around 85 per cent of reported cyclist casualty crashes involve another vehicle (mostly a light vehicle).

Around 25 per cent of cyclist casualty crashes occur when two vehicles (including the cyclist) approach an intersection from perpendicular directions or from opposing directions. Other frequent crash types are side-swipes (14 per cent), collisions with vehicle doors (7 per cent) and rear-ends (6 per cent).

Cyclist casualty crashes are heavily skewed towards the lower posted speed zones (50km/h and 60 km/h).

Participation in cycling is increasing across many capital city commuting routes. However for overall cycling participation (transport and recreation), latest measures show flat or negative growth.

Introduction

Cycling is a popular and efficient mode of transport and a healthy recreation activity. The benefits of participation in cycling are promoted in Australia by strong community based associations and by policies and programs developed at all government levels through local to national. Infrastructure designed to meet the needs of cycling is being progressively built across Australia.

Cycling has associated safety risks, many of which are specific to the mode. Cyclists are considered vulnerable road users, whereby an error that might trigger a minor incident for a vehicle occupant could have major consequences for a cyclist. In this paper, several sources of bicycle crash data and exposure data are used to provide an overview of cycling safety and data sources in Australia. Recent trends are identified. The paper has three main sections. Section 1 presents latest casualty and fatality statistics, including tabulations by jurisdiction and age group. Section 2 presents analyses of crash type, vehicles-involved and location characteristics for crashes involving a cyclist casualty, and Section 3 explores recent Australian cycling exposure data.

Recent Australian research into cycling safety covers a wide field of topics—including exposure data and risk modelling, visibility, helmets, vehicle conflicts, injury, education and health. Many of the recent published papers provide much greater detail than is provided in the present broad study. See the References section.

Cycling is developing as a transport mode, and future studies to update safety statistics and model risk should be considered.

Definitions and data sources

The scope of the paper is traffic crash casualties (fatalities and injuries) of cyclists. 'Traffic' includes locations such as roads, road-related areas, bicycle paths and footpaths. Excluded are locations such as private land and roads not open to the public. A cyclist is a person riding or being carried as a passenger on a bicycle (also called a pedal cycle) — a vehicle with two or more wheels built to be propelled by human power (National Transport Commission 2012).

A fatality is a person who dies within 30 days from injuries in a traffic crash.

Two sources of injury data are used in this paper. A 'reported injury' is an injury that is recorded by police in a crash report. The road safety authorities in each state or territory validate and code this data into their individual databases, which contain all levels of crash severity. In this paper, national tabulations based on reported injury data do not separate minor injuries from serious or severe injuries.

The second source of injury data is 'hospitalised injury', or 'hospitalisation'. This is a hospital admission of an injured person, excluding those fatally injured. This data is sourced at hospitals and collated into the National Hospital Morbidity Database, which is managed by the Australian Institute of Health and Welfare (AIHW). BITRE receives annual extracts of this data.

The tables and figures are prefaced with the source/type of data used. The different sources of data necessitate that the tables show different years. Generally the latest available data are used.

1. Annual casualties

1.1 Australia

The first set of tables focus on counts of fatalities and injuries (hospitalised and police-reported), and on the proportions cyclists comprise of total road crash casualties.

Table 1: Cyclist casualties in traffic crashes — Australia

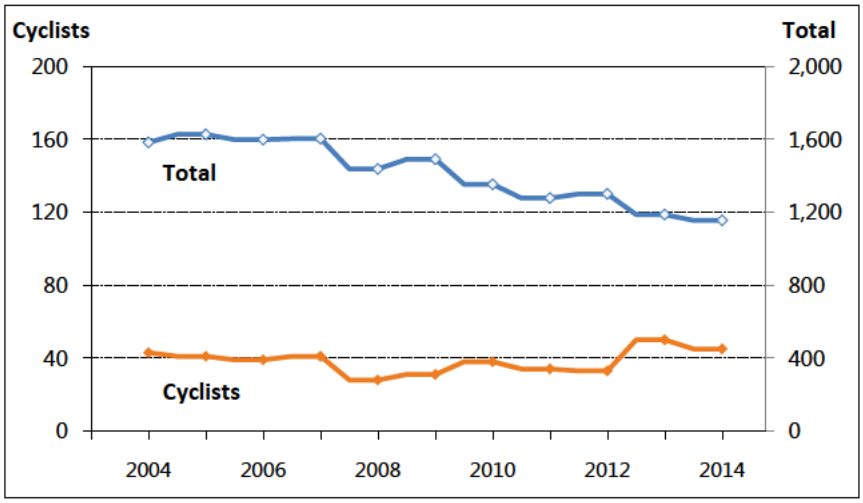
Year	Cyclists killed	Cyclists as % of all road fatalities	Year	Cyclists hospitalised	Cyclists as % of all road hospitalisations
2005	41	2.5%	2003-04	3,676	12.8%
2006	39	2.4%	2004-05	-	-
2007	41	2.6%	2005-06	4,370	14.0%
2008	28	1.9%	2006-07	4,789	14.6%
2009	31	2.1%	2007-08	4,814	14.8%
2010	38	2.8%	2008-09	5,264	15.4%
2011	34	2.7%	2009-10	5,330	16.2%
2012	33	2.5%	2010-11	5,168	15.5%
2013	50	4.2%	2011-12	5,527	16.0%
2014	45	3.9%	2012-13	-	-

- Data not available.

The two series of proportions in Table 1 have statistically significant increasing trends[1]. The annual series of hospitalised cyclists also has a significant trend of around 4 per cent increase per year[2]. There is no significant increase in the series of the annual fatality counts.

Figures 1 and 2 display the data in Table 1, adding lines for total road crash fatalities and total hospitalisations.

Figure 1: Fatalities: annual counts of killed cyclists and all road users



[1] Using a test for a linear trend in the log-odds (*prop.trend.test* in R).
[2] A *linear* model was fit and thus the annual per cent change varies — between 3% and 5%. Statistical significance was found at the size α <0.05.

Figure 2: Hospitalisations: annual counts of hospitalised cyclists and all road users

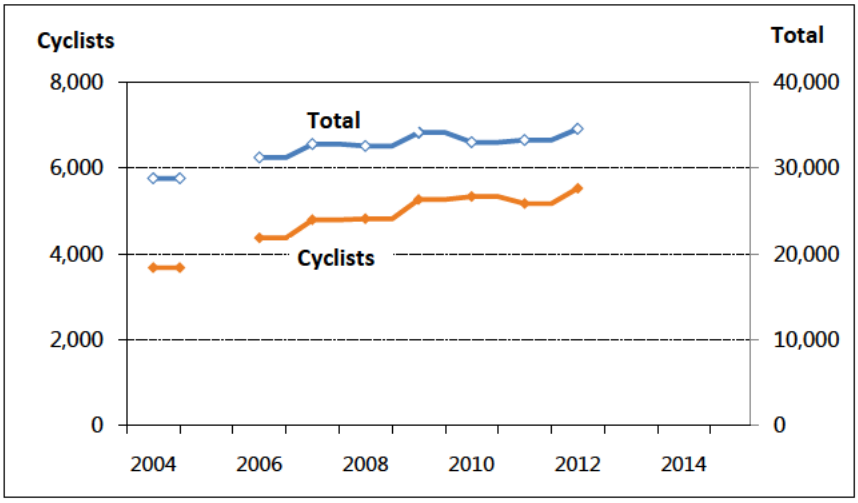


Table 2 compares cyclist fatalities as a proportion of all road fatalities, across jurisdictions and over time.

Table 2: Fatalities: cyclists as proportion of all traffic fatalities, by jurisdiction

5-year period	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Australia
2005-2009	2.4%	2.6%	2.3%	2.5%	1.5%	3.6%	1.1%	2.5%	2.3%
2010-2014	3.0%	2.9%	3.7%	3.8%	2.8%	4.5%	1.8%	7.4%	3.2%

For all jurisdictions, the proportion of cyclists' fatalities out of total fatalities was higher during the latter half of the decade than that during the first half. Small numbers preclude significant statistical findings for these differences — with the exceptions of Queensland, Western Australia and whole of Australia, all of which did record significantly increased proportions.

Table 3 gives counts of cyclist hospitalisations by jurisdiction. Hospitalised injuries by jurisdiction are available for a restricted number of years.

Table 3: Hospitalisations: cyclists hospitalised in traffic crashes, by jurisdiction

Year	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Australia
2005-06	1,362	1,212	824	323	328	111	61	101	4,370
2006-07	1,428	1,446	1,000	290	331	100	51	102	4,789
2007-08	1,297	1,402	999	353	410	115	70	119	4,814
Cyclists as % of all traffic hospitalisations	13.7%	15.8%	14.7%	13.4%	13.3%	14.9%	12.9%	20.1%	14.5%
2008-09	1,450	1,486	1,093	336	465	110	76	175	5,264
2009-10	-	-	-	-	-	-	-	-	5,330
2011*	1,487	1,688	955	379	531	73	np	np	5,393
Cyclists as % of all traffic hospitalisations	14.2%	17.5%	15.2%	14.7%	15.3%	14.4%	14.8%	28.5%	15.6%

* Calendar
\- not available
np not published

For all jurisdictions except Tasmania, the proportion of total hospitalisations comprised by cyclists has increased over time. Significant differences in the proportions over the two time periods occurred for Victoria, South Australia, Western Australia, Australian Capital Territory and Australia.

Police reported crashes (national only) are an alternative data source, shown in Table 4. These counts are of any reported injury, including minor injury.

Table 4: Reported injuries: cyclists injured in traffic crashes

Year	Australia[a]
2008	4,269
2009	4,510
2010	4,404
2011	4,363
2012	4,300
2013	4,400
Cyclists as % of all traffic injuries	4.4%

[a] Australia's totals in 2012 and 2013 includes estimates for Queensland.

Comparing Table 4 with Table 3, the counts of injured cyclists are similar in both, but the proportion is much lower in Table 4. The denominator (all reported road crash injuries) used for the proportion in Table 4 must be much higher. Around 80 per cent of reported injuries are of a vehicle driver or passenger. A significant number of these would have a minor injury rather than one requiring admission to hospital. Thus they will be included in the police reported injury data, but will likely be excluded from the hospital admission data. Johnson et al (2015) discuss crash reporting issues and data sources in a recent paper on Australian Capital Territory cycling.

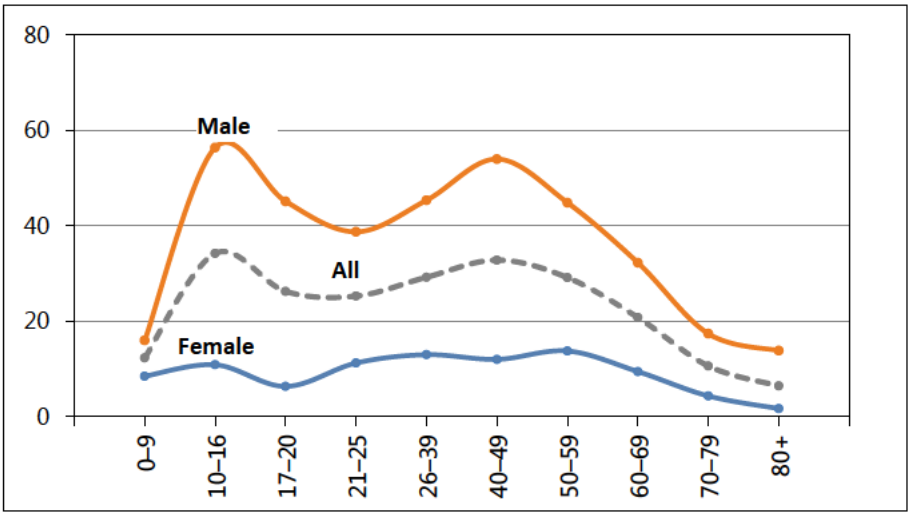
Table 5 gives cyclist hospitalisations by age groups. For children, approximately one third of all road crash hospitalisations are from cycling crashes.

Table 5: Hospitalisations: cyclists hospitalised in traffic crashes by age group

2012	Age group:	0-9	10-16	17-25	26-39	40-59	60-69	≥ 70	Total
	Gender								
	Male	239	567	603	1,025	1,488	360	158	4,440
	Female	120	104	128	292	393	107	39	1,183
	Ratio M/F	2.0	5.5	4.7	3.5	3.8	3.4	4.1	3.8

The overall number of annual hospitalisations of male cyclists is approximately four times higher than that of females. This is not explained solely by participation rates. For most ages, males have approximately twice the participation of females (see Section 3). Hospitalisation data by age group is standardised by population in Figure 3.

Figure 3: Cyclist hospitalisations per 100,000 population — age and sex distributions, Australia, 2012



The peak in the under 16 years group is not evident in hospitalisation rates for other road users (which are dominated by vehicle occupants). This highlights both higher exposure rates for younger people, and the vulnerability of cyclists. There is an increase in the male 40-49 demographic, which is also not seen in other road user groups, nor in female cyclists.

The next table presents greater-capital-city cyclist injuries standardised by population over six years. There is evidence that cyclist trips are increasing in capital cities (Section 3).

Table 6: Reported injuries: cyclists injured in traffic crashes per 100,000 population, for capital cities

	2008	2009	2010	2011	2012	2013
Sydney	16.4	17.3	16.9	15.1	14.5	14.7
Me bourne	28.7	30.3	30.8	32.0	27.6	29.6
Brisbane	19.0	19.5	19.0	17.6	-	-
Adelaide	35.8	33.6	37.0	38.0	38.9	39.0
Perth	16.2	17.8	16.7	17.1	15.3	14.6
Hobart	17.2	25.9	12.6	14.8	18.9	17.9
Darwin	29.7	30.3	25.8	19.4	16.6	24.0
Canberra	17.8	16.9	20.5	21.5	29.3	20.7
Australia – capital city[a]	22.1	23.0	23.0	22.7	21.9	22.2
Australia – outside capital city[a]	15.7	16.0	13.8	12.9	13.4	12.7

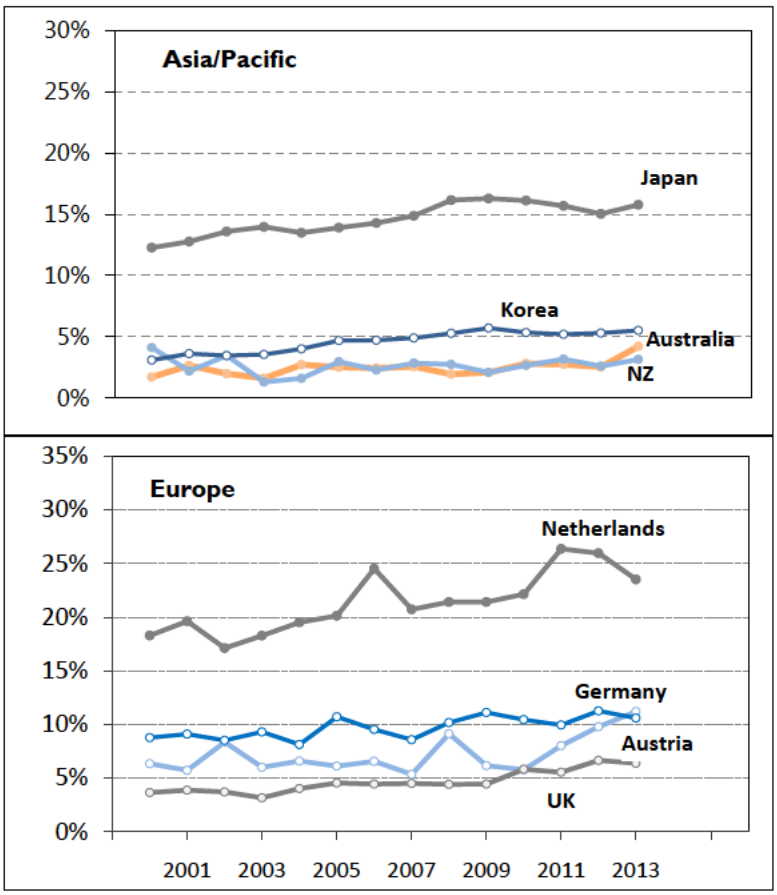
[a] Australia's rates for 2012 and 2013 use estimates for Queensland

Not shown in Table 6 is the corresponding rest-of-state rate. In all jurisdictions except Queensland and Tasmania, the capital city rate is higher than that rate. In Section 3, cycling participation levels are classified by Capital city and rest of state. Of note in the data above are the differences between the capital cities: the rates for Sydney and Perth are half of the rates for Melbourne and less still compared to Adelaide.

1.2 International

As a proportion of all road traffic crash casualties, cyclist casualties are increasing in Australia. Whilst this is also true for most OECD countries, the proportion varies significantly across countries. For the eight countries shown below, it varies between 3 per cent to 5 per cent for Australia and New Zealand to 25 per cent for the Netherlands.

Figure 4: Fatalities: cyclist fatalities as proportion of all road deaths — selected countries, 2000 to 2013



Source: International Road Traffic and Accident Database (IRTAD)

It is difficult to compare cycling participation rates across countries: surveys differ on size, date and other parameters. Pucher et al (2012) provides some data and analysis which shows that the Netherlands, Germany and Austria have much higher rates of cycling than either Australia or the United Kingdom. Similarly, in The European Commission's (2012) urban mobility survey, rates of recent bicycle use are reported to be approximately double that of Australia. Data for Japan was not available.

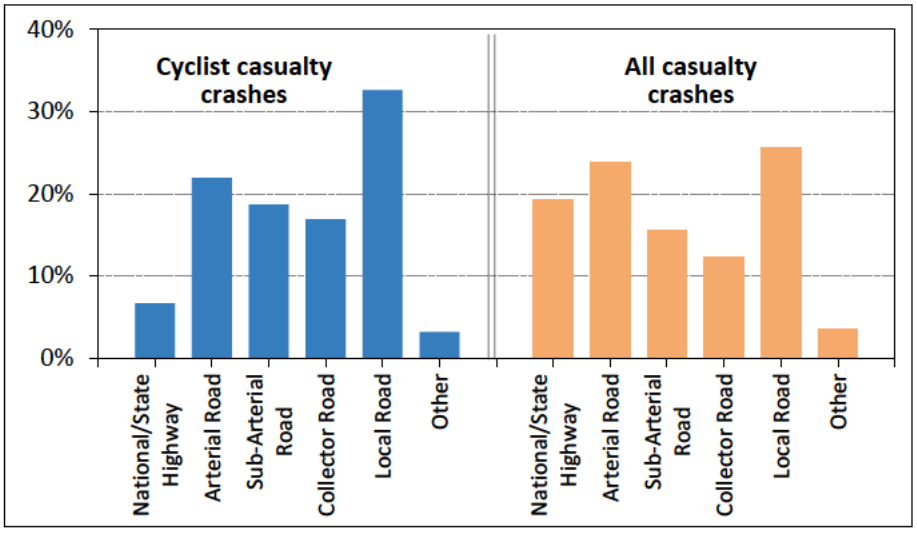
2. Casualty crash details

This section provides analysis of cyclist casualty crashes. Mostly, the data used is reported injury crashes. Three main areas are examined: the location and time-of-day characteristics of crashes; involvement of other vehicles by vehicle type for cyclist crashes; and analysis of crash type using the *Definitions for Classifying Accidents* (DCA) and *Road User Movements* (RUM) codes (Austroads 2009).

2.1 Location and Time-of Day

Part of the risk for cyclists is related to the number and speed of the other vehicles on the road. Larger roads offer more direct routes for longer trips, but necessarily involve greater interaction with other vehicles. Smaller local roads are less direct routes but have lower posted speed limits. Fatal cyclist crashes occur on all types of road. Highways and arterial roads account for around 29 per cent of all reported cyclist casualty crashes. For all fatal road crashes, (not just cyclists) highways and arterial roads account for around 43 per cent.

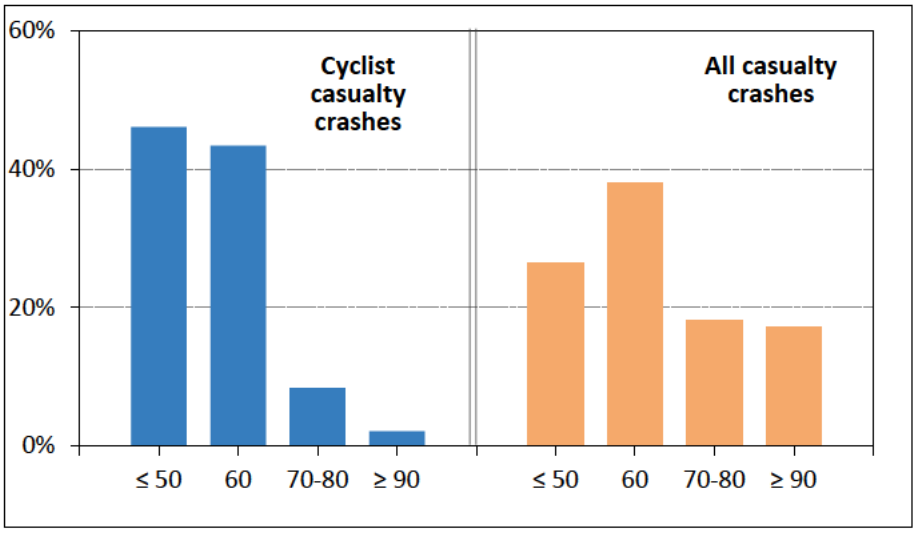
Figure 5: Reported casualty crashes by Road type — 2008-2013



Note: 'Other' includes Access roads, Busways, Paths and Unknown.

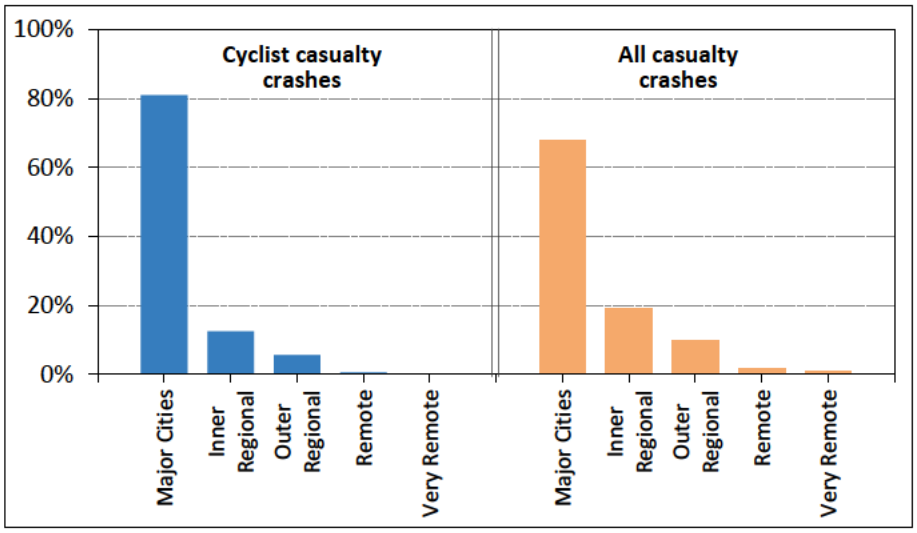
Related to the above is the posted speed limit on these roads. A significant proportion of all reported casualty crashes occur in zones of 70 km/h and above, whereas casualty cyclist crashes occur predominantly in lower speed zones (Figure 6).

Figure 6: Reported casualty crashes by posted speed limit (km/h) — 2008-2013



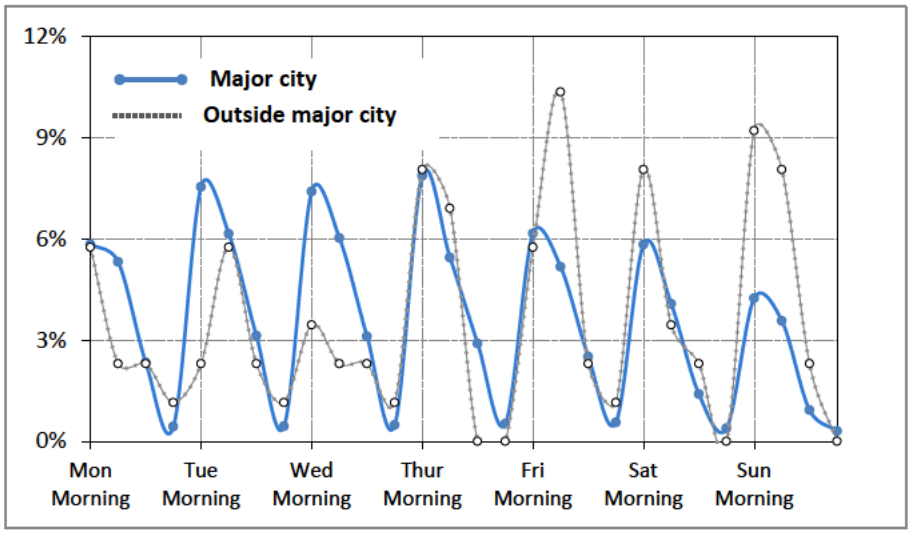
The risk implications of interactions between cyclists and other road users is highlighted in an analysis by Remoteness Region. Compared to all casualty crashes, those involving a cyclist injury/fatality are skewed towards a major city (81 per cent).

Figure 7: Reported casualty crashes by remoteness region — 2008-2013



The next analysis (Figure 8) classifies reported crashes involving a cyclist injury by time-of-day and by day-of-week. In the figure, the horizontal axis is divided into twenty eight 6-hour periods, where for ease of reading, only the morning period (6am to noon) is marked on the horizontal axis. As seen, the main peaks occur during this six-hour morning period. The data is also divided into Major city[3] regions and other regions. The former especially shows a regular daily cycle in crash times, peaking in the morning, falling in the afternoon and evening. The lowest points correspond to the period midnight to 6 am.

Figure 8: Reported cyclist casualty crashes by time[a] of crash — 2008 to 2013



[a] Morning (6am to noon), Afternoon (noon to 6pm), Evening (6pm to Midnight), Night/early (Midnight to 6am).

[3] 'Major city' refers to a category in the Australian Bureau of Statistics Remoteness Structure, ABS (2011)

2.2 *Vehicles involved –fatal and injury traffic cyclist crashes*

This section analyses the number and type of vehicles involved in cyclist casualty crashes. Two data sources are used: casualty crashes reported to police (both fatal and injury); and hospital admissions. Tables 7 and 8 utilise reported injury data.

Table 7: Reported casualty crashes: numbers of vehicles involved in crashes involving a cyclist casualty

	Fatal crashes			Injury crashes		
Year	One (cyclist only)	Two or more	Total crash count	One (cyclist only)	Two or more	Total crash count
2008-2010	21%	79%	99	10%	90%	12,915
2011-2013	24%	76%	120	10%	90%	12,005

The probability of non-reporting would probably be higher for single vehicle (cyclist only) crashes than for multiple vehicle crashes. If this was true, the figures of 10 per cent in the injury table would be under-estimates of the true proportions. Overall the proportions have not changed between the two time periods.

Crashes with three or more vehicles comprise approximately 3 per cent of all multi-vehicle crashes involving a cyclist casualty. The next table includes only two-vehicle crashes. It shows the type of vehicle with which the cyclist is colliding.

Table 8: Reported casualty crashes: type of other vehicle in reported two-vehicle crashes involving a cyclist casualty

	Fatal crashes				Injury crashes			
Year	Light vehicle	Heavy truck/Bus	Pedal cycle	Other	Light vehicle	Heavy truck/Bus	Pedal cycle	Other
2008-2010	63%	26%	3%	7%	86%	3%	4%	7%
2011-2013	66%	22%	5%	7%	84%	3%	4%	7%

Also not shown in Table 8 are approximately 60 casualty crashes per year (1.5 per cent) involving a cyclist and pedestrian. Of these, 45 per cent involve an injury to the pedestrian only, 13 per cent involve an injury to the cyclist only, and 40 per cent involve injuries to both. See de Rome et al (2011) for data analysis and discussion on cyclist crashes in the Australian Capital Territory.

Table 9 gives a a similar analysis to that shown in Table 8 but uses hospitalisation data. Counts of cyclists hospitalised with an injury are classified by type of other vehicle involved.

Table 9: Hospitalised injuries: counterpart[a] involved in crashes where a cyclist was hospitalised

	Colliding with another vehicle		
Year	Light vehicle	Heavy truck/Bus	Pedal cycle
2008-2010	80%	5%	16%
2011-2013	81%	3%	16%

[a] In collisions between a person's mode of transport and another vehicle or some other object, the other vehicle or object is called the 'counterpart'. (Henley 2012).

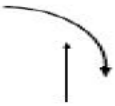
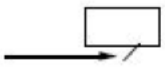
Table 9 is a summary of published and unpublished hospitalisation data. Approximately 25 per cent of cases record the counterpart as unknown, and there are another 25 per cent where the cyclist does not collide with any other vehicle. These categories are excluded from Table 9 to enable better comparison with Table 8. As such, the proportions shown are indicative only.

2.3 Analysis of crash types

'Crash type' as used here refers to a coding used by states and territories to summarise vehicle movements at the time of a crash. The coding is categorised into ten main groups and approximately 80 sub groups. A pictorial representation of the most common crash types for cyclist crashes is provided in Figure 9. See Austroads (2009) for more detail. The main groups are:

- Adjacent Directions (intersection only)
- Same Directions
- Overtaking
- Non-collision (straight)
- Non-collision (curve)
- Opposing Directions
- Manoeuvring
- On Path
- Miscellaneous
- Pedestrian

Figure 9: Common crash sub-groups for cyclist-involved casualty crashes

Main Crash Type	Sub-group		
Adjacent Directions [a] (Intersection only)	 Adjacent directions Cross traffic	 Adjacent directions Left Near	 Adjacent directions Right Near
Same Direction [a]	 Same direction Turning side swipe	Same direction Rear end	 Same direction Lane side swipe
Opposing Directions [a]	 Opposing directions Right thru		
Manoeuvring	 Manoeuvring From Footpath	 Manoeuvring From Driveway	
On Path	 On path Vehicle door		
Non-Collision(Straight)	 Non-collision (Straight) – Out of Control		

[a] Available data is crash-level and does not indicate which vehicle is the bicycle.

Tabulations of casualty crashes by main group and by sub-group are given in Tables 10 and 11 respectively. Single vehicle (cyclist only) and multi-vehicle casualty crashes are separately listed.

Table 10: Reported casualty crashes: crashtype (main groups) for crashes involving a cyclist casualty 2008-2013

Single-vehicle (cyclist only)		Multi-vehicle	
Main Crash type		Main Crash type	
Non-collision (Straight)	61%	Adjacent Directions	29%
Non-collision (Curve)	13%	Same Directions	22%
On Path	11%	Manoeuvring	22%
Pedestrian	5%	Opposing Directions	14%
Manoeuvring	5%	On Path	8%
Other	6%	Other	5%
Total	100%	Total	100%

Table 11: Reported casualty crashes: crashtype (sub-groups) for cyclist casualty crashes, 2008-2013

Single-vehicle (one cyclist only)		Multi-vehicle	
Crash type – Sub group		Crash type –Sub group	
Non-collision (Straight) – Out of Control	47%	Adjacent Directions – Cross Traffic	14%
Non-collision (Straight) – Off Left	10%	Opposing Directions – Right Thru	12%
Non-collision (Curve) – Out of control	8%	Manoeuvring – From Footway	10%
On Path – Object/Animal	5%	Same Directions – Side-Swipe	8%
Miscellaneous – Fell from vehicle	3%	On Path – Vehicle door	7%
Non-collision (Curve) – Off Carr/way at right bend	2%	Manoeuvring – Emerge from Driveway	6%
Pedestrian – Nearside	2%	Same Direction – Rear-end	6%
Other	20%	Same Direction – Turning Side-Swipe	6%
	100%	Adjacent Directions – Right Near	6%
Total case count	1,765	Adjacent Directions – Left Near	5%
		Other	20%
			100%
		Total case count	19,420

In their paper on risk factors in the ACT, Johnson et al (2015) found *Same Direction* interactions to be most frequent, followed by *Adjacent Directions*. See also Orsi et al (2013) for detail on some European cyclist crash configurations. Some of the behaviours of all the road users involved in cyclist crashes are analysed in Goode et al (2014).

The crash types for multi-vehicle crashes can be further analysed depending on the type of other vehicle involved.

Table 12: Reported casualty crashes: crashtype (sub-groups) for reported cyclist casualty crashes by vehicles involved (2008-2013)

Crash type (sub-groups)	Light vehicle	Heavy truck	Bus
Adjacent Direction – Cross Traffic	**15%**	7%	6%
Adjacent Direction – Right Near	6%	5%	1%
Adjacent Direction – Left Near	6%	4%	3%
Opposing Direction – Right Thru	**13%**	6%	4%
Manoeuvring – From Footway	**10%**	**11%**	**15%**
Manoeuvring – From Driveway	7%	**26%**	**32%**
Same Direction – Side-Swipe	7%	**26%**	**32%**
Same Direction – Turning Side-Swipe	7%	10%	7%
Same Direction – Read-end	5%	9%	10%
On Path – Vehicle door	7%	3%	1%
Other	17%	18%	19%
	100%	100%	100%
Total case count	16,329	354	242

The most common crashtype sub-groups in each column are in bold. Where a heavy vehicle is involved, side-swipes and Manoeuvring (from driveway or footway) are prevalent. When a light vehicle is involved, Adjacent direction and Opposing direction crashes are more common.

The final table in this section analyses crash type by the age of the injured cyclist.

Table 13: Reported casualties: crash types by age of the injured cyclist

Main crash type	Age 0-16	Age 25-60
Adjacent Direction – Cross Traffic	**13%**	**12%**
Adjacent Direction – Right Near	4%	6%
Adjacent Direction – Left Near	2%	6%
Opposing Direction – Right Thru	3%	**13%**
Manoeuvring – From Footway	**27%**	4%
Manoeuvring – From Driveway	**13%**	5%
Same Direction – Side-Swipe	4%	9%
Same Direction – Turning Side-Swipe	3%	8%
Same Direction – Rear-end	3%	6%
On Path – Vehicle door	2%	8%
Other		
	100%	100%
Total case count	3,242	14,344

For injured child cyclists, crashes involving manoeuvring vehicles are common. For older injured cyclists, cross traffic, opposing direction and side-swipe collisions are more prevalent. See Hutchinson et al (2010) for a longer term analysis of child cyclist casualties.

3 Exposure / Participation

3.1 Introduction

This section presents summaries of several diverse collections of recent data on cycling in Australia. Included are the National Cycling Participation Survey (Austroads 2013), ABS census data on Journey to work, and selected State/Territory cyclist count data. It is not a complete collection of relevant data, however it is sufficient to identify some common trends.

3.2 Australian Cycling Participation 2013

The Australian National Cycling Strategy 2011-2016 (Austroads 2010) has a goal of doubling cycling participation between 2011 and 2016. From the Strategy:

> *The overarching vision for this strategy is to realise a step-change in attitudes to cycling and in the numbers of riders in this country. In the short term, the goal is to double the number of people cycling over the next five years.* (page 5)
>
> ... ...
>
> *This target should be structured as a composite indicator, reflecting cycling for the purpose of travelling to work/study, recreational cycling and bicycle ownership.* (page 25)

The biennial *National Cycling Participation Survey* (Austroads 2013) is the main tool used to monitor progress towards the Strategy's goals. Two surveys have been carried out to date, with the latest in 2013. The tables below summarise key results.

Table 14: Cycling participation as a proportion of resident population — Australia, 2011 and 2013

	Rode in last 7 days	Rode in last month	Road in last year
2013	16.6%	24.6%	37.4%
2011	17.8%	26.5%	39.6%

Nationally, reported participation fell marginally in 2013 over the 2011 survey. Of the eight jurisdictions, only the Australian Capital Territory and New South Wales reported increased participation. The ACT had the highest participation in 2013 (47 per cent) and SA had the lowest (32 per cent).

The following table reports on participation by capital city and rest of state/territory.

Table 15: Cycling participation — Region of State/Territory, 2011 and 2013

	NSW		Vic		Qld		SA		WA		Tas		NT		ACT	
	2011	2013	2011	2013	2011	2013	2011	2013	2011	2013	2011	2013	2011	2013	2011	2013
Capital city	34%	39%	40%	37%	40%	37%	37%	31%	44%	40%	38%	39%	49%	47%	46%	47%
Other	40%	36%	46%	40%	35%	34%	43%	34%	47%	45%	42%	31%	55%	46%	-	-

Of the capital cities, only Sydney and the ACT reported increased participation.

Age groups and gender at the national level are shown in the next table.

Table 16: Cycling participation — Age groups and gender, 2011 and 2013

2011			2013		
Age (years)	Male	Female	Age (years)	Male	Female
0-9	51%	47%	2-9	48%	41%
10-17	42%	25%	10-17	41%	25%
18-19	17%	10%	18-29	14%	7%
40+	12%	5%	30-49	16%	8%
			50+	9%	3%

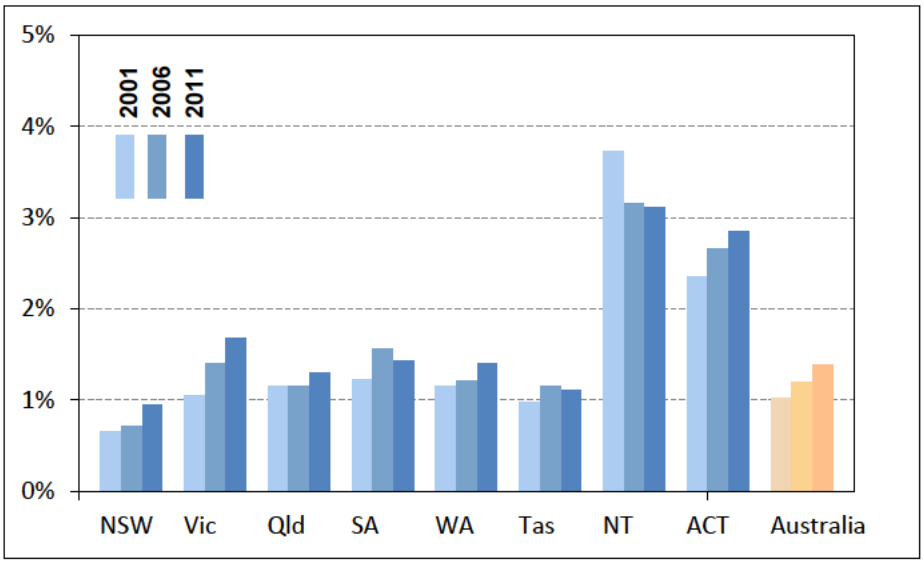
The reported age groups are not consistent across surveys, but in the 10-17 years group, participation is constant. Male participation is significantly higher in all age groups except the youngest (2 to 9 years).

It is clear from Tables 14, 15 and 16 above that reported participation is not generally increasing in Australia. Any changes between 2011 and 2013 are mostly non-significant in a statistical sense, although there are some exceptions to this. See the full reports for more details.

3.3 *Australian Bureau of Statistics — Journey to Work*

The data presented here is sourced from the censuses carried out in 2001, 2006 and 2011. The proportions shown are those undertaken by bicycle out of all single mode trips by persons aged over 15 years travelling to work. Capital city rates (Figure 10) increased over the three collections to around 1.4 per cent in 2011. Rest-of-state rates (not shown) fell over the three collections.

Figure 10: Journey to Work — proportion of single-mode trips made by bicycle, Capital cities



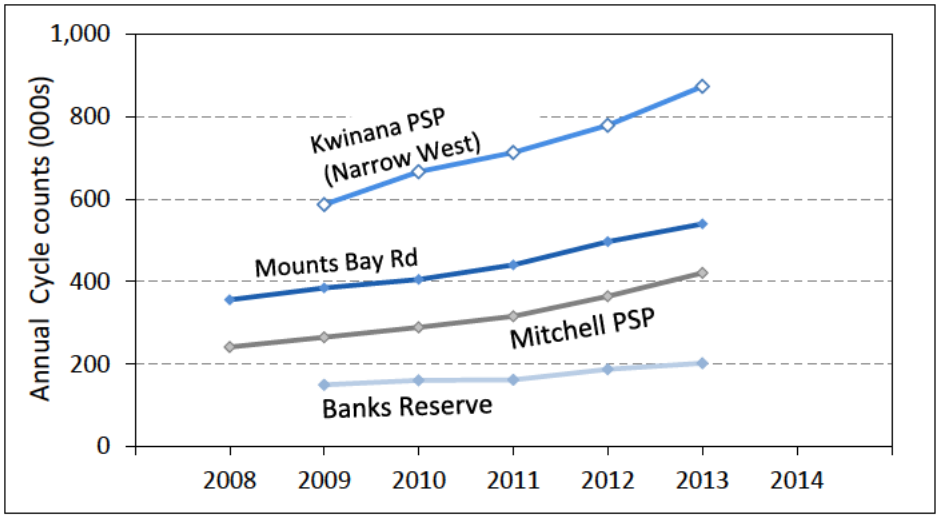
3.4 City traffic (bicycle) counts

A number of State and Territory transport agencies publish capital city vehicle traffic counts in map and chart form. The following cycling data is from Western Australia, Victoria and New South Wales.

3.4.1 Perth

The Western Australia Department of Transport publishes annual monitoring reports for its Bicycle network, and tabulated counts at each of its many traffic counter locations. Many of these have data for the last five years. A selection of annual counts for several widely separated locations are shown in Figure 11 below.

Figure 11: Annual cyclist counts — selected locations in Perth

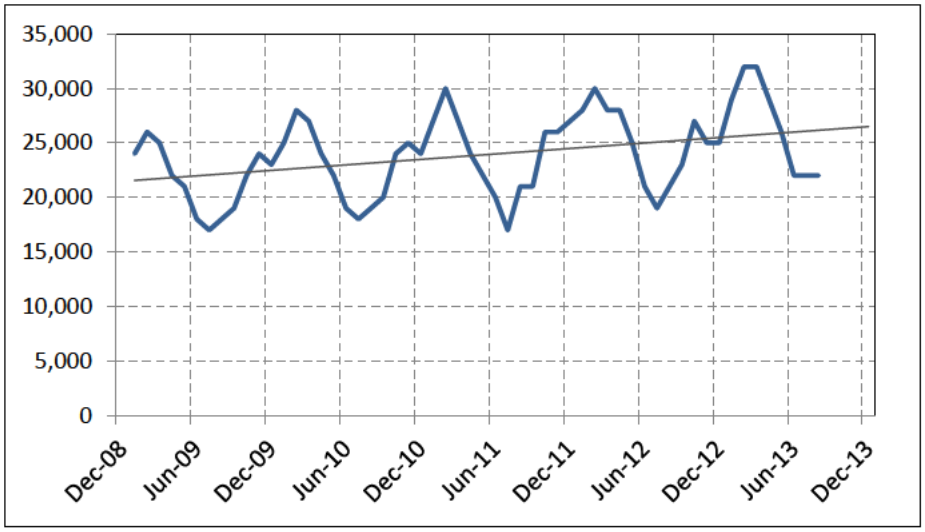


More detail is available at Transport's website:
http://www.transport.wa.gov.au/activetransport/25725.asp

3.4.2 Melbourne

Vicroads publishes summaries of bicycle count data, and has available more detailed datasets. The data presented here shows average daily bicycle counts across the total network of VicRoads' Group 1 sites.

Figure 12: Average Daily Bicycle counts — Total for Group 1 Sites in Melbourne



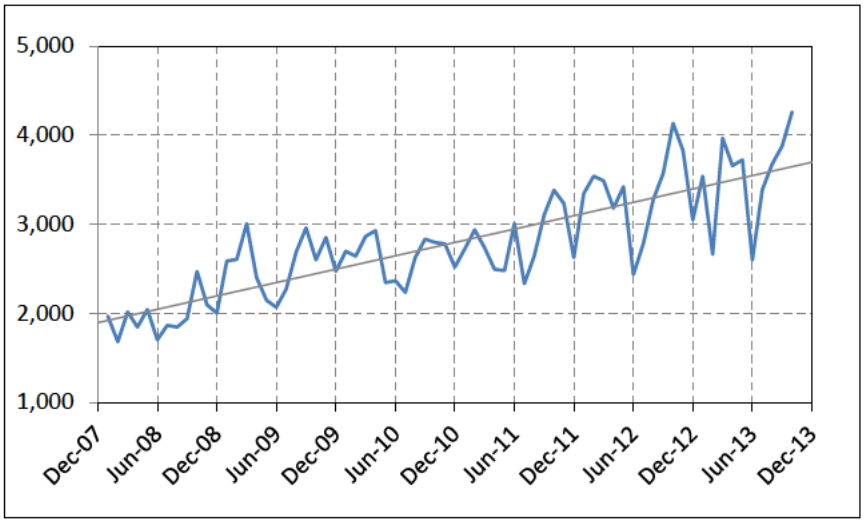
There is a strong seasonality (peaks in late summer and troughs in winter) and an increasing trend of approximately 4.5 per cent per year. More detail on the cycle volume data is available at the following VicRoads website:

https://www.vicroads.vic.gov.au/traffic-and-road-use/road-network-and-performance/road-use-and-performance.

3.4.3 Sydney

Roads and Maritime Services (RMS) publishes site-specific average annual daily traffic (AADT) counts for cyclists at a number of diverse locations throughout Sydney. Some data is also available on an hourly and daily basis enabling analysis of counts during morning and afternoon peak as well as for day of week. The following chart shows the total for five geographically diverse locations over the most recent five years.

Figure 13: Average Daily Bicycle counts — Total for five selected sites in Sydney



Note: The names of the five sites are (briefly) Bicycle path–The Rocks: Cycleway–Anzac Pde: Cycleway–Olympic Park; Cycleway–Baulkham Hills; and Cycleway–Captain Cook Bridge.

A linear fitted trend shows an increase of approximately 10 per cent per year. No analysis of seasonality was performed. Of the 20 site locations shown in the RMS Web tool — http://www.rms.nsw.gov.au/roads/using-roads/bicycles/statistics/index.html, eight show increasing trends, one is clearly decreasing, and for 11 sites, the time period is too short for a trend to be identified.

The increasing trends in cycle counts for the three cities above coincides with recent analysis published by BITRE (2014). See also Pucher et al (2010) for discussion and data on cycling exposure.

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ISSN 1440-9593

ISBN 978-1-925216-62-2

INFRA-2570

July 2015

This publication should be attributed in the following way: Bureau of Infrastructure, Transport and Regional Economics (BITRE), Australian cycling safety: casualties, crash types and participation levels, Information Sheet 71, BITRE, Canberra.

Acknowledgement
Prepared by Peter Johnston, with the assistance of Elly Jung and the Road Safety and Maritime Section, BITRE. For further information please contact roadsafety@infrastructure.gov.au

Use of the Coat of Arms

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CONFIDENTIAL REPORT

NOT TO BE CITED

TAC CLIENT CYCLIST RESEARCH PROJECT

BY EFFIE HOAREAU

April 2014

3.5.5 Helmet legislation

When asked whether participants agreed with the compulsory wearing of helmets, 91% stated that they did, 3% did not agree, another 3% were unsure and one participant did not know. Some of the reasons offered by those that did not agree with the legislation included not wearing a helmet made people ride more cautiously, it reduces the number of cyclists on the road, it is not necessary for every bicycle trip and that the choice to wear one should be left up to the individual.

3.5.6 Threatening behaviours

Participants' experiences of intimidating behaviours as cyclists were explored through three questions. First, participants were asked whether they had ever felt intimidated or threatened for their personal safety by the actions of other motorists when riding. A frequency distribution of their responses, depicted in Figure 22, indicates that 91% had felt intimidated or threatened by motorists on at least one occasion. Around 35% perceived that they experienced this behaviour often and an equivalent percentage felt intimidated rarely. Only eight percent stated they had never experienced threatening or intimidating behaviour from drivers.

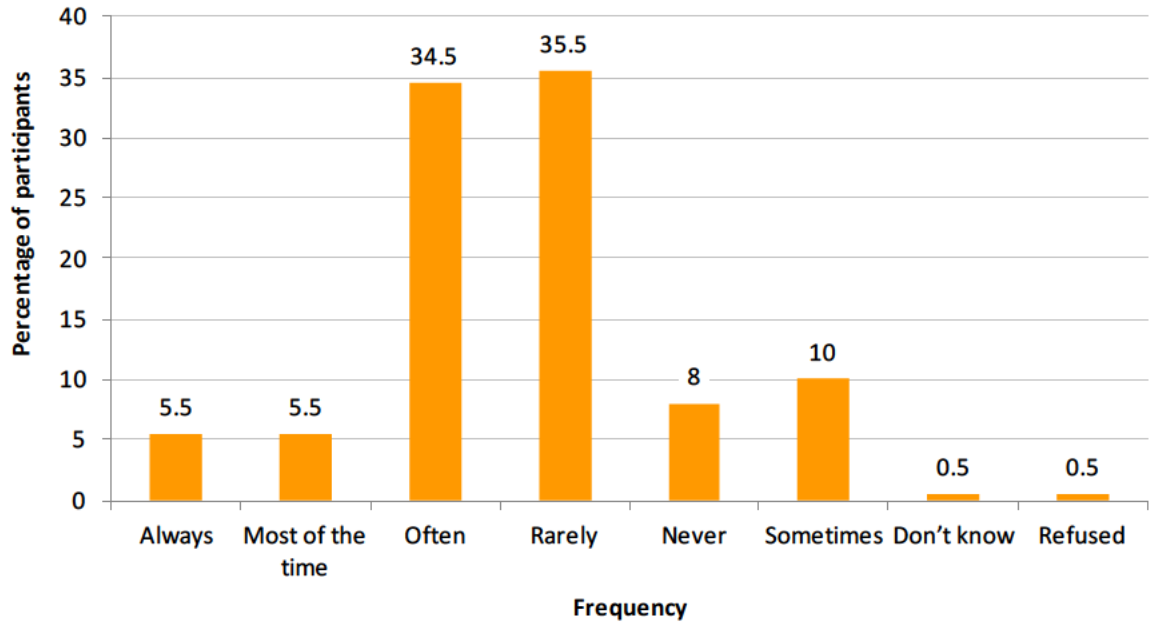


Figure 22 Frequency of perceived threatening behaviour from motorists

The second question sought to explore participants' perceptions of the level of intimidation or threat felt from other vehicles. Participants were asked to rate their perceived level of intimidation on a scale of 0 to 5 where zero is never, 3 is about half the time and 5 is all the time. In considering the percentage of participants who responded with either a '4' or a '5', results showed that vehicles most threatening to participants were trucks, followed by 4WDs or SUVs and buses. Least threatening were other cyclists, followed by pedestrians and

2 METHOD

2.1 QUESTIONNAIRE DESIGN

The questionnaire, developed with input from the TAC, comprised three main sections; pre crash, crash circumstances and post crash. Questions in the first and second sections aimed to establish a profile of the participant as a rider prior to the crash, and the circumstances of the crash, respectively. The third section sought information on participants' cycling behaviour following the crash as well as their opinions on cycling in general.

Most of the questions were of a multiple choice form however, some open-ended questions were included to elicit detailed responses. The final questionnaire was approved by the TAC prior to the commencement of interviews.

In advance of the survey, all of the TAC's eligible injured cyclist clients were mailed an introductory letter explaining the aims of the research and inviting them to participate in the survey. Potential participants who did no wish to participate were asked to contact the TAC to opt out.

2.2 INTERVIEW PROCEDURE

I-view, a market and social research data collection agency located in Richmond, Victoria was contracted to conduct the interviews and collect the data for this research. The questionnaire was administered using Computer Assisted Telephone Interviewing (CATI) technology

Interviewing commenced on Thursday 12 September, 2013 and concluded on Thursday 26 September, 2013. Calls were made between 5:00 pm and 8:30 pm on weekdays and between 9:00 am and 4:30 pm on weekends. A maximum of five call backs were made at different times and days to increase the likelihood of a live contact.

2.3 SAMPLE

The target population for this survey was TAC clients who had been injured in a crash involving a vehicle whilst on a bicycle. Potential participants were randomly selected from the TAC compensation database. To avoid response bias, only non-active clients whose compensation claims had been settled were selected.

In accordance with the TAC's Client Research Protocols the following exclusion criteria were applied in selecting the potential survey population:

- Client files with no corresponding Police Report
- Interstate files
- Staff files
- Risk files

- Workcover files
- Clients with accident anniversary during or within two weeks of the survey period
- Clients less than 16 years old
- Clients with catastrophic injuries

In addition to these criteria, clients who were not available within the survey period and those could not communicate in English were excluded during the interview screening process.

To achieve the sample, clients who had crashed in 2013 were sampled first followed by those who had crashed in 2012 but only after the 2013 sample had been exhausted. This process was repeated moving back chronologically until the sample was achieved.

2.4 SKETCHES

I-view interviewers invited clients who had agreed to be interviewed to provide a sketch of their crash. Consenting respondents were mailed a 'TAC pack' comprising a sketch pad, pencil, and ruler. A reply paid envelope was also supplied to increase the likelihood of a sketch being returned.

Upon receipt, the sketches were examined and categorised by road geometry and road user movement. To illustrate each category of crash type, scenarios presented in the sketches were recreated in diagrammatical form and are presented in this report.

2.5 ANALYSIS

Preparation of file for analysis

A file from I-view comprising responses from all 200 completed interviews was provided to the TAC to de-identify and supplement with demographic and crash variables. Two demographic variables were added; age at the time of the interview, and gender. Crash variables appended included the codes for Definitions for Classification of Accidents (DCA codes) atmospheric conditions and light conditions. Additional variables required to conduct the analysis were derived including age group and age at time of crash.

Analyses

Descriptive analyses, including frequencies and cross-tabulations, were utilised to provide a summary of the responses for each question, the results of which are presented with the use of charts. Qualitative data from open-ended questions were examined to identify any themes that emerged. These were categorised and where possible, represented with charts to show the frequency of comments or suggestions made.

2.6 CRASH MAPPING

Participants' crash report numbers were matched by VicRoads to corresponding geographic data from their crash information systems. Latitude and longitude coordinates were added to the crash file and mapped using Google Fusion Tables. The resultant map was examined for spatial patterns or clustering.

3.5.14 Road rules

Participants were asked to state what rules, if any, they believed needed to be changed or introduced to make cycling on roads safer. Responses to this open-ended question were grouped into eight categories and are represented graphically in Figure 32. The total exceeds 100% as several participants proposed more than one rule or suggestion.

Results showed that nearly 30% of respondents put forward a suggestion for either a change to a current rule or law, or, a proposal for a new one. More than half of participants within this category, referred specifically to introducing a mandated distance that vehicles must adhere to when passing cyclists, with most advocating a distance of one metre. Other suggestions included amending the road rules to give more prominence to cyclists thereby acknowledging the extent to which cycling has increased, and introducing rules that mandate minimum requirements with regard to bicycle lights and cyclist attire.

A few of the proposals within the 'Rules/laws' categories suggested rules for performing turns. These included giving cyclists the right of way when turning (no reference to direction, ie., left or right), having a designated area for cyclists to perform hook turns, laws preventing vehicles entering a roundabout beside a cyclist, and affording cyclists the same right of way as motorists at (multi-lane) roundabouts. Other suggestions within this category included laws that prevent motorists from driving in bicycle lanes, and allowing cyclists to ride in the middle of the lane. A small number of the suggestions proposed within this category were associated with cyclist identification rather than with cyclist safety. These included laws requiring the registration of bicycles and the licensing of cyclists.

Participants who stated they did not believe any road rules needed to be changed or introduced, comprised the next category, 'None'. Almost one quarter of participants (24%) did not offer any suggestions with comments such as 'No', 'None' or 'Can't think of any' representative of the type of responses in this category. A further 11% did not provide a response to this question and were grouped in the category 'No response'.

Rather than actual changes to road rules, 15% of participants suggested improvements to infrastructure, including traffic signals and the lowering of speed limits, to increase cyclist safety. In terms of infrastructure, the overwhelming response was the need for more 'dedicated' bicycle lanes, particularly on busy roads. Maintaining roads in good condition was also mentioned. There were also many responses referring to the conflict posed by the close proximity of parking bays to bicycle lanes. Solutions proposed included placing bicycle lanes between the footpath and parking bays, removal of parking bays, and better designed roads (eg. Copenhagen lanes) that increased cyclist conspicuity. In terms of traffic signals, participants consistently suggested dedicated traffic lights for cyclists. Two participants suggested speed limits needed to be reduced to increase cyclist safety.

Many participants' responses (15%) were focussed on awareness, attitudinal change and education, and as with the previous category, no actual rules or rule changes were proposed. Most comments within this category emphasised a need for more awareness of cyclists and their vulnerability, and in general, an attitudinal change towards cyclists. More specific

suggestions included advice on how to avoid dooring cyclists, and better adherence to current road rules by all road users (eg. correct use of signalling and indicators by cyclists and drivers, respectively). Other comments within this category related to cyclists needing to increase their concentration and awareness of their surroundings, and to increasing all road users' knowledge of road rules relating to cyclists.

The remaining responses (11%) related to enforcement, penalties, compliance and restrictions. These most commonly related to enforcing a distance between cyclists and cars, and in particular, the one metre rule. Others suggested areas of enforcement included the use of mobile phones by cyclists, penalties for motorists driving in bicycle lanes, harsher penalties for drivers who hit cyclists, policing of bicycle boxes, and mandatory punishments for drivers not respecting cyclist. Parking restrictions on popular cycling roads was another area participants thought should be looked at, as was eliminating parking on bicycle lanes and restricting cyclists from using narrow roads.

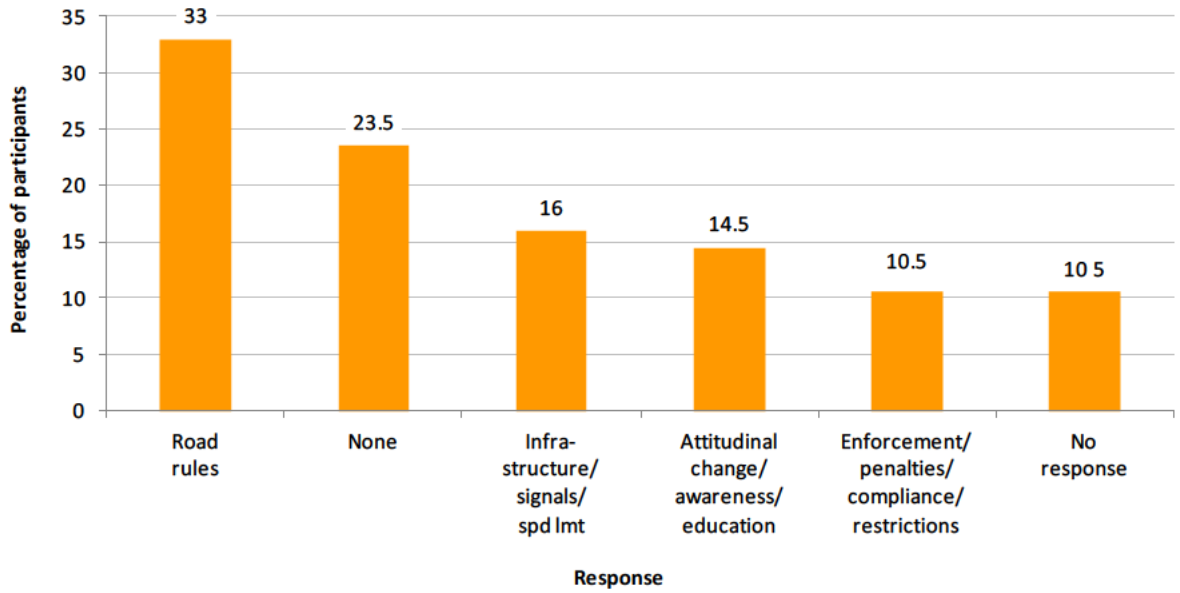


Figure 32 Road rules that need to be changed or introduced to increase cyclist safety

3.5.15 How can cycling be improved generally?

The final question in the survey asked participants whether they had any suggestions on how cyclist safety could be improved generally. This question was also open-ended and elicited a wide range of topics. Aggregation of related topics resulted in the eight categories depicted in Figure 33. Some responses comprised more than a single suggestion and therefore the sum of the percentages shown in the chart exceeds 100%.

Suggestions regarding education, awareness or respect formed the largest of the eight categories with 39% of participants proposing ideas in these areas. In general the message conveyed was better training and/or education of drivers to increase their awareness of cyclists and cyclists' rights on the road. Similar comments, though fewer in number, were

directed at cyclists. Many suggestions in this category proposed increasing awareness through media publicity campaigns to improve acceptance and tolerance of cyclists on roads. There were also a few suggestions of how to prevent dooring. About 4.5% of participants expressly mentioned respect with 'both cyclists and motorists need to be more respectful of each other' being representative of the suggestions made. The words education and awareness appeared to be used interchangeably with suggestions such as 'P-plater program should include cyclist awareness' and 'improved awareness of rules surrounding cyclists for drivers' being indicative examples. A few comments were critical of cyclists suggesting that they needed to be more aware of their surroundings.

The next most commonly offered suggestions related to infrastructure with 27% of participants contributing to this category. Almost all participants suggested cyclist safety could be improved through more bicycle lanes or paths with several supplementing their suggestions by proposing better separation from cars and better lane design (eg wider lanes, continuation of lanes/paths). This category was unique, in comparison to the others, for the uniformity of ideas offered.

Just 7% of participants suggested changes in enforcement, penalties or compliance. Suggestions included enforcing helmet usage, better compliance of road rules by cyclists and drivers, 'making bicycle lights compulsory', introducing a hotline to report dangerous behaviours, and penalising cyclists for not wearing helmets or not having bicycle lights.

All suggestions in the 'Visibility' category were associated with increasing cyclist conspicuity. Having bicycle lights at all times of the day was most commonly suggested, followed by a strong emphasis on cyclists needing to wear more reflective gear. Responses such as 'lights at night, bright clothing at night, using a bright light during the daytime' were typical of the suggestions offered in this category.

Although the previous question sought participants' views on how cyclist safety could be improved with changes to or the introduction of new road rules, 3% of participants offered suggestions on this topic in response to the current question. Comments varied from increasing flexibility regarding the rule for riding on footpaths to allow less confident cyclists to ride there also, to the mandatory use of reflective attire, and 'giving more rights to the riders'.

Suggestions which could not be grouped into one of the eight categories were placed in a category called 'Other'. Examples of the suggestions in this category covered areas such as bicycle registration (2%) and placing restrictions on cyclists (2%). The types of restrictions mentioned included not allowing cyclists to ride on certain roads, not allowing them to ride two abreast, and not allowing them on the road at all. More disparate comments included having less cars in the city and having cameras on helmets.

As with the previous question, not all participants offered a suggestion when asked how cyclist safety could be improved in general. Just over 10% of participants answered 'no', none' or 'not really'. A further 2% did not provide a response to this question.



Section 9: Bicycles

Bicycle Riding in Last 6 Months

In October and November, respondents were asked about their bicycle riding behaviour. 31% had ridden a bicycle in the last 6 months. Males, in particular males aged 30-49 were significantly more likely than females to ride.

In 2010, 25% of respondents had ridden their bike (however it must be noted that in 2010 the question was specifically about riding on the road).

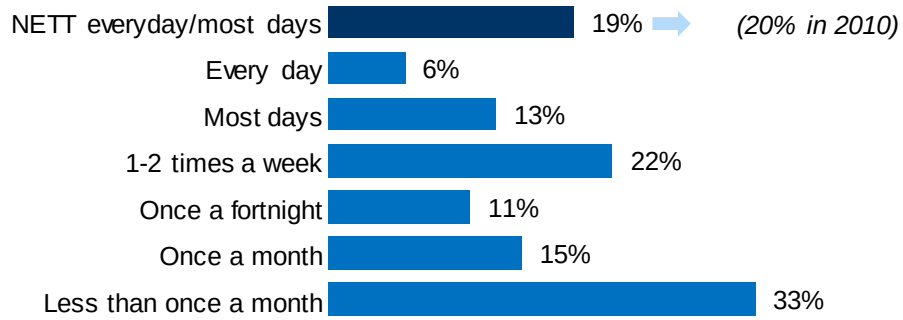
One in five riders ride their bike at least most days. Over half ride their bike less than once a fortnight.

The majority (nearly eight in ten) are riding their bicycle for exercise or relaxation. One quarter ride to commute to work or study.

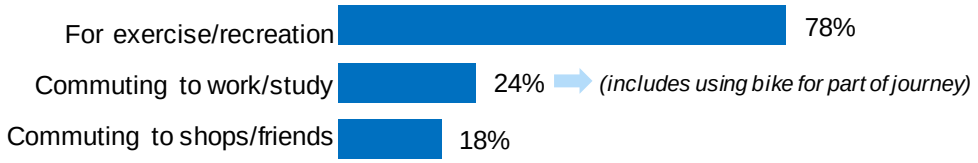
Amongst riders who do not ride to work or study, the following changes would encourage then to do so…

- Need to move home (20%)
- If I could use bike paths (15%)
- Better infrastructure for cyclists (12%)

Frequency of Bicycle Riding



Reasons for Bicycle Riding



RIDDEN A BICYCLE IN LAST 6 MONTHS – BY KEY DEMOGRAPHICS

	Q3 2010 Total (420) %	Q4 2012 Total (491) %	Gender		Male by Age				Female by Age				Location	
			Male (330) %	Female (161) %	18-20 (35) %	21-29 (113) %	30-49 (119) %	50+ (63) %	18-20 (28*) %	21-29 (49) %	30-49 (49) %	50+ (35) %	Melb (322) %	Reg Vic (169) %
Yes	25^	**31**	**44↑**	**19↓**	48	41	**46↑**	42	36	25	30	**7↓**	28	40

Base: Total sample (7 weeks) ↑ Indicates result significantly higher than other segments within subgroup ↓ Indicates result significantly lower than other segments within subgroup
Notes: * small base, interpret with caution ^ In 2010 the questions was 'In the last six months have you ridden a bicycle **on the road**?'
QPB6a. In the last 6 months have you ridden a bicycle? QPB6b. How often would you say you ride a bicycle?
QPB6c. For what reasons have you ridden? QPB6d. What would need to change for you to ride to work or a place of study?

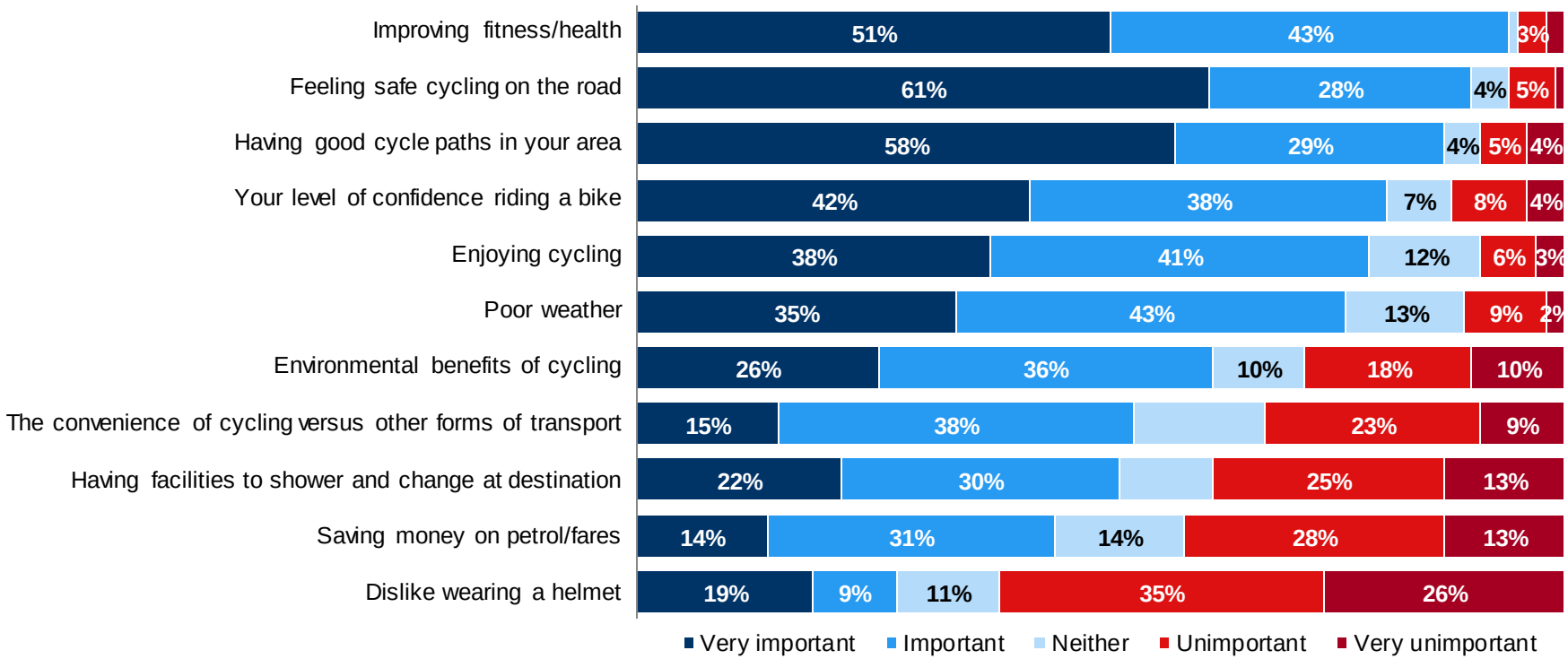
Importance of Influences on Bicycle Riding

This quarter, respondents were asked to indicate how important certain influences were on whether they rode their bicycles.

Improving health/fitness (important to 94%) and feeling safe of the road (important to 89%) were the most influential factors, followed by having access to good bike paths (important to 87%).

Wearing a helmet and saving money on petrol fares are unlikely to be the sole influence on deciding to ride a bicycle.

IMPORTANCE OF INFLUENCES



Base: Ridden a bicycle in last 6 months (192)
QPB6e. How important are the following factors in influencing you whether to ride or not ride?

Importance of Influences on Bicycle Riding (In Detail)

In looking for closely at subgroups several factors are significantly more influential to females, in particular feeling safe cycling on the road, level of confidence riding a bike, the environmental benefits of cycling and saving money.

Certain factors were significantly less important to regional Victorians when compared to their Melbourne counterparts, in pa rticular the environmental benefits, the convenience of cycling and saving money.

Importance of Influences (% Important / Very Important) – BY KEY DEMOGRAPHICS					
	Q4 2012 Total (192) %	Gender		Location	
		Male (150) %	Female (42) %	Melb (116) %	Reg Vic (76) %
Improving fitness/health	**94**	92	96	93	95
Feeling safe cycling on the road	**89**	85	**99↑**	90	90
Having good cycle paths in your area	**87**	83	95	88	84
Your level of confidence riding a bike	**80**	74	**95↑**	78	85
Enjoying cycling	**79**	79	76	76	84
Poor weather	**78**	75	79	77	75
Environmental benefits of cycling	**62**	52	**85↑**	67	**51↓**
The convenience of cycling versus other forms of transport	**53**	49	62	59	**43↓**
Having facilities to shower and change at destination	**52**	51	54	55	45
Saving money on petrol/fares	**45**	35	**66↑**	49	**34↓**
Dislike wearing a helmet	**28**	30	24	27	30

Base: Ridden a bicy cle in last 6 months (192)
QPB6e. How important are the f ollowing f actors in inf luencing y ou whether to ride or not ride?

Non Bicycle Riders

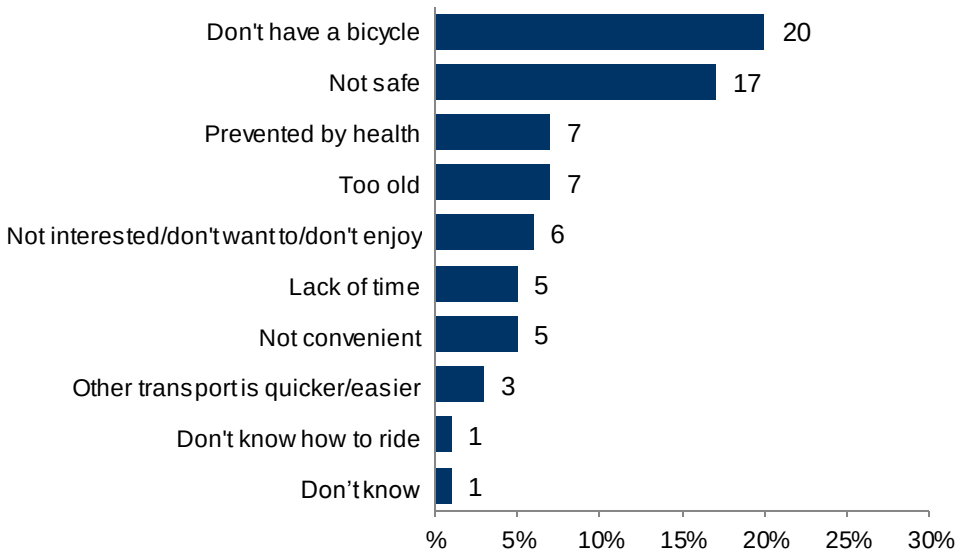
The main reasons cited for **not** riding a bicycle are simply not having a bicycle and not feeling safe.

When asked if they would like to be able to ride a bicycle 39% said they would. There are no significant differences in this willingness to ride across subgroups.

Some factors which may encourage non riders to start riding are…

- If I could use bike paths to get to where I need to go (27%)
- Better infrastructure for cyclists (12%)
- Buying a new bike/more suitable clothes (10%)

MAIN REASON FOR NOT RIDING A BICYCLE



NON RIDERS WHO WOULD LIKE TO BE ABLE TO RIDE – BY KEY DEMOGRAPHICS

	Q4 2012 Total (302) %	Gender		Male by Age				Female by Age				Location	
		Male (182) %	Female (120) %	18-20 (17*) %	21-29 (66) %	30-49 (63) %	50+ (36) %	18-20 (18*) %	21-29 (37) %	30-49 (36) %	50+ (29) %	Melb (207) %	Reg Vic (95) %
Yes	**39**	40	38	66	50	38	36	44	50	49	26	39	38

Base: Haven't ridden a bicycle in last 6 months (302) Note: * denotes low base, interpret with caution
QPB7a. Thinking about reasons why you don't ride a bicycle, what is the most important factor that prevents you from riding a bicycle?
QPB7b. Would you like to be able to ride a bicycle to get to work, your place of study or the local shops even for part of the journey (e.g. ride to a train station)?
QPB7c. What things would need to change for you to ride at least sometimes?