Motorcyclist Exposure on Victorian Roads (RSD 457)

VicRoads – Final Report

May 2008

UltraFeedback

vic roads

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Executive Summary

Overview

The current project was commissioned by VicRoads in 2007 with the intention of collecting data around motorcyclist exposure and behaviour on Victorian roads. The project involved the identification of roads, both urban and rural, experiencing the highest frequency of motorcycle travel. The project also involved the collection of data about the riders themselves – including, but not limited to, age, experience, trip purpose, time of day travelled, day travelled, and riding habits. These findings help to provide a clearer picture of 'who rides where', and may help to guide further research into more formal investigations of rider risk or statistical examinations of exposure.

Methods and Sample

A self-report survey instrument was developed in collaboration between VicRoads and UltraFeedback. The survey was then applied using a multi-modal (hybrid) survey approach, with data being captured both online and via hard copy.   A total of 1922 surveys were received across three separate data collection instances (waves). Respondents were sourced from:

- netrider.net.au (n=537)

- word of mouth (n=389)

- Australian Alliance Insurance (AAI; n=340)

- VicRoads registration database (Wave 3 only; n=279)

- online discussion boards and forums (n=158)

- Ulysses Clubs (n=110)

- Pink Ribbon Motorcycle Ride and Australian Motorcycle Expo, Melbourne (n=109)

Key Findings

A large number of insights were revealed in the data across a range of areas.

General

- Most riders are male; however, many differences between the genders were found

- Most riders do so recreationally, at least in part; relatively few use motorcycles for work or commuting purposes only

- Sports bikes are the most commonly ridden bike, followed by naked (standard) bikes

- Larger engine (500cc plus) capacities are the norm

Rider Behaviour

- Most riders ride at least 2-3 times per week

- Long rides are popular; significant numbers of riders ride for longer than two hours on some trips, travelling 100km or more

- The vast majority of trips occur in daylight hours

- The vast majority of trips are rider only (no passengers); a large proportion of riders reported rarely, if ever, carrying a passenger

- Riding patterns of rural and regional riders differ to those of metropolitan riders

Seasonality

- In general, motorcyclists rode more frequently in spring than in either summer or winter. Statistically there was no difference between winter and summer riding frequency

- Longer trips were more common in warmer weather

- Evening rides were not significantly more popular in summer than at other times (despite daylight saving)

- Riding for fun was most common in summer, while riding for commuting purposes only was most common in winter

Roads most travelled

The top 10 metro and rural/regional roads appear below. Note that the term 'to' refers to a range, rather than a direction, i.e. 'Abbotsford to Donvale' implies travel in the geographic area between the two locations, rather than specific trips from Abbotsford to Donvale.

Metropolitan			Rural/Regional		
Ranking	**Road and Suburb(s)**	**n**	**Ranking**	**Road and Region(s)**	**n**
1	Monash Freeway; Malvern to Narre Warren	178	**1**	South Gippsland Highway; Dandenong to Korumburra	85
2	Eastern Freeway; Abbotsford to Donvale	110	**2**	Maroondah Highway; Lilydale to Mansfield	73
2	Princes Freeway; Altona to Geelong	104	**3**	Princes Freeway/Highway; Narre Warren to Bairnsdale	53
2	Western Ring Road; Greensborough to Altona	85	**4**	Hume Highway; Mickelham to Wodonga	52
5	Nepean Highway; Elsternwick to Mornington	78	**5**	Calder Freeway; Woodend to Essendon	52
6	Hoddle St/Punt Road; Clifton Hill to St Kilda	77	**6**	Great Ocean Road; South coast	49

Metropolitan			Rural/Regional		
Ranking	**Road and Suburb(s)**	**n**	**Ranking**	**Road and Region(s)**	**n**
7	Princes Highway/Dandenong Road; Windsor to Dandenong	76	**7**	Warburton Highway; Lilydale to Warburton	36
8	CityLink; Strathmore to Malvern	62	**8**	Midland Highway; Mansfield to Bendigo	33
9	Burwood Highway; Burwood to Belgrave	58	**9**	Great Alpine Road; Wangaratta to Lakes Entrance	33
10	Maroondah Highway/Whitehorse Road; Box Hill to Lilydale	55	**10**	Bass Highway; Lang Lang to Philip Island	31

Implications

The current project provided a cross-sectional snapshot of Victorian motorcyclists. The findings discussed in this report could be used to drive a number of initiatives such as:

- increased research and safety measures for high-usage routes

- targeted research tailored to the behaviour of specific motorcyclist segments, such as riders of certain bike types

- maximising the temporal and content effectiveness of safety communication strategies

- establishing further dialogue between motorcyclists and relevant governing bodies (most respondents were very keen to provide further data and participate in additional waves)

Section A

Part I - Introduction and Context

Exposure to risk is a fundamental concept in road safety. Increases in crash numbers over time can often be explained by changes in exposure, rather than any real increase in risk to a certain population. Historically in road safety, exposure to risk has been measured in vehicle kilometres travelled, or where this is not available, vehicle registrations and licences. None of these measures provides a reliable indicator of exposure for motorcyclists. Without adequate motorcycle exposure data, it has been difficult to quantify the benefits of road safety measures to improve motorcycle safety.

Currently the Australian Bureau of Statistics (ABS) Survey of Motor Vehicle Travel is the most commonly used measure of exposure. It is unlikely that this will provide an accurate measure for motorcyclists as the numbers are too few to provide reliable results. The ABS acknowledges that for motorcycle travel the relative standard error can be too great for practical use, especially when comparing travel from one year to the next.

Registrations are a valid measure of exposure only in circumstances where the population is mostly homogenous. However, variations in age and purpose for riding create difficulties for using this measure amongst motorcyclists. Registered motorcycles may lie dormant for the majority of the year, or they may be ridden almost every day. Similarly, motorcycle licences may be renewed for a period of years, within which time the individual may stop riding, or no longer own a motorcycle. Exposure based upon these measures has the potential to be highly inaccurate.

As motorcycle use is quite varied between different groups of motorcyclists, a multi-staged approach has been undertaken to determine motorcyclist exposure on Victorian roads. Stage 1 involves the processing and reporting of traffic count data, and is being conducted internally at VicRoads. Analysis of these data should provide an indication of the proportion of motorcyclists on various roads compared to other vehicles, and should also identify the volume of motorcycles on various roads to a level of detail that includes day of the week and speed zones. Stage 2 involves the collection of household travel data over a 12-month period, and is being conducted in conjunction with the Victorian Department of Infrastructure. It involves the maintenance of a travel diary to ascertain the number of journeys taken, trip details, rider demographics, and motorcycle details.

The current project, and the subject of this report, represents Stage 3. The project involved the identification of roads, both urban and rural, that have the highest frequency of motorcycle travel. The project also involved the collection of data about the riders themselves – age, experience, motorcycle trip purpose, time of day travelled, day travelled, and riding habits.

Project Objectives

The fundamental objective of the current project was to investigate and report on the riding patterns of Victorian motorcyclists, in order to identify the frequency and type of riders on the most popular motorcycling roads in Victoria. Other specific objectives included:

- the identification of the 20 most frequently used urban roads;
- the identification of the 40 most frequently used rural (non-urban) roads; and
- an analysis of the impact of seasonality upon riding patterns.

These objectives are fully addressed in this report.

Part II – Method Summary

Methodological Overview

This project utilised a multi-modal (hybrid) survey approach, with data being captured both online and via hard copy. The hard copy (paper-based) mail-out surveys were used to provide a data collection method for those not internet-enabled, and to balance any issues that may have arisen over a uni-modal data collection protocol.

Collection of data occurred in three waves over the entire project period, in order to account for seasonality. Attrition from the study was compensated for by re-recruitment in order to maintain appropriate numbers of subjects for each wave.

Throughout the project, real-time reports and summary analyses were available via the online data capture.

Project Timelines: Collection and Reporting Stages

Three complete waves of data collection occurred.

Wave 1 data collection commenced 23 August 2007, and ran until 19 September 2007.

Wave 2 data collection commenced 17 October 2007 and ran until 14 November 2007.

Wave 3 data collection commenced on 1 February 2008, and ran until 26 February 2008.

By the end of Wave 3 data collection, 1922 complete surveys were received – 475 from Wave 1, 596 from Wave 2 and 851 from Wave 3. Of the 1922 completed surveys, 1194 were provided by unique respondents. These total figures comfortably exceed the initially specified figure of 1200 responses.

Part III – Instrument Development

The instrument development process was a collaborative exercise between VicRoads and UltraFeedback. A number of steps were required to develop the final survey instrument. The survey instrument itself is contained in Appendix A.

Survey Criteria

A set of specific criteria were in place at the start of the project. These criteria identified the key areas that the survey was required to address. These areas were:

Who is riding?	Gender, age, experience, licence, etc.
What type of motorcycle are they riding?	Engine capacity, body type, etc.
Where are they riding?	Type of roads, name of roads, etc.
How far are they riding?	Distance (kms), time (minutes/hours), etc.
Are they riding in groups?	Informal groups? Organised groups? etc.
When are they riding?	Time of day, day of week, etc.
Are they carrying a pillion passenger?	How often? How far?
Why are they riding?	Commuting? Pleasure? Employment?

While other aspects of motorcycle usage and behaviour were also included in the survey, the above set comprised the 'key issues' that drove the survey development process.

Initial Question Creation and Consultation

A body of potential survey items (questions) was generated by UltraFeedback at the start of the project. These questions incorporated the key issues/areas, as well as further measures deemed to be of interest to the project. This allowed for the creation and forwarding of the draft instrument.

The draft instrument was reviewed by project liaison at VicRoads. Feedback was collected and a consultation process between UltraFeedback and VicRoads was used to clarify and refine the instrument further. The question creation and subsequent consultation process took approximately two weeks.

Survey Pilot

A beta version of the survey was piloted with 44 motorcycle riders. These participants were drawn from the pool of VMAC members, motorcycle riders among VicRoads staff, and UltraFeedback contacts.

The pilot survey was conducted online, and provided further feedback for the refinement of the final instrument. The survey was finalised after all feedback and results from pilot participants had been taken into account and discussed with VicRoads. The finished instrument was then printed as well as prepared for online distribution.

Note that pilot participants were given the option to participate in the survey proper; the option was taken up by all participants bar one.

Part IV – Detailed Methodology

Sampling

Obtaining a representative sample was the largest methodological challenge for the project. As of 2006, Victoria had 114,438 registered motorcycles (ABS Motor Vehicle Census, 2006). Assuming that this equates to a commensurate number of riders, the population of interest was (is) close to 100,000.

With a population of 100,000 or more, a sample figure of approximately 1100 was required to ensure generalisation at a lower (better) than standard sampling error of +/- 3% (Yamane, 1967). UltraFeedback aimed above this figure at 1200, a figure more than robust enough to allow data cutting and subsequent generalisation of sub-sample data to target segments as well (e.g. metro vs. rural/regional riders). This projected sample size was, in the end, comfortably exceeded (see *Sources of Data,* below) with a total of 1922 surveys received.

Note that the 1200 figure, based on 400 per wave, also allowed for each wave to be treated as its own full sample for seasonal generalisability purposes.

Sources of Data

At the commencement of the project, there was no accessible database (apart from those unavailable and held at VicRoads) that would allow for true random sampling of the entire Victorian motorcycle population. However, UltraFeedback identified data sources that allowed for a broadly representative sample to be obtained. These sources were:

netrider.net.au (n=537). The netrider website receives thousands of unique hits per month. A banner advertisement linked to the survey website provided survey participants from a good cross-sectional sample of riders.

Word of mouth (n=389). This group comprised respondents from a number of different sources. These include respondents who stated they heard about the survey from a friend or fellow rider (n=105), or via a notice in a motorcycle store or a noticeboard at work or motorcycling club (n=23). Others in this group included pilot participants and riders sourced from UltraFeedback contacts (n=94), as well as those who did not specify where they heard about the survey, or who could not be traced to an existing database of respondents (e.g. those responding anonymously via hard copy; n=167).

Insurance company Australian Alliance Insurance (AAI; n=340). This company is one of the largest insurers of motorcycles in Australia/Victoria. This group provided a good overall sample, across a range of demographics. A database of 274 names and email addresses were provided to UltraFeedback and potential respondents were emailed an invitation to participate. Across all Waves, 161 unique respondents completed the survey (response rate of 59%).

VicRoads registration database (n=279). Legislation amendments in late 2007 enabled access to previously inaccessible data for the purposes of road safety research. Just prior to Wave 3, VicRoads supplied UltraFeedback with a database of 1024 randomly selected individuals with registered motorcycles; from these, 927 randomly selected individuals were mailed a hard copy version of the survey. The response rate from this group was 30%.

Online discussion boards and forums (n=158). Postings advertising the survey were placed by UltraFeedback staff on a number of online discussion boards and forums, including the Motorcycle Riders Association of Australia (mraa.org.au) and Motorcycling Australia (ma.org.au). Respondents themselves also posted links on other websites, including Melbourne Star Riders (melbournestarriders.com) and Kawasaki Sportsbike Riders Club (ksrc-au.com).

Ulysses Club (n=110). The Ulysses Club was established in 1983 as a motorcycling club for those over 50 years of age. A Ulysses member heard about the survey 'on the motorcycle grapevine' and spread the word throughout the club via direct email to members and a posting in their quarterly newsletter, *Riding On*.

Pink Ribbon Motorcycle Ride (PRMR) and Australian Motorcycle Expo, Melbourne (n=109). The PRMR is an annual event to raise funds for breast cancer research. The PRMR organisers were contacted during the Wave 1 data collection period and agreed to include a hard copy of the survey in their pre-registration mail-out kit. Hard copy surveys were also handed out at the PRMR stand of the Australian Motorcycle Expo in Melbourne on 5-7 October 2007. Approximately 1000 surveys were distributed via these two means, resulting in a response rate of approximately 11%.

Two of the above sources (netrider and AAI) replaced sources of similar nature (MCnews and QBE Insurance) from the original tender proposal. This replacement occurred in order to eliminate any third-party demands upon the project. The purpose and scope of the project was fully explained to all data source partners before any agreements were reached, and the final nature of these agreements was fully disclosed to VicRoads prior to the project's commencement.

Data Collection method

A hybrid online/paper based approach was used for data collection. Mail-based survey mechanics are generally well known and thus require little explanation. The online approach required a more sophisticated set of processes; these are outlined in the following section (Part V).

Incentives

A single lottery-style incentive – $500 worth of motorcycle protective gear – was offered to participants across all three waves. This incentive was discussed with VicRoads before implementation. Each survey response provided a singular entry into the prize lottery, so a respondent who participated in each data collection wave had three 'tickets' in the lottery. The prize lottery was conducted on 7 April 2008, and the winner notified on 9 April 2008.

Seasonality

Multiple discrete waves of data collection were conducted to account for seasonality. This took place to account for factors such as weather, hours of light, lifestyle trends (e.g. more holidays taken in summer), etc. Wave 1 (23/08/2007 to 19/09/2007) represented a late winter data collection, Wave 2 (17/10/2007 to 14/11/2007) comprised late spring, and Wave 3 (01/02/2008 to 26/02/2008) occurred in late summer.

Selection Bias

It is difficult to ascertain the degree of any potential selection bias when the starting population parameters are not available. UltraFeedback believes that its two-pronged random sampling approach combined with an *ad-hoc* quota sampling capacity minimised the threat of selection bias.

Some differences between source groups were noted. Ulysses Club members were generally older, and had greater riding experience than other source groups, whilst netrider respondents were, on average, younger and less experienced. The following table compares data source on some selected key variables (based on unique respondents only):

	Source						
	netrider	**Online forums**	**word of mouth**	**PRMR/ Motorcycle Expo**	**AAI**	**Ulysses Club**	**VicRoads database**
n	258	91	254	80	161	71	279
Age mean (years)	35.14	44.35	44.00	45.08	39.06	54.16	45.36
Riding experience – mean (yrs)	10.24	18.54	18.50	19.99	15.46	27.61	22.30

	Source						
	netrider	Online forums	word of mouth	PRMR/ Motorcycle Expo	AAI	Ulysses Club	VicRoads database
Category	% within type	% within type	% within type	% within type	% within type	% within type	% within type
Typical or most frequent bike use							
Commuter	13	11	10	4	11	1	11
Recreational rider	21	31	41	54	44	56	49
Both commuter and recreational rider	66	52	46	43	43	41	36
Other (please specify)	1	6	4	0	2	1	3
Frequency of riding category							
Frequent (ride every day)	33	30	20	13	14	13	10
Regular (ride most days)	39	31	24	22	29	27	26
Semi-regular (ride perhaps once a week)	19	29	32	38	38	47	33
Intermittent (ride perhaps once a fortnight)	7	8	16	22	13	9	20
Very occasional (ride once a month or less)	2	3	8	6	7	4	11

Table A.3.1: Differences in key variables between respondents from differing sources

Population segments – for general and sub-sample analyses - were self-reported. Strata with numbers below minimum threshold (30) for robust analysis were generally not included in detailed data examination.

Some of the different segments identified include:

- Gender (male/female)
- Riding Experience (in years)
- Licence status (learner, probationary, restricted, full)
- Motorcycle type
- Age (years)

Note that age and riding experience were collected as an integer figure rather than in group brackets. This practice allows for the flexible creation of group brackets, whilst also permitting more sophisticated analyses based on ratio data.

Acknowledged Methodological Limitations

The primary limitation of the methodology was the inability to truly randomly select from the entire population of Victorian motorcyclists. This limitation was mitigated, to a degree, with the availability of the VicRoads registration database for Wave 3 data collection (data that were unavailable during the first two waves due to legislation constraints). That aside, UltraFeedback was confident that both the data sources used, and the sample size obtained, provided a good variety of respondents across the motorcycling population.

A secondary limitation of the methodology pertains to the self-report survey medium: people make mistakes, forget details, etc. This is a recognised issue across the research spectrum. Ultrafeedback and VicRoads both felt that the strengths of the method (e.g. non-invasive, flexibility of response time, etc) far outweighed the negatives for the purposes of this project.

Part V – Data Collection Processes

Data Collection: Hard Copy (Paper)

Paper versions of the survey were administered in conventional fashion. Respondents received the hard copy version and a reply-paid envelope. The survey was completed at their leisure, and then mailed (or, if preferred, faxed) back to UltraFeedback and the survey data manually entered into the database. The cover page of the hard copy survey also noted the URL to the survey website and invited participants to complete the survey online – some respondents chose this option.

No hard copy surveys were distributed in Wave 1. Approximately 1000 were distributed in Wave 2, with 109 returned (81 via hard copy, 28 completed online); they were included as part of the registration package for the Pink Ribbon Motorcycle Ride (PRMR), conducted on 21 October 2007. Some were also distributed to participants of the PRMR who registered on the day of the ride, and others were distributed by PRMR organisers at the Australian Motorcycle Expo, Melbourne on 5 to 7 October 2007. Hard copy surveys distributed by the PRMR organises were not always completed immediately – 77 were returned during Wave 2 and 32 were returned during Wave 3 (4 hard copy, 28 online).

In Wave 3, 242 of the 279 participants sourced through the VicRoads licensing database provided data via hard copy survey. The remaining 37 were sent a hard copy and completed the survey online.

Data Collection: Online

The online survey process functioned in one of two ways:

Method 1:

Where an existing contact database was available, potential respondents were emailed an invitation to participate. The email contained a brief description of the study, its purpose, and the estimated time required to complete, as well as a brief description of where the respondents' details were obtained from.

Respondents clicked a link within the email (or pasted the provided URL, if links were not enabled) which took them directly to the survey proper (emailed links were unique to each potential respondent). Respondents completed the survey by clicking the relevant option(s) or typing in required data; response data was saved and uploaded every new page load.

The AAI participants were captured using this technique, as were UltraFeedback contacts. When no existing database was available, an alternative method was required (see below).

Method 2:

Method 2 allowed potential respondents to generate their own unique login at commencement of the survey. Participants sourced via netrider, online discussion forums, some 'word of mouth' sources and Ulysses club members were captured this way.

The potential respondent clicked a banner advertisement, or a link posted on a discussion forum or forwarded to them. Where a link was advertised via (hard copy) newsletter or noticeboard posting, the URL was typed directly into a web browser window.

Respondents were automatically taken to the survey 'home page', which explained the study, and what was required to participate (information commensurate with Method 1). The home page also contained instructions for each respondent to complete the survey only once per Wave as duplicate entries would be omitted.

The respondent then clicked to start, whereby a username and password were automatically generated and the respondent logged in to the survey. The first question was mandatory – one that had to be answered in order to proceed – requested a valid email address (for the purposes of the prize draw and validation of respondent details). Once an email address was entered and the page saved, the survey proper commenced.

Method 2 was not exploitable (e.g. multiple responses from same respondent) as the email was validated (checked for duplication) against the existing respondent list. Further redundancy measures were also taken as part of standard data integrity measures, including checking different combinations of responses for duplicate entries and omitting suspect entries.

Online Features – Key Points

Online participants initially arrived via a link at the survey homepage. This page contained a brief summary of the research, an introductory message, and a link to start the survey proper. Key points about the online survey itself include:

- The questions were presented in a format congruent with (generally identical to) the hard copy survey, in exactly the same order;
- Questions not relevant (for example, those ruled out based on previous answers) were skipped;
- Questions were saved at the end of each page (group of questions) so data were not lost; the respondent was always permitted to finish the survey later without having to start the whole survey again; and
- Response options depended on the question itself, but all questions requiring selection of a pre-determined option could be answered via one or two mouse clicks.

Response Rates

It was not feasible to define a response rate in the traditional sense for this project due to the method of data collection. Response rates, as defined conventionally, require a known denominator figure to enable calculation. Such a figure was not available in this instance, as there was no way of knowing exactly how many people viewed the survey invitation at locations such as the netrider.net.au, or on the online discussion forums.

A specific denominator figure was available for the AAI group for Wave 1. A total of 274 invitations were sent to this group, with 161 (unique) valid surveys received, representing a response rate of 59%.

An approximate denominator figure was available for the PRMR/Motorcycle Expo group for Wave 2. Approximately 1000 hard copy surveys were distributed during September and October 2007, with 109 surveys returned, giving a response rate of around 11%.

A response rate figure was also available for Wave 3 participants sourced through the VicRoads registration database. A total of 927 surveys were sent out, with 279 returned - a (raw) response rate of 30%. Note that this figure does not take into account undelivered mail or inaccurate contact details.

Note that response rate in and of itself is only important in so far as it limits sample size. The total sample size of 1,922 exceeded initial predictions and can be considered very robust.

UltraFeedback

Part VI - Sample Overview

At the end of data collection a total of 1922 survey responses had been recorded. Wave 1 contained 475 respondents, Wave 2 attracted 596, and Wave 3 contained 851 participants.

Unique respondents: A total of 1194 unique respondents participated in the project. Wave 2 contained 276 unique respondents, while Wave 3 contained 443 unique respondents. Respondents were considered unique if they did not answer a previous wave version of the survey.

Gender: Most respondents (89%) across all three waves were male.

Age: Mean respondent age across the three waves (unique respondents only) was 41.39 years. Ages ranged from 17 to 67+ years. Age was normally distributed (no appreciable skewness or kurtosis).

Riding experience: Average (mean) riding experience was 18 years (SD=13.8 years). Experience was skewed somewhat towards the low end (see figure 1). Spikes were also evident at 10, 20, 30, and 40 years, representing the propensity for respondents to estimate figures in "round numbers".
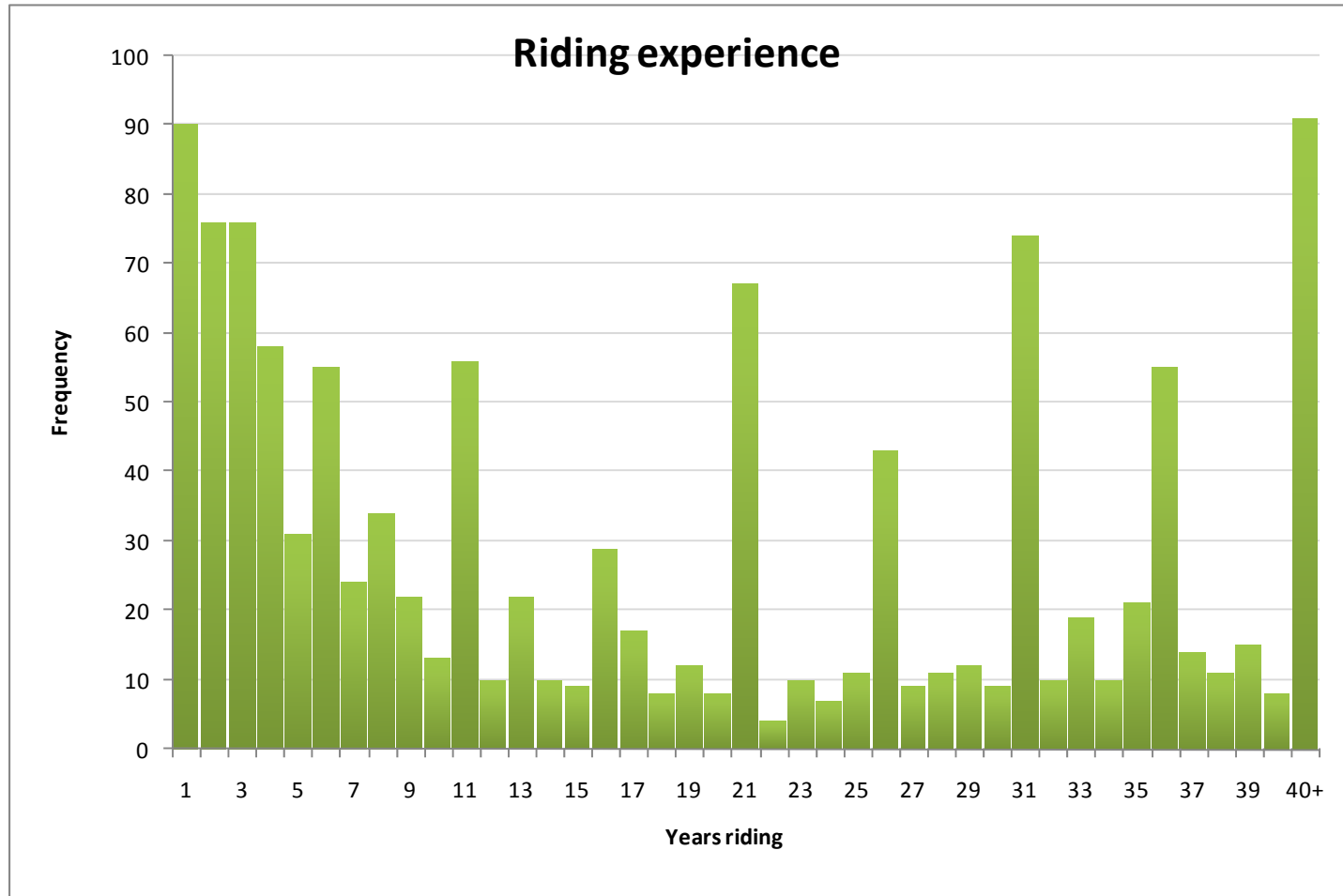
Figure 1: Riding Experience in years (n=1171)

Riding experience is strongly (but not perfectly) correlated with age (r=.63, p<.01).

Section B: Results

The results section is split into two parts: General and Advanced.

This General section outlines the general findings and results of the survey across all three data collection waves. Waves have been directly compared on some measures – especially those where seasonal impacts might be observed – and are used as a grouping variable for some applicable inferential analyses (i.e. analyses where statistical significance testing occurs, such as group versus group).

The Advanced section contains more detailed analyses that delve deeper into the more topical and relevant aspects of the data. Analyses such as rider behaviour by bike type, roads travelled by bike type are presented in this section.

Unless otherwise stated, significance thresholds for inferential analyses have been set to an alpha (confidence level) of 0.05. That is, any statistically significant finding is (at least) 95% likely to be due to 'real' effects, and not chance or random error.

Results presented are based on differing sample compositions, depending on the nature of the analyses. Analyses that refer to a particular rider or motorcycle type are based on unique respondents only (n=1194); results referring to riding patterns, behaviours, or roads travelled are based on the entire sample (n=1922).

Section B1: General Results
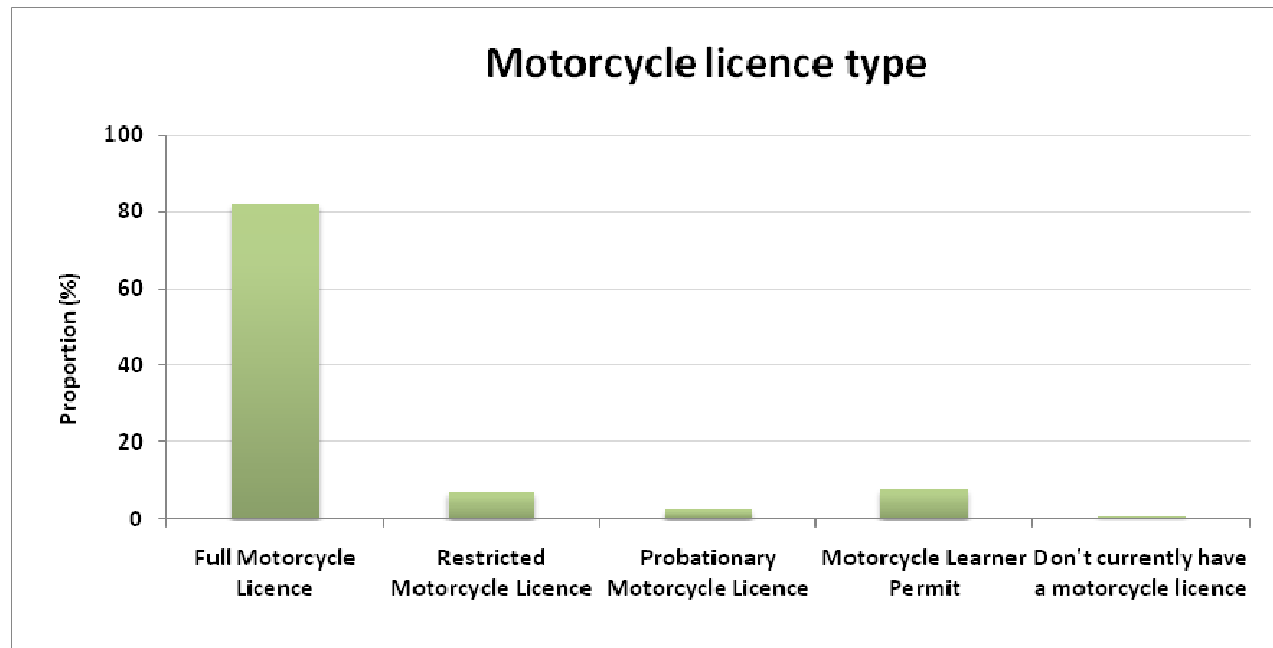
Part I - The Riders

Licence Types

Figure 1.1:   Type of Motorcycle Licence held

The majority of the 1185 unique respondents, as shown in figure 1.1, possessed a full motorcycle licence. Nine percent were on a probationary or restricted licence, and a smaller number (8%) were on a learner's permit. Seven respondents (0.6%) said they did not currently have a motorcycle licence.

Almost all (97%) of respondents reported a current full car driver licence. Only 1% of respondents did not have any sort of car licence.

Note that a small handful of respondents failed to provide data for this item, which accounts for why the total n for this analysis is not 1194. This explanation applies to all subsequent analyses where unexpected response numbers are displayed.

Car Possession

The vast majority of respondents (90%) reported having a car in addition to their motorcycle(s). No appreciable difference between waves or gender was evident.
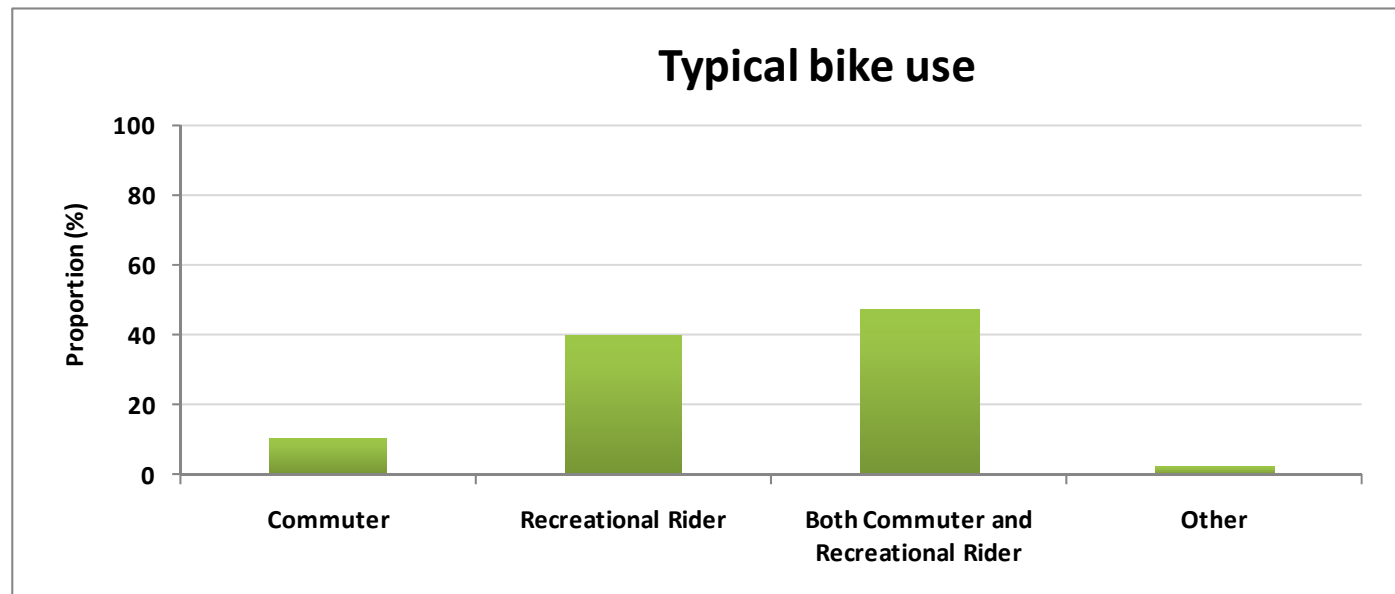
Typical bike use

Figure 1.2: Typical bike use

Figure 1.2 shows that almost half (47%) of the 1184 unique respondents classified themselves as both a commuter and a recreational rider, with 40% riding typically for recreation. Only 10% of respondents stated that they rode their motorcycle primarily for commuting purposes.

Among those who ride primarily as commuters, some differences in engine capacity of main bike can be noted. Commuters were significantly more likely to ride a bike between 126 and 260cc, and between 501cc and 750cc than larger bikes of 751cc or more.

Crashes

Approximately one-fifth (21%) of (unique) respondents (n=1095) reported that they had been in a serious motorcycle accident – one that required hospitalisation – at some point in their motorcycling careers. This figure did not vary across waves. Female riders were significantly less likely than male riders to have reported being in a serious crash. Those whose main motorcycle was 501cc or greater were significantly more likely to have reported being in a serious accident than riders of bikes between 126 and 260cc. There was no appreciable difference in incidence of serious crashes between riders of different bike types.

Unsurprisingly, the likelihood of having been in a serious accident increased with age and riding experience. Those who reported having been in a serious crash were, on average, significantly older than who had not been in a serious crash (44.65 years versus 41.73 years). A similar pattern can be noted for riding experience, with those having had a serious accident having a mean of 24.15 years riding experience versus 16.29 years of riding experience for those not having had a serious accident.

Rider Categorisation

Responses to the question 'what category of motorcyclist best describes you?' are shown in figure 1.3 below. Note that the categories are not exclusive; respondents were able to select more than one category, if they felt so inclined. On average, respondents selected two categories each.
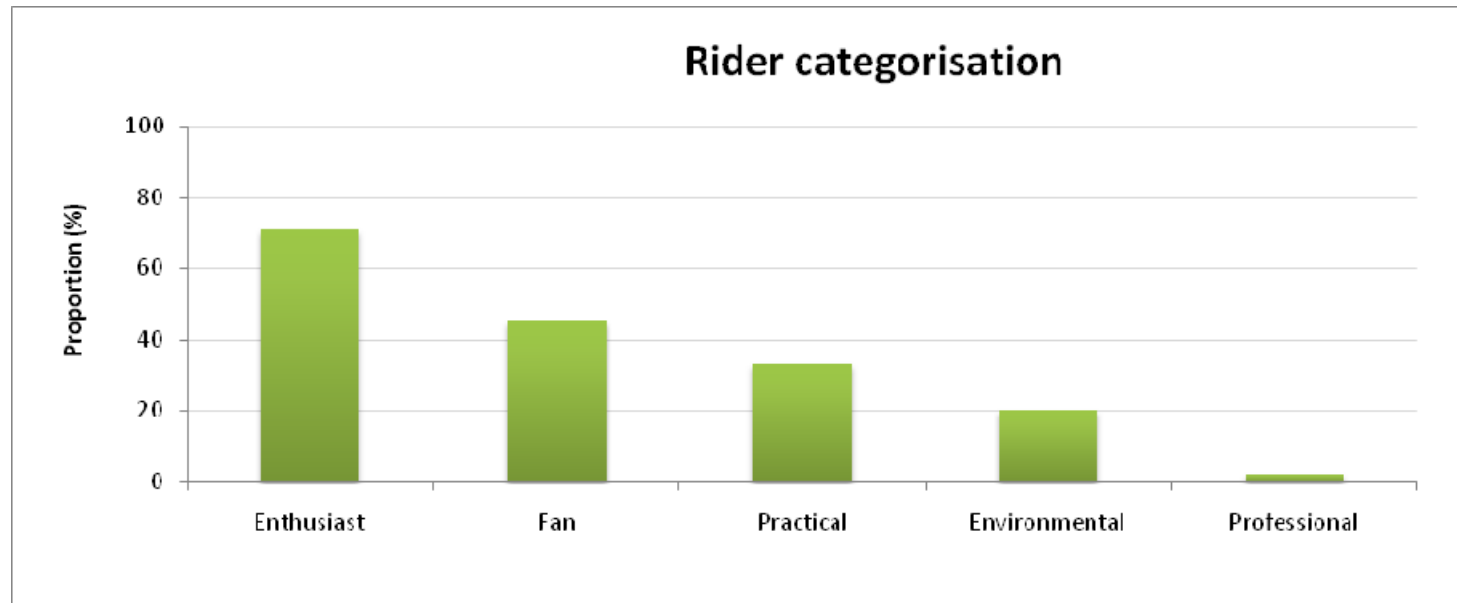
Figure 1.3: Rider Categorisation (n=1194)

Nearly three-quarters (71%) of the sample described themselves as motorcycle enthusiasts, or someone who rides because they love motorcycles. Around half (45%) stated that they rode because riding was more fun than a car. More than a third (33%) indicated that they rode because it is cheaper and easier than a car, while one fifth (20%) reported riding because it is more environmentally friendly than driving a car. Only 2% of the sample reported riding because it was part of their job.

Note that because categorisations are not exclusive, the percentage bars sum to more than 100%.

Part II - The Motorcycles

Number of Motorcycles owned

Average number of motorcycles owned across unique respondents was 1.58. Most respondents (65%) reported having only one motorcycle, whilst 22% reported having two. Three respondents reported owning 10 or more motorcycles. Further breakdown of number of bikes owned is shown in figure 2.1.
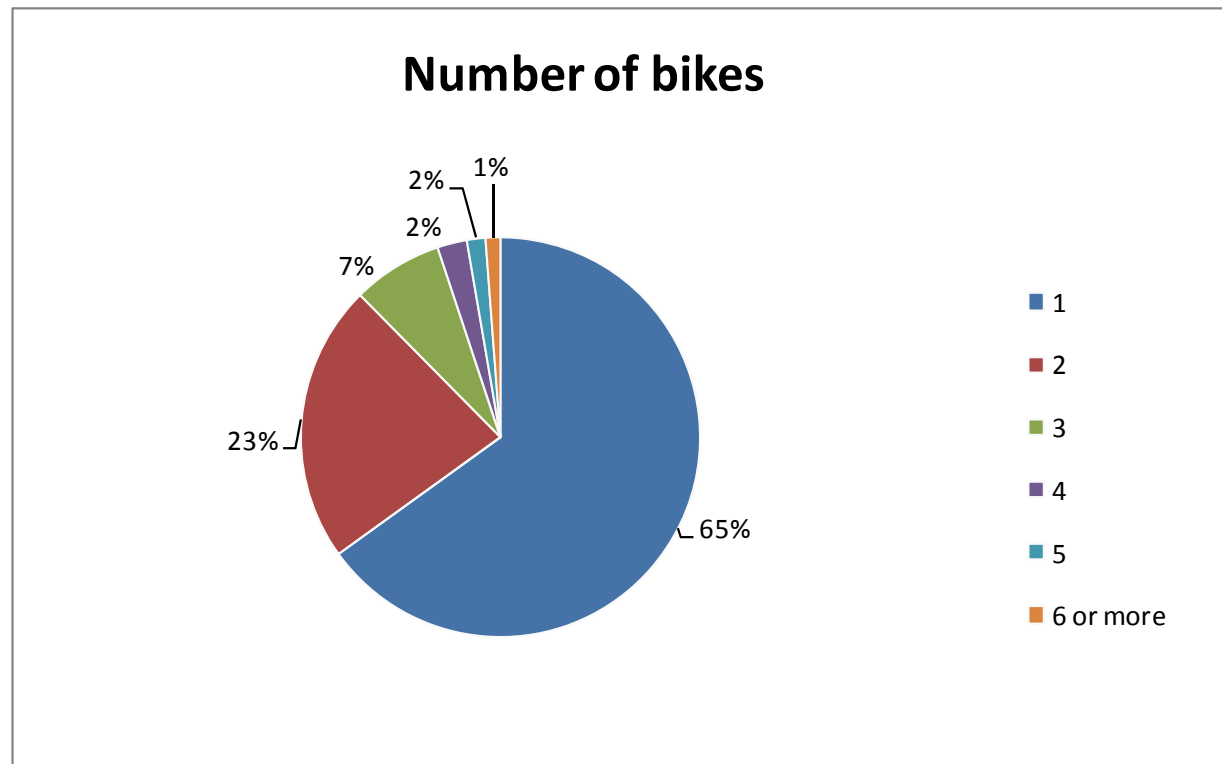
Figure 2.1: Number of bikes (n=1153)

Insurance

Most respondents (83%) reported having insurance on their primary motorcycle. This figure dropped to 50% for the 'other' motorcycle(s). Perhaps unsurprisingly, 97% of respondents sourced from AAI had insurance cover for their main bike; in contrast, main bike insurance cover was held by 84% of netrider respondents, 83% of respondents who heard about the survey via 'word of mouth', and 68% of respondents sourced from the VicRoads registration database.

Type of Motorcycle: Main
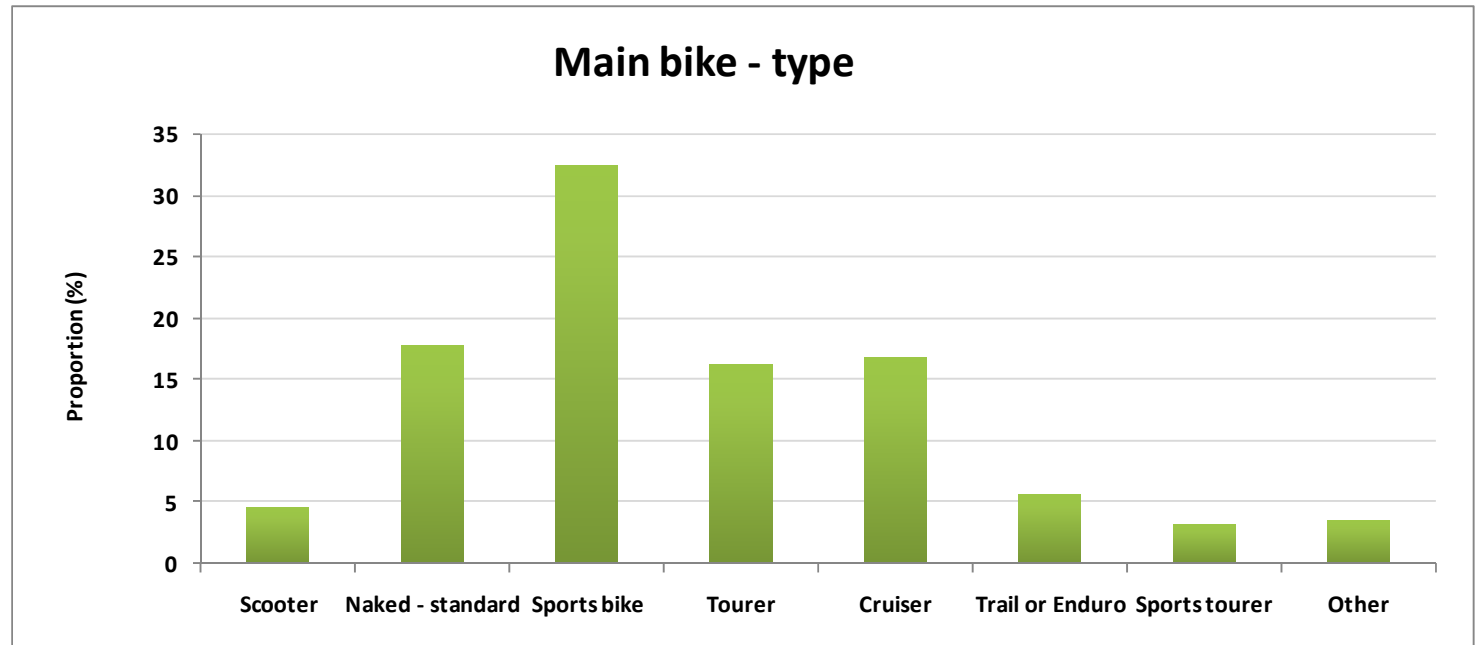
Figure 2.2: Main bike type (n=1152)

Among the 1152 unique respondents, sports bikes were the most popular type of motorcycle, with 32% of respondents classifying their main bike in such a way. Naked (18%) and Cruiser (17%) were the next most common types. Scooters (5%) and sports tourers (3%) were the least common types.

Please note that the 'sports tourer' category has been created from the 'other bike type' responses. It did not appear on the survey proper as a category of its own.

Engine Capacity: Main
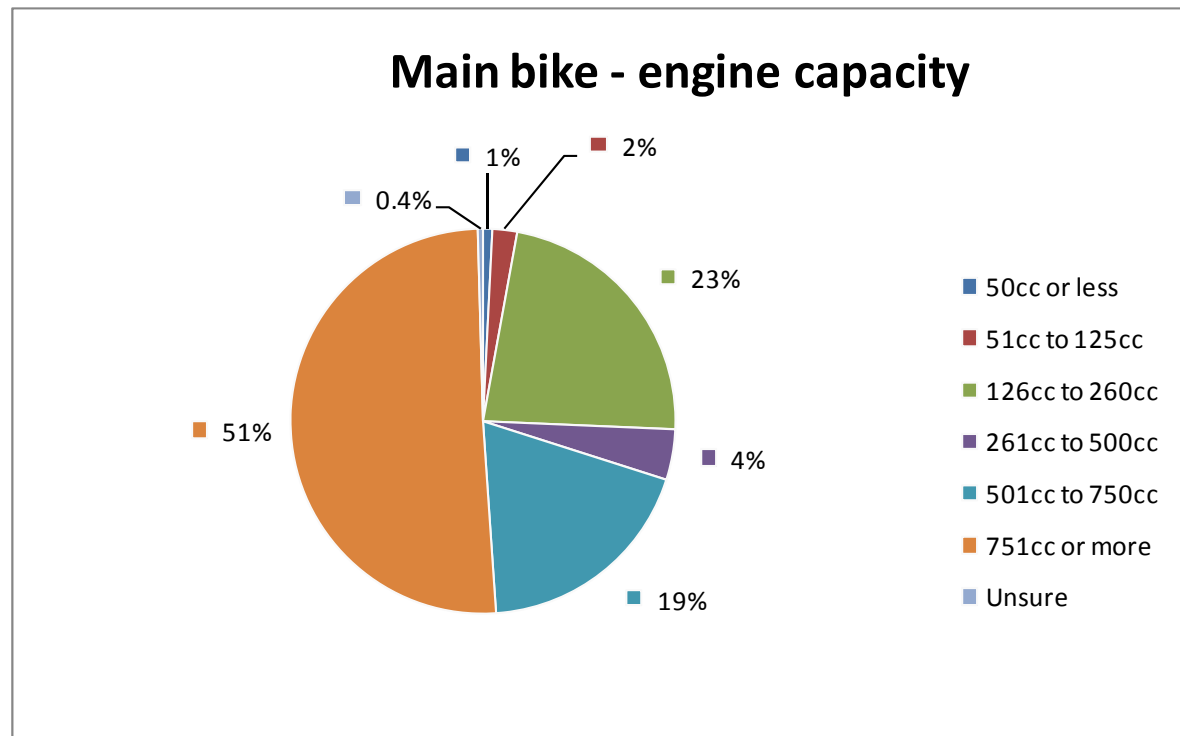
Figure 2.3: Main bike engine capacity (n=1153)

Just over half (51%) of main bikes were large engines – 751cc or more. Approximately one quarter (23%) of motorcycles were between 126 and 260cc, whilst the smaller capacities (under 125cc) were much less common; 50cc or less and 51 to 125cc combined were less than 3%.

Frequency of Use: Main
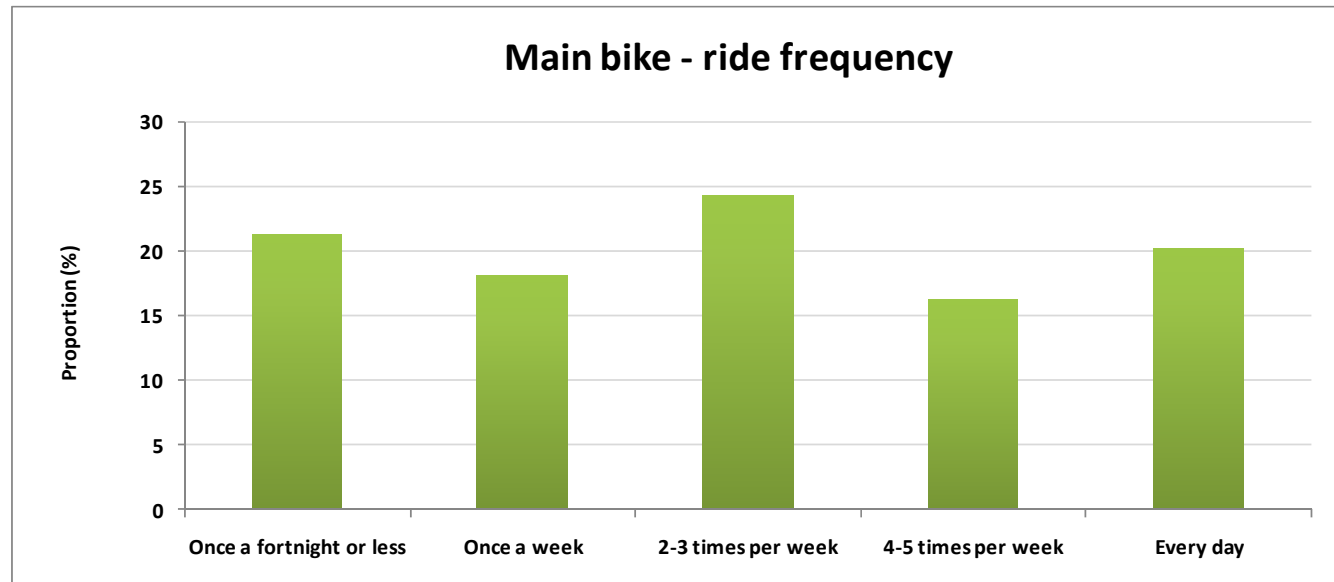
Figure 2.4: Ride Frequency, Main Bike (n=1152)

An even spread of responses is evident from figure 2.4. Daily use of main motorcycle was reported by 20% of respondents, with a slightly higher proportion (24%) riding their main bike 2-3 times per week. Once a week riders, and once a fortnight (or less) riders comprised 18% and 21% of the responses respectively.

Type of Motorcycle: Other

From figure 2.5 below, it can be seen that the most common denominations of 'other' bike type were Trail/Enduro bikes (26%) and sports bikes (19%). Interestingly, scooters (9%) were twice as likely to be reported as 'other' bikes rather than main bikes.
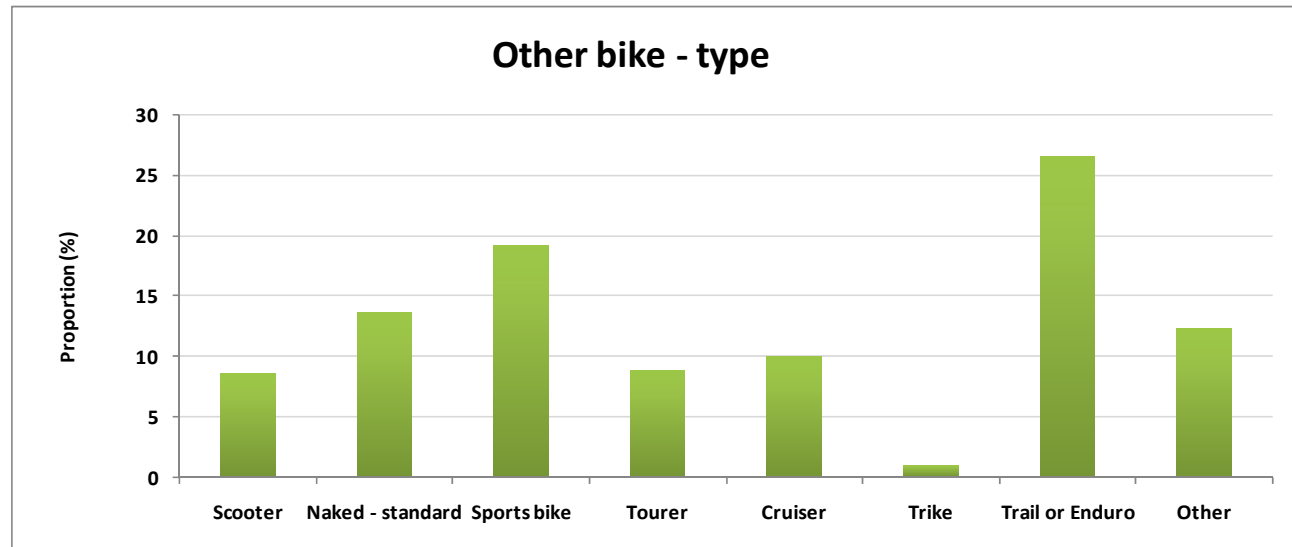
Figure 2.5: Other bike type (n=382)

Engine Capacity: Other

Other bikes' engine capacity tended to be smaller than that of main bikes. Twenty-nine percent of other bikes were reported at 126 to 260cc (compared to 23% for main bikes), and only 29% (compared to 51% of main bikes) were reported as the largest engine capacity of 751cc or more. The two smallest groups (bikes 125cc or less) constituted 10% of the sample of other bikes (compared to only 3% of main bikes).
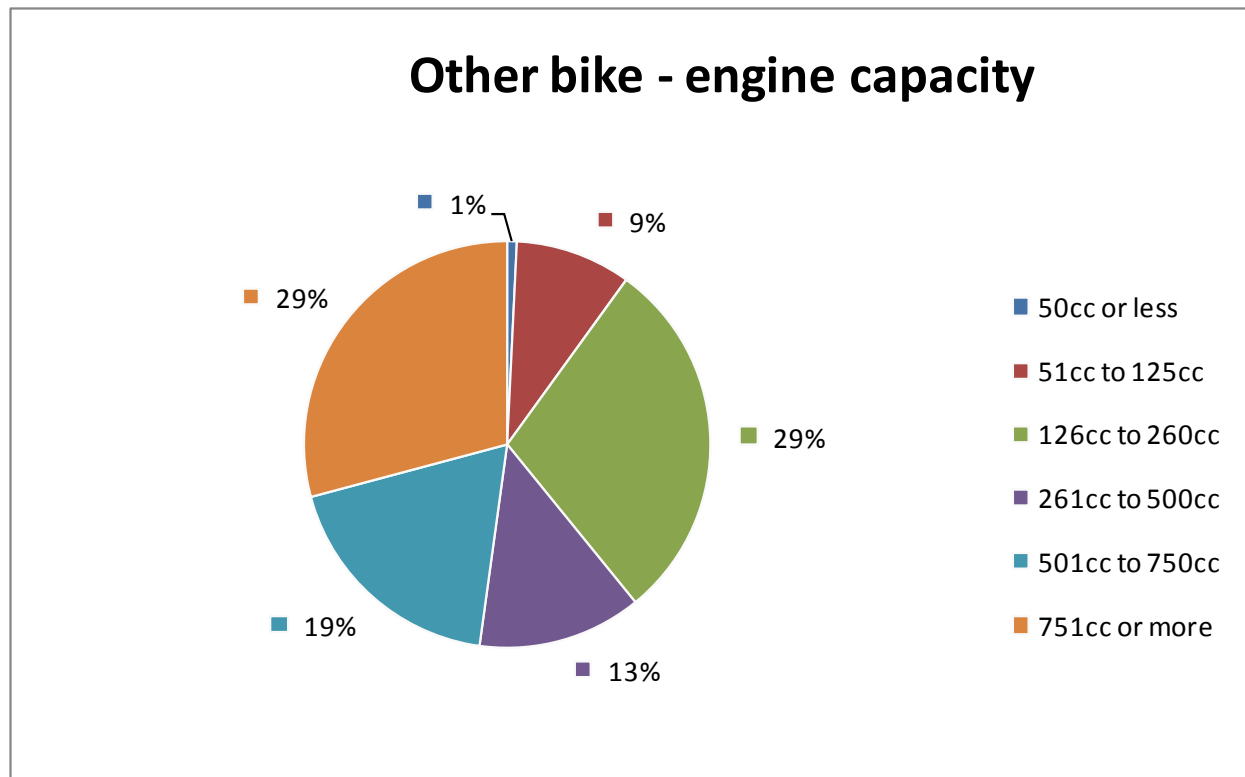
Figure 2.6:   Other bike engine capacity (n=391)

Frequency of use: Other
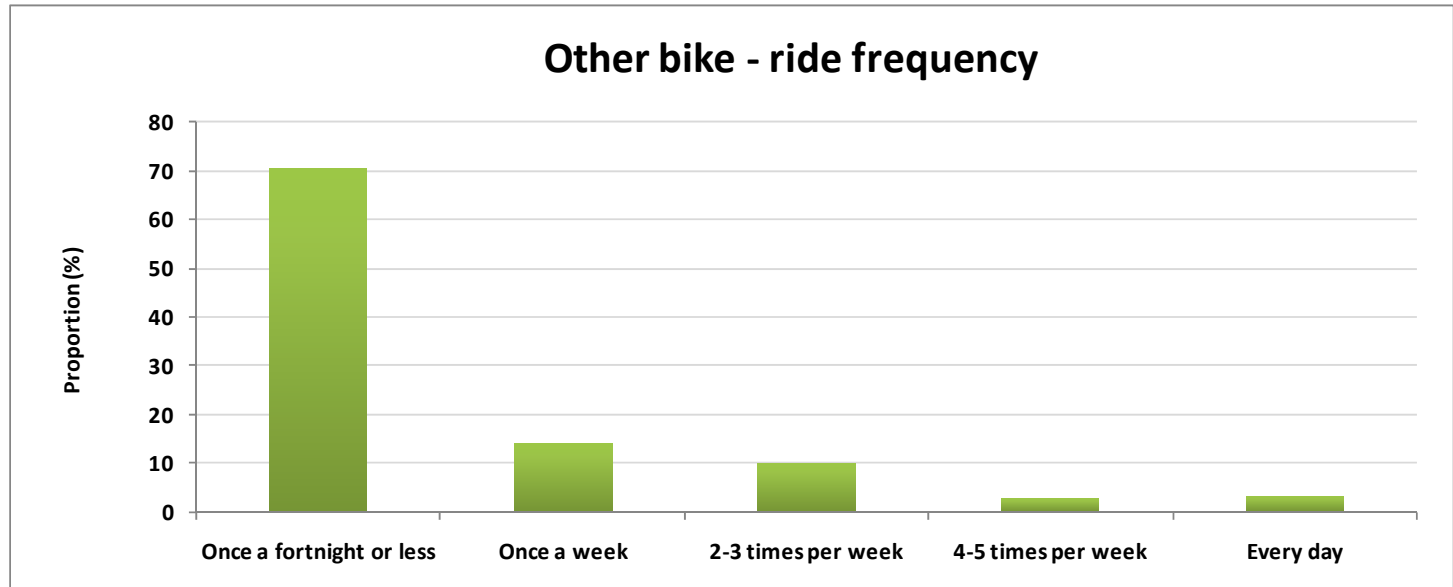
Figure 2.7: Other bike ride frequency (n=389)

The majority of respondents reported riding their secondary motorcycles much less often than their main bikes. Seventy percent of other bikes were ridden once a fortnight or less, and only 3% reported riding their other bike every day.

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Part III - Recent Trips

How long ago?
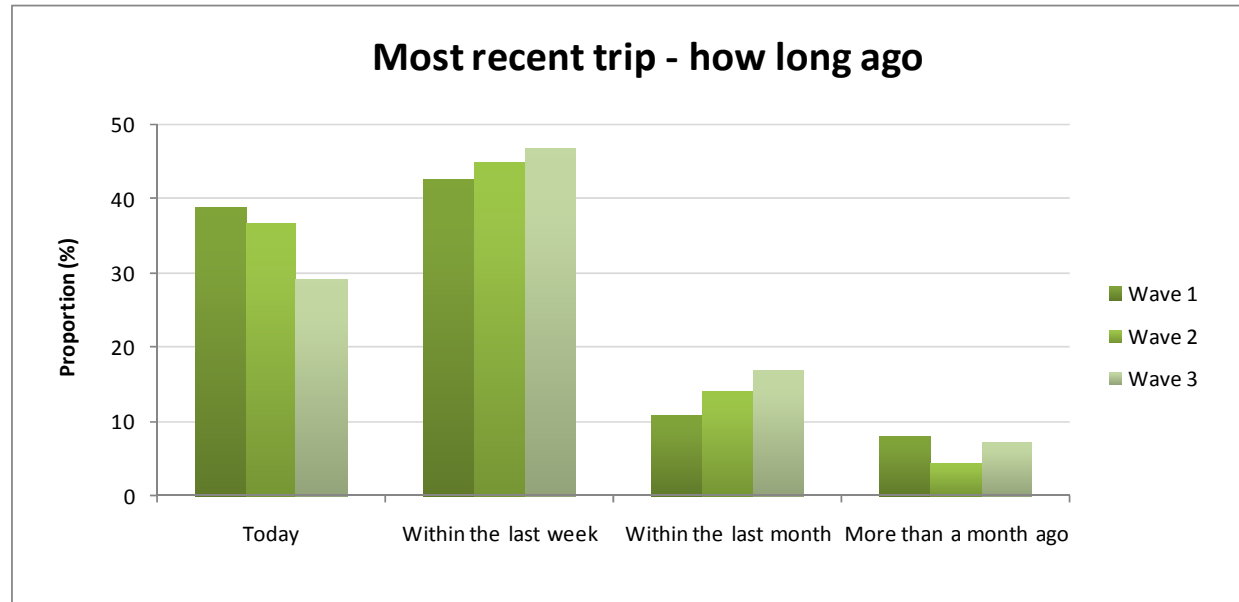
Figure 3.1: Recent Trip: How long ago?

Across all waves (n=1860), most recent trips were most likely to have been either on the day of the survey response (34%) or within the last week (45%). Some wave discrepancies are evident; Wave 3 respondents were significantly less likely than both Wave 1 and 2 respondents to have ridden on the day of survey completion. This is likely due to the larger proportion of hard copy surveys completed during Wave 3 (respondents may have completed the hard copy some time after their most recent trip) as the differences between Waves disappears once the effect of response mode (hard copy versus online) is taken into account.

There was also no relationship between motorcycle type and recent trip – how long ago.

Day of week

Most recent trip - day of week
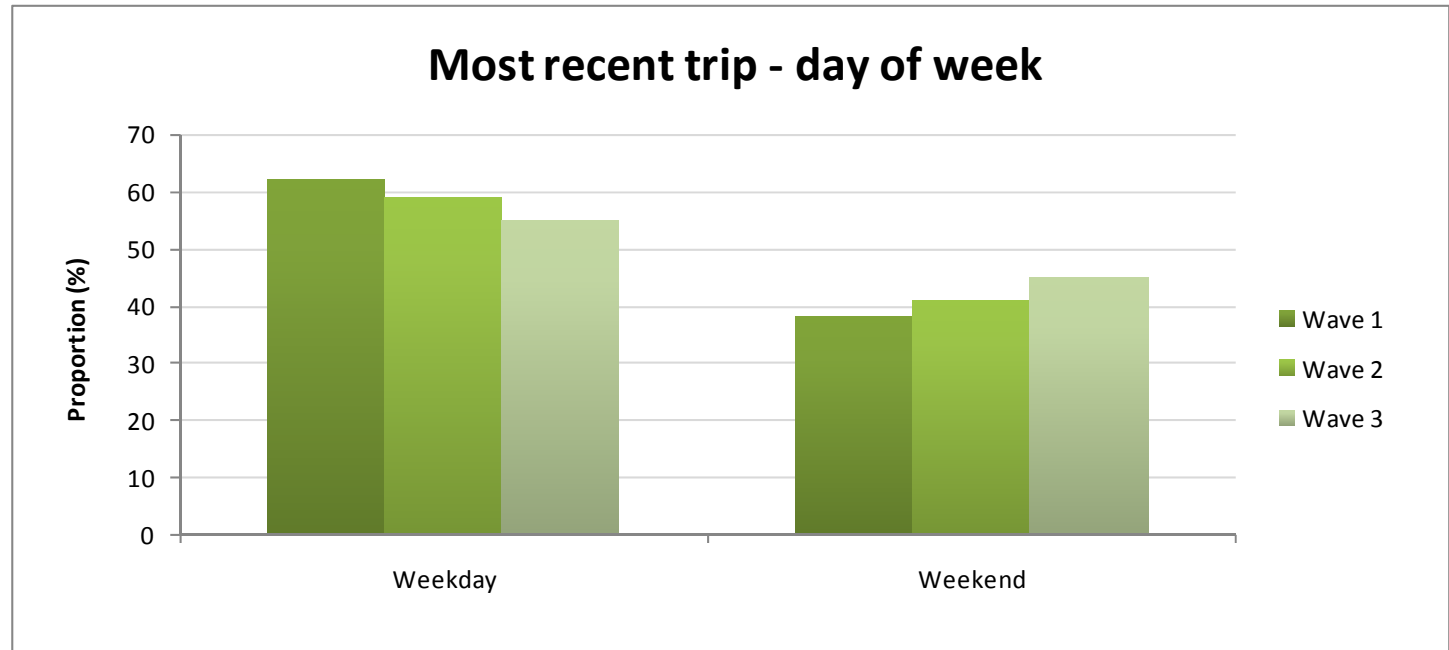
Figure 3.2: Recent trip, day of week

Across the sample (n=1858), the majority (58%) of recent trips were reported as having occurred on a weekday i.e. Monday to Friday. No significant differences between Waves can be noted between weekday versus weekend riding for most recent trip. Interestingly, while there were no appreciable differences between Waves on Saturday or Sunday riding, a significantly greater proportion of riders (21%) took their most recent trip on a Friday during Wave 3 than during Waves 1 or 2 (11% and 12% respectively).

The table below shows day of week by bike type for most recent trip:

	Weekday (%)	Weekend (%)
Main bike type		
Scooter	78	22
Naked (Standard)	64	36
Sports Bike	62	38
Tourer	49	51
Cruiser	51	49
Trail/Enduro	52	48
Sports tourer	54	46
Other (please specify)	54	46
50cc or less	67	33
Main bike CCs		
Between 51cc and 125cc	75	25
Between 126cc and 260cc	67	33
Between 261cc and 500cc	59	41
Between 501cc and 750cc	59	41
751cc or more	53	47
Unsure	33	67

Table B1.3.1:   Bike type and capacity by day of week

Scooters, Standards, and Sports bikes were all more likely to have had their most recent ride on a weekday – a pattern also true for the smaller engine machines. Larger bike types (Tourer, Cruiser) and engine capacities were comparatively more likely to have been most recently ridden on the weekend.

Time of day
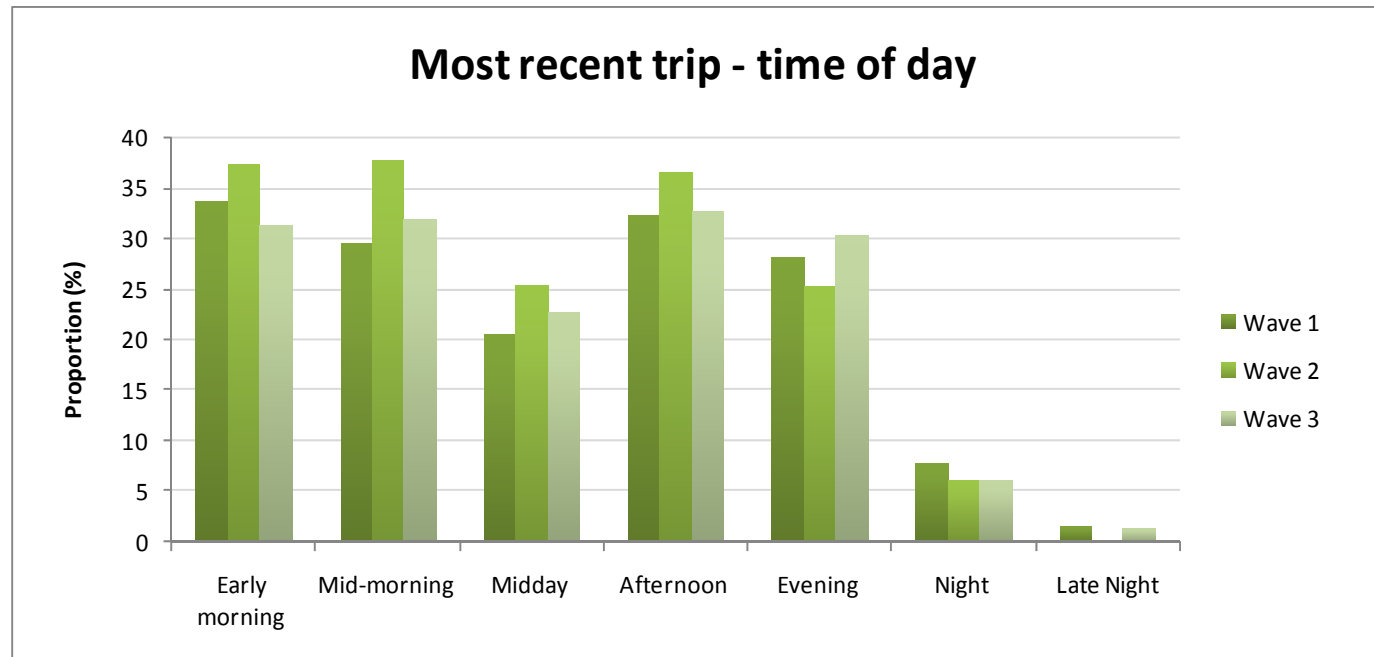
Figure 3.3: Recent trip, time of day (n=1922)

Figure 3.3 reveals that trips were taken throughout the day, with a slight trough at midday, and a decrease at night-time. The most popular times for riding were early and mid mornings, between 5 and 11am (34% and 33% respectively) across the sample for both), and afternoon, between 1 and 4pm (34%). During Wave 3, there was a slight rise in evening riding, between 4 and 7pm (30% vs 28% for Wave 1 and 25% for Wave 2); the difference was not significant.

Note that because trips can break over more than one time period, the percentage bars in Figure 3.3 will add to more than 100%.

Time of day by day of week is shown in the table below. Early morning, evening, and night-time trips were significantly more likely to take place on a weekday. Conversely, mid-morning, midday, and afternoon trip were significantly more likely to occur on a weekend. No significant trend was noted for the small hours; very few cases of travel at this time were reported.

Time of day	Weekday (%)	Weekend (%)
Early morning (5-9am)	75	25
Mid morning (9-11am)	38	62
Midday (11am-1pm)	40	60
Afternoon (1-4pm)	41	59
Evening (4-7pm)	70	30
Night (7pm-midnight)	71	29
The small hours (midnight-5am)	70	30

Table B1.3.2: Most recent trip: time of day by day of week (n=1803)

Trip Duration
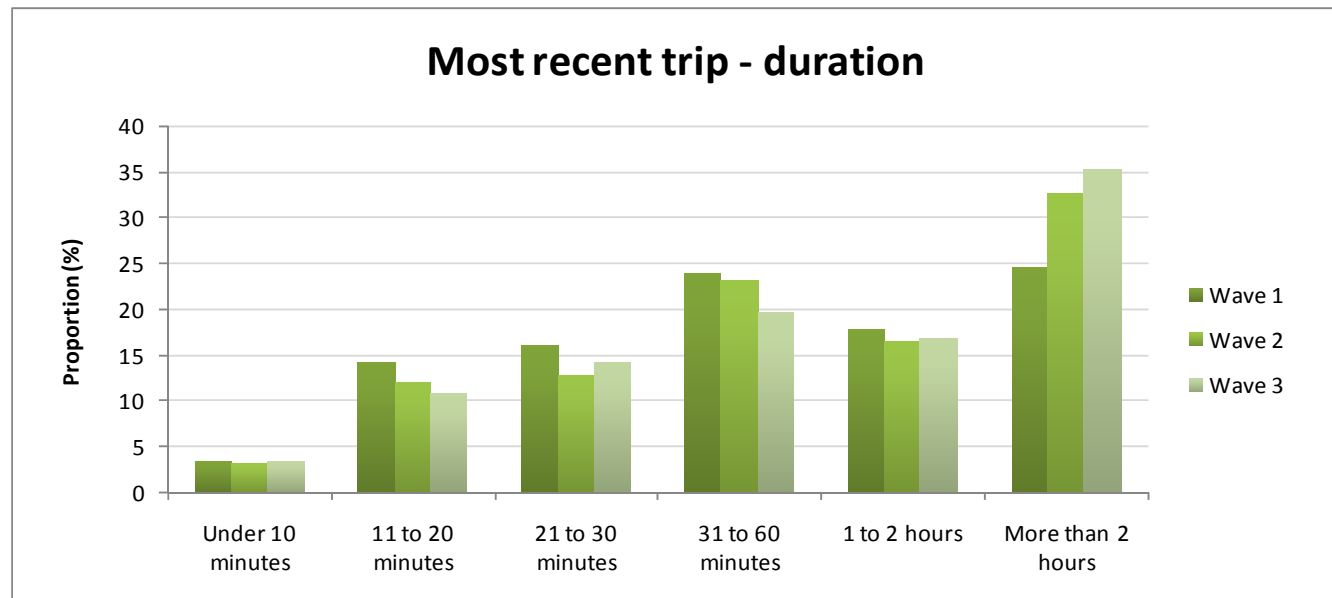
Figure 3.4: Recent trip - duration (n=1850)

Figure 3.4 shows that longer rides were more popular within the sample. Across all Waves, 32% of all respondents reported their most recent trip took more than two hours; 22% reported that it took between half an hour and an hour. Longer rides were more common in warmer weather, with Wave 2 and 3 respondents significantly more likely to report a 2+ hour trip than respondents in Waves 1). This finding does not appear to be sampling related (the discrepancy remains when VicRoads database responses are excluded from the analysis).

Distance travelled

Figure 3.5 below shows distance travelled by wave. Across the sample (n=1854), the most common distances travelled were 21-30 km (11% of all trips) and 31-50 km (13%). Wave 3 respondents showed increased instances of longer trips, but the differences compared to the earlier waves were not statistically meaningful.
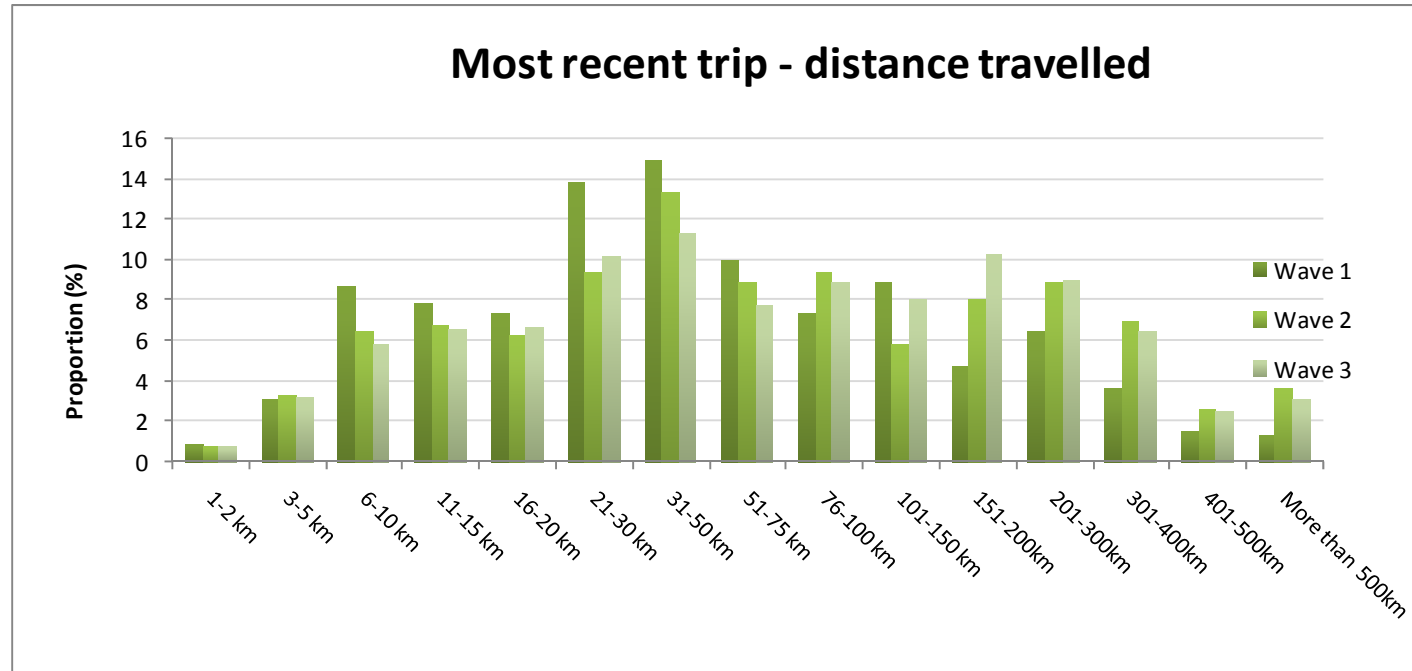
Figure 3.5: Recent trip – distance travelled (n=1854)

The large number of options and the ordinal nature of the distance travelled allowed for the variable to be included in Spearman's correlations. This statistic is useful for describing the association between ordinal and continuous data, as it reveals the statistical 'strength' of the relationship between two variables.

Distance travelled was moderately correlated with age of rider (.26) and riding experience (.30). These correlations were statistically significant at the .01 level. It seems apparent that more experienced riders were more apt to travel longer distances on their motorcycles.

Road type

With the exclusion of dirt roads and off-road riding, road types travelled were fairly evenly distributed across the sample. Main/arterial roads (41% sample wide) and local streets (also 41%) received the most motorcyclist traffic. Wave 3 respondents were significantly less likely to report riding on main/arterial metropolitan roads than Wave 1 riders, but that was the only inter-wave difference.
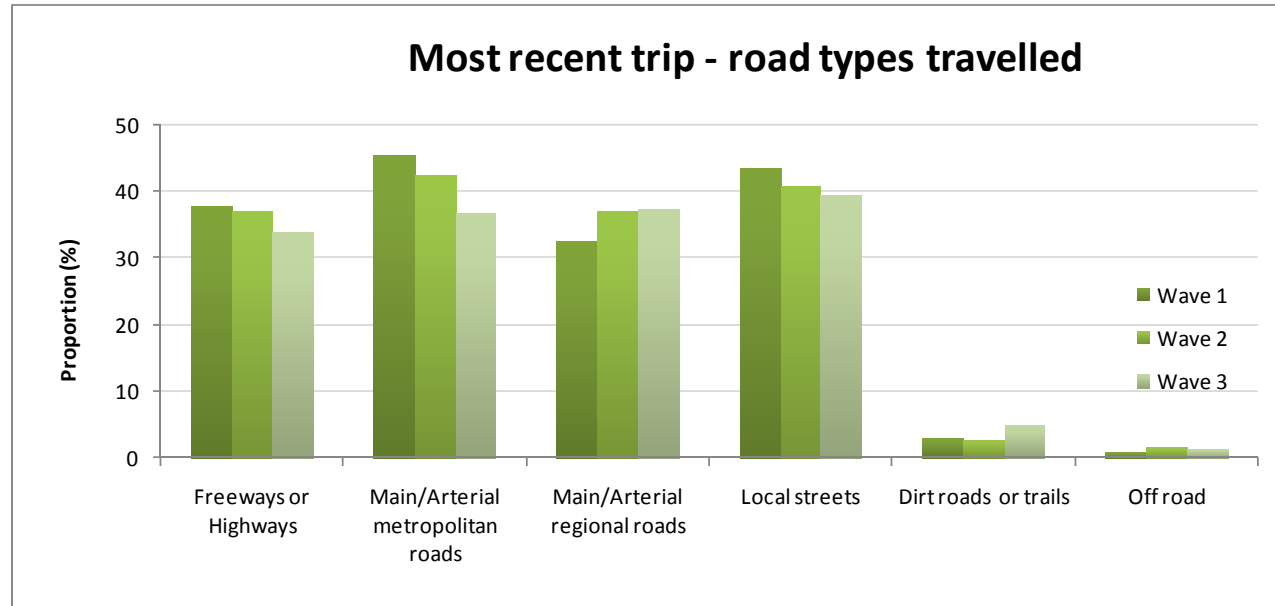
Figure 3.6: Recent Trip - road type (n=1873)

Note that because trips could utilise multiple road types, the above category percentages add to more than 100%.

Reason for travel

Figure 3.7 below shows the reason nominated by the motorcyclist for their most recent trip. Across all waves, Commuting and Just for fun (34% and 48% respectively) were the most commonly provided reasons. Employment (2%) was the least common reason. It is very likely that the nominated reason is related to the day on which the survey was completed; for example, it stands to reason that surveys completed on weekdays stood a greater chance of recent trip being reported as commuting than a survey completed on a weekend. Data for day of completion of the survey, however, were not available.

Some differences between waves are noted. Commuting as a reason for riding was significantly lower in Wave 3 (29%) than in Wave 1 (41%). Similarly, riding 'just for fun' was significantly more likely to be endorsed in Wave 2 (50%) and Wave 3 (51%) than in Wave 1 (41%). Note that the 'other' category does not appear below; 'other' responses were content-examined and recoded into the primary categories.
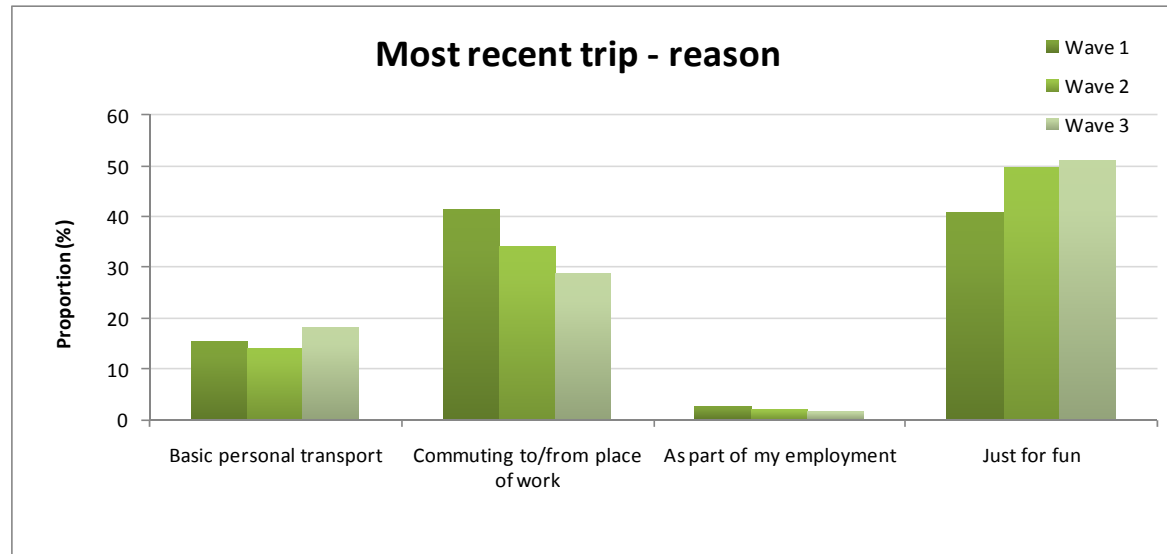
Figure 3.7: Recent trip – reason (n=1817)

Route frequency

Figure 3.8 displays the frequency of the motorcyclist's travel upon the route they took on their most recent trip. An even spread across the sample as a whole was found, with 'Occasionally – once or twice a month' the most commonly endorsed option at 26%.

Only one significant difference between waves can be noted. Compared to Wave 3, a greater proportion of Wave 1 respondents reported taking the route of the most recent trip 'often (e.g. every weekday)' (16% versus 24%). No significant differences involving Wave 2 responses were detected.
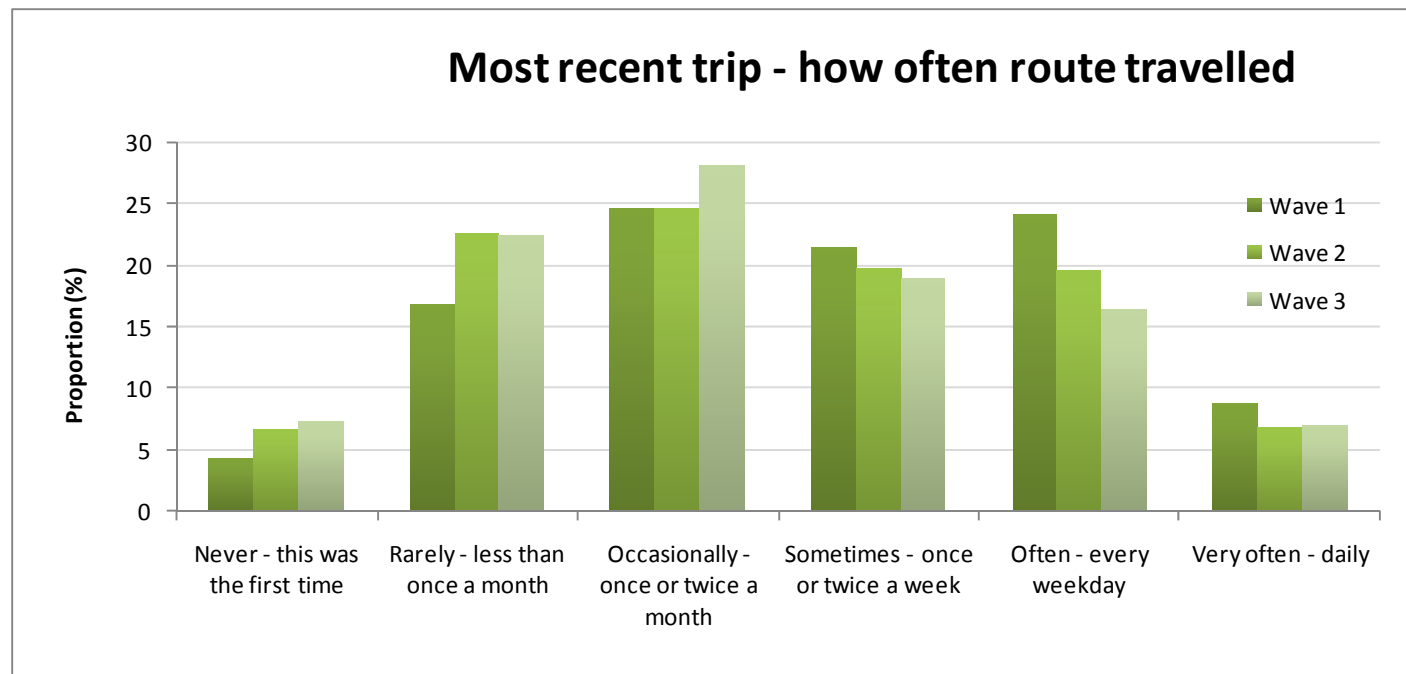
Figure 3.8: Recent trip: Route frequency (n=1809)

Part IV – Recent Trip: Passengers

Passengers and travel style

Across the sample, 11% of respondents reported taking a passenger on their most recent trip. However, there were some differences between waves:

	Wave 1 (n=446) (%)	Wave 2 (n=570) (%)	Wave 3 (n=802) (%)
Passenger	7	15	11
No Passenger	93	85	89

Table B1.4.1: Passenger carrying by Wave

Table B1.4.1 shows passengers were twice as likely to be taken in Wave 2 as in Wave 1. This difference is statistically significant at the .05 level, and provides evidence that there was a seasonal effect for passenger carrying. That is, passengers tended to be carried more often in warmer weather than in colder weather. However, no significant differences involving Wave 3 respondents were evident. It is possible that the PRMR cohort influenced this finding, but there is no way to conclusively test this theory (as respondents may or may not have listed that ride as their most recent, depending on when they completed the survey.

Virtually all passengers were carried via pillion, behind the rider. There was only a single reported instance of a passenger travelling in a sidecar.

Passengers and journey distance
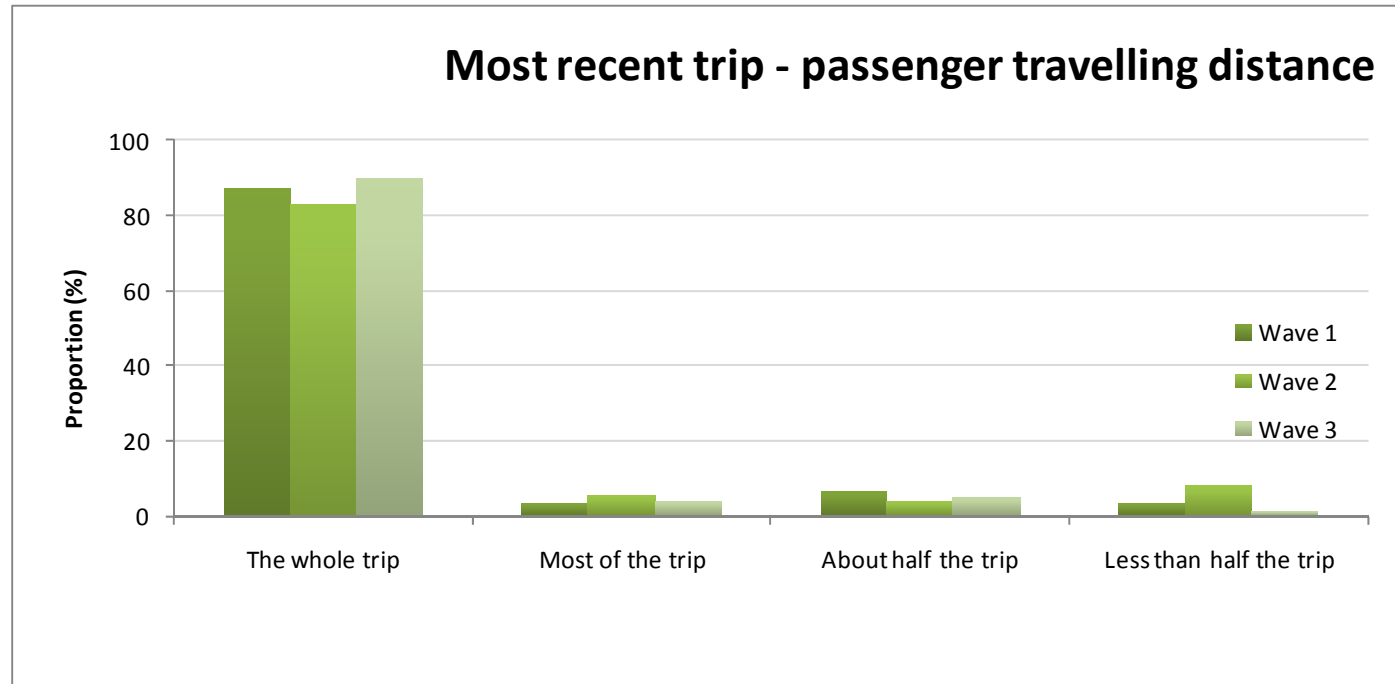
Figure 4.1: Passenger distance (n=187)

Figure 4.1 shows that the passenger was carried for the entire trip for most journeys, and this was consistent between waves. The vast majority (87%) of passengers stayed on the motorcycle for the whole trip. Minor variations between waves are present, but none are significant.

Part V – Group riding

Group riding: Numbers

Figure 5.1 illustrates that, across all waves, most riders (71%) reported riding alone.
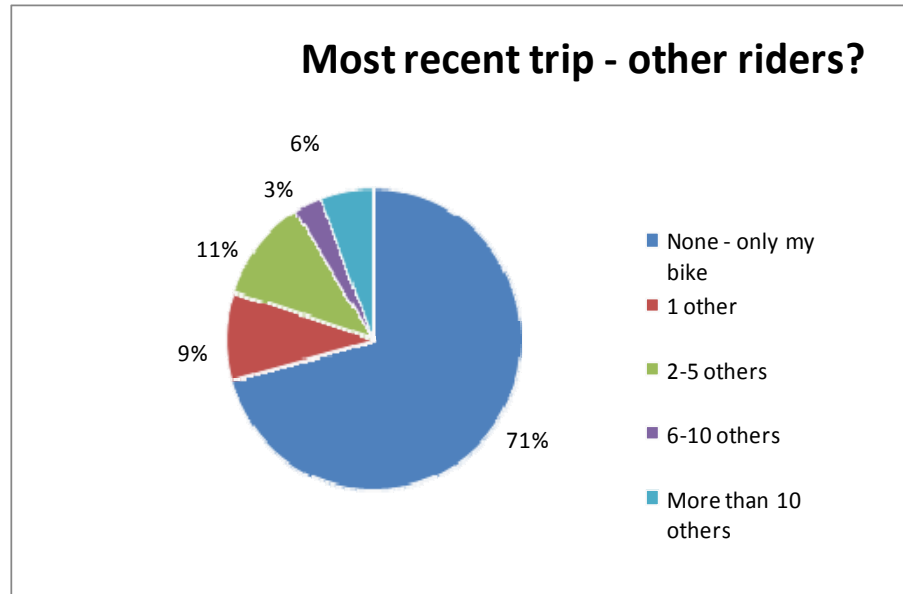
Figure 5.1: Number of other riders (total sample, n=1807)

Further examination between waves appears in Table B1.5.1.

	Wave 1 (n=446) (%)	Wave 2 (n=567) (%)	Wave 3 (n=794) (%)
No other riders	78	69	68
1 other	9	9	10
2-5 others	8	11	13
6-10 others	2	3	4
More than 10 others	3	8	6

Table B1.5.1: Other riders by wave

Group riding appeared to become more common as the weather got warmer. A significantly greater proportion of Wave 1 riders (78%) reported riding alone than Wave 2 (69%) or Wave 3 (68%) respondents. Large group riding (more than 10 others) was significantly more likely to occur in both Wave 2 and Wave 3 when compared to Wave 1. However, Wave 2 and Wave 3 did not differ statistically.

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Reasons for group riding

Figure 5.2:   Reason for group riding (n=527)

Data in Figure 5.2 indicate that the majority of group riding appeared to be planned riding with a group of friends; the category constituted 61% of responses in Wave 1, 53% for Wave 2, and 62% for Wave 3 (no significant differences).   Club outings accounted for about a fifth of all group rides, and this number did not vary across waves.

Part VI - General Riding Habits

Passenger frequency

How often carrying a passenger?
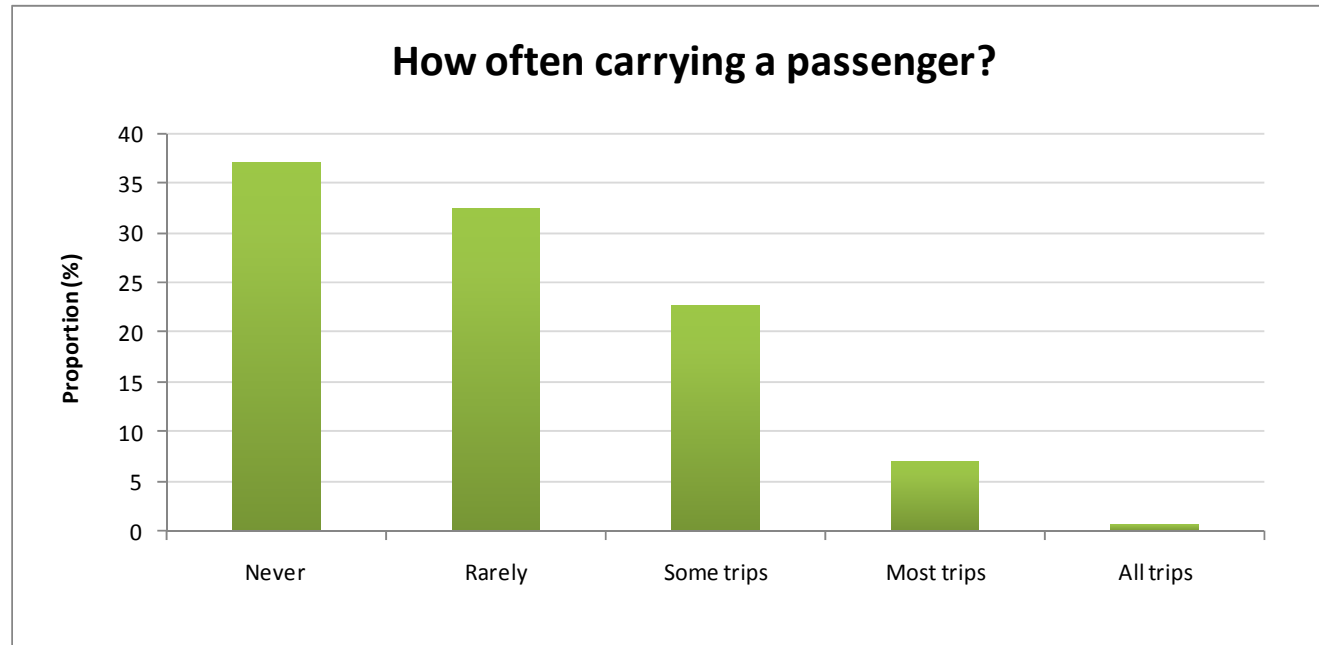
Figure 6.1:   Frequency of passengers in general

Around 70% of unique respondents (n=1104) reported that they never or rarely carried a passenger on their motorcycle. Less than 1% of respondents indicated that they always carried a passenger.

Group riding

Most respondents reported that they rode with other motorcyclists at least occasionally; only 13% stated that they never accompanied other riders. 'Some trips' was endorsed by 43% of respondents, whilst less than 1% indicated that they always rode with other motorcyclists.
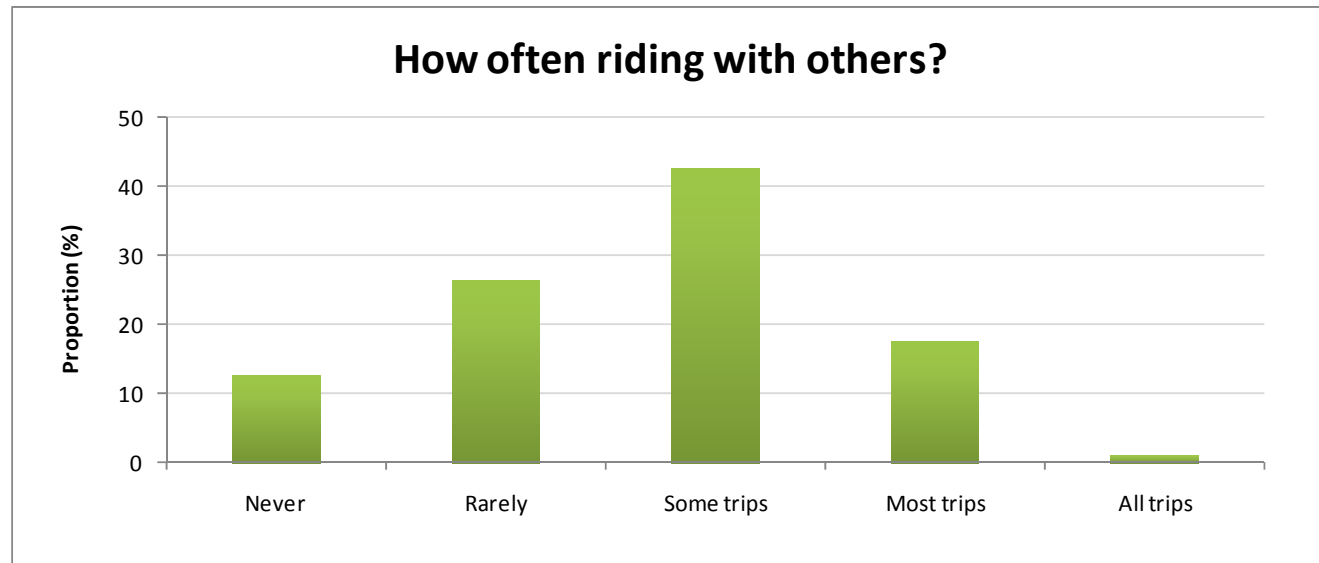
Figure 6.2: Frequency of riding with others in general (n=1107)

	Alone (%)	With another/others (%)
Main bike type		
Scooter	5	1
Naked (standard)	19	15
Sports bike	35	32
Tourer	15	20
Cruiser	14	18
Trail/Enduro	4	7
Sports tourer	4	4
Other	4	4
TOTAL	*100*	*100*

Table B1.5.2: Most recent trip: Group riding by bike type

Some motorcycle types were more likely than others to be on group rides. Tourers and Cruisers both comprised a significantly greater proportion of group riders than they did of 'alone' riders. Scooter riders showed the least inclination for group riding across the sample.

Riding frequency in past month
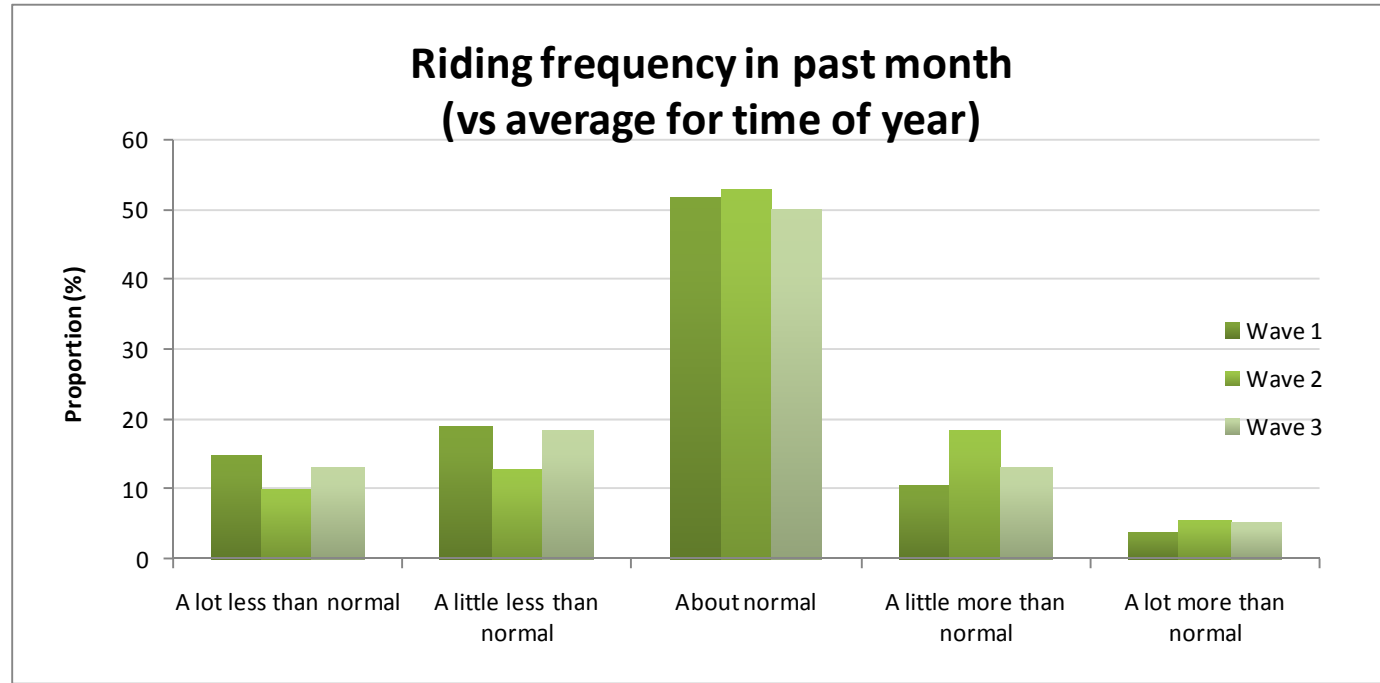
Figure 6.3: Ride frequency, last month (total sample, n=1800)

A trend towards more frequent recent ride activity amongst Wave 2 participants is evident from Figure 6.3. Wave 2 riders were significantly more likely to have reported riding more often compared to both Wave 1 and Wave 3. Just under a quarter (24%) of Wave 2 respondents reported riding either a little or a lot more than normal, compared to Wave 1 (15%) and Wave 3 (18%). However, the proportion of riders across waves reporting their usage as 'about normal' remained constant. This finding suggests that hotter weather had a similar impact to colder weather upon motorcycle usage.

When the categories are treated as a 5-point scale, one-way ANOVA with Tukey's Pairwise comparisons reveals that the mean riding frequency for Wave 2 (2.93) was significantly higher than the mean for Wave 1 (2.70); no significant differences were detected between Wave 2 and Wave 3. Wave 2 (late spring) appeared to be the preferred time of year to do some 'extra riding'. There were no differences between the PRMR cohort and other groups in terms of riding frequency over the last month.

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Riding frequency for the time of year
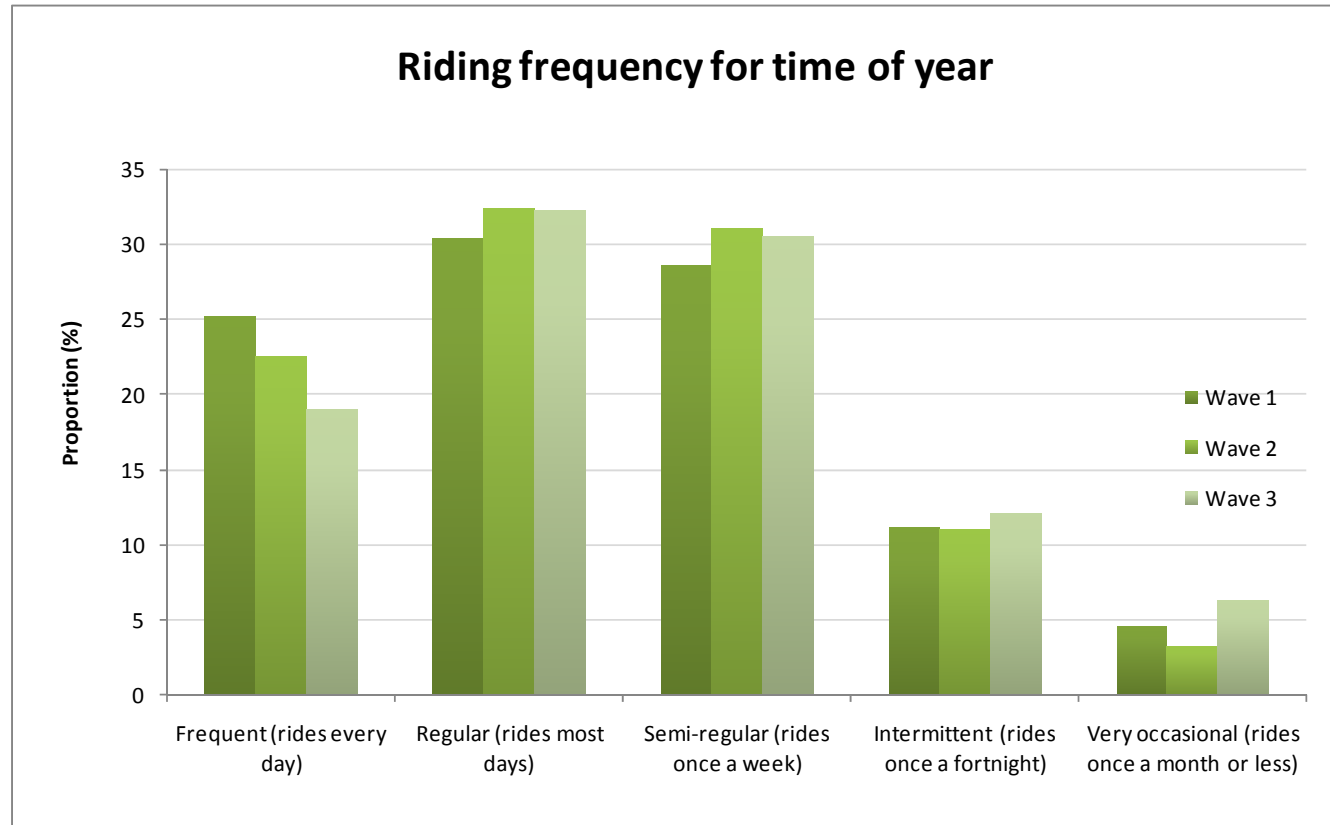
Figure 6.4: Average ride frequency for time of year (n=1789)

Small variations in riding frequency for time of year are apparent in Figure 6.4. Two significant differences are present – frequent (every day) riders were more common in Wave 1 (25%) than Wave 3 (19%), and very occasional (once a month or less) riders were more common in Wave 3 (6%) than Wave 2 (3%). Self-classification of riding frequency therefore did not appear to be seasonally dependent in the minds of the riders.

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Part VII - Roads most travelled

Overview

Over 4500 valid road responses contributed to the list of roads most travelled, and the lists make for interesting reading. The list of metropolitan roads includes a number of expected key transport routes such as the Monash Freeway, The Western Ring Road, Citylink and Springvale Road, as well as some common suburban arterial roads such as Hoddle Street and Dandenong Road. However, further down the list are some roads that may contain some special appeal to motorcyclists, as they are not key transport routes in the same manner. These roads include Mt Dandenong Tourist Road and Wellington Road.

The rural/regional road list contains a great variety of roads. A number of 'tourist' roads appear high in the list, such as the Great Ocean Road, and the Bass Coast Highway. There are also many highway routes that extend into the metropolitan area (e.g. Hume Highway, Calder Freeway, Maroondah Highway) that may well indicate the presence of a good deal of regional to metropolitan travel (or *vice versa*).

Most recent trip – roads travelled

Roads listed by respondents were grouped into a master list to compensate for variations in response pattern; in some cases, respondents clearly listed roads in order travelled rather than by time/distance travelled. The order in which the roads were listed has therefore been removed for this analysis.

Roads have been coded as either metropolitan or rural/regional, and counted. The distinction is based upon Australia Post postcode classifications, although there may be rare discrepancies. Roads traversing more than one suburb or region have been counted as a single road. Note that the term 'to' refers to a range, rather than a direction, i.e. 'Abbotsford to Donvale' implies travel in the geographic area between the two locations, rather than specific trips from Abbotsford to Donvale.

Metropolitan Roads

The top 20 most travelled metropolitan roads appear in the table below. For longer roads traversing more than one suburb, respondents did not always specify the section of road on which they travelled, thus the suburb(s) listed are an approximation of the entire distance of the road.

Ranking	Road and suburb(s)	N
1	Monash Freeway; Malvern to Narre Warren	178
2	Eastern Freeway; Abbotsford to Donvale	110
3	Princes Freeway; Altona to Geelong	104
4	Western Ring Road; Greensborough to Altona	85
5	Nepean Highway; Elsternwick to Mornington	78
6	Hoddle St/Punt Road; Clifton Hill to St Kilda	77
7	Princes Highway/Dandenong Road; Windsor to Dandenong	76
8	CityLink; Strathmore to Malvern	62
9	Burwood Highway; Burwood to Belgrave	58
10	Maroondah Highway/Whitehorse Road; Box Hill to Lilydale	55
11	Westgate Freeway; Altona to Port Melbourne	50
12	Springvale Rd; Doncaster to Aspendale Gardens	48
12	Canterbury Rd; Canterbury to Montrose	48

Ranking	Road and suburb(s)	N
14	Tullamarine Freeway; Tullamarine to Melbourne	45
15	Plenty Road; Whittelsea to Preston	44
16	Wellington Road; Clayton to Emerald	41
17	Ferntree Gully Road; Oakleigh to Ferntree Gully	38
18	Ballarat Road/Western Highway; Maidstone/Sunshine/Footscray	35
19	Kings Way/Queens Rd; Melbourne	34
20	Mt Dandenong Tourist Road; Upwey to Montrose	33

Table B1.7.1: Top 20 roads: Metropolitan (Greater Melbourne)

Rural/Regional Roads

For rural/regional roads, a coding and classification process identical to the metropolitan roads was followed. As with the metropolitan road listing, the region specified in the table below indicates an approximation of the entire distance of the road. Note there are 42 roads listed as there were 7 roads tied for 36th place.

Ranking	Road and region(s)	N
1	South Gippsland Highway; Dandenong to Korumburra	85
2	Maroondah Highway; Lilydale to Mansfield	73
3	Princes Freeway/Highway; Narre Warren to Bairnsdale	53
4	Hume Highway; Mickelham to Wodonga	52
5	Calder Freeway; Woodend to Essendon	52
6	Great Ocean Road; South coast	49
7	Warburton Highway; Lilydale to Warburton	36
8	Midland Highway; Mansfield to Bendigo	33
9	Great Alpine Road; Wangaratta to Lakes Entrance	33
10	Bass Highway; Lang Lang to Philip Island	31
11	Melba Highway; Coldstream to Yea	30
12	Western Freeway; Deer Park to Ballarat	29

Ranking	Road and region(s)	N
13	Murray Valley Highway; Robinvale to Corryong	21
13	Calder Highway; Bendigo to Woodend	21
15	Princes Highway; Geelong to Colac	18
15	Midland Highway; Geelong to Bendigo	18
17	Bellarine Highway/Queenscliff Road; Geelong to Queenscliff	15
18	Eltham Yarra Glen Rd; Kangaroo Ground to Yarra Glen	14
19	Calder Highway; Bendigo to Ouyen	12
20	Portarlington Road; Geelong to Portarlington	11
20	Hamilton Highway; Geelong to Mortlake	11
22	Whittlesea-Kinglake Road; Kinglake	10
23	Northern Highway; Wallan to Echuca	9
24	Yan Yean Rd; Plenty to Mernda	8
24	Whittlesea-Yea Rd; Flowerdale to Whittlesea	8
24	Reefton Spur; Reefton	8
24	Bacchus Marsh Road; Bacchus Marsh to Geelong	8
28	Strezlecki Highway; Mirboo North	7

Ranking	Road and region(s)	N
28	Goulburn Valley Hwy; Shepparton	7
28	Cape Otway Road; Deans Marsh/Moriac	7
31	Torquay Road; Torquay	6
31	Sturt Highway; Mildura	6
31	Melbourne-Lancefield Rd; Melbourne to Lancefield	6
31	Glenrowan-Myrtleford Road; Glenrowan to Myrtleford	6
31	Gembrook Road; Launching Place to Pakenham	6
36	Wyndham St; Shepparton	5
36	Whitfield Tolmie Road; Mansfield	5
36	South Gippsland Highway; Cranbourne to Lang Lang	5
36	Pyrenees Hwy; Castlemaine to Ararat	5
36	Old Hume Highway; Seymour to Wangaratta	5
36	Gisborne-Melton Road; Melton to Gisborne	5
36	Boneo Rd; Flinders	5

Table B1.7.2: Top 40 roads: Rural/Regional (Victoria)

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Top 10 roads travelled by wave

The following table shows the top 10 roads for each wave, without any metropolitan-rural/regional segmenting.

Wave 1	n	Wave 2	n	Wave 3	n
Monash Freeway; Malvern to Narre Warren	38	Monash Freeway; Malvern to Narre Warren	59	Monash Freeway; Malvern to Narre Warren	81
Eastern Freeway; Abbotsford to Donvale	36	South Gippsland Highway; Dandenong to Korumburra	40	Princes Freeway; Altona to Geelong	47
Princes Highway/Dandenong Road; Windsor to Dandenong	29	Princes Freeway; Altona to Geelong	38	Eastern Freeway; Abbotsford to Donvale	37
Nepean Highway; Elsternwick to Mornington	23	Eastern Freeway; Abbotsford to Donvale	37	Hoddle St/Punt Road; Clifton Hill to St Kilda	37
Western Ring Road; Greensborough to Altona	21	Western Ring Road; Greensborough to Altona	32	South Gippsland Highway; Dandenong to Korumburra	35
Hoddle St/Punt Road; Clifton Hill to St Kilda	20	Nepean Highway; Elsternwick to Mornington	26	Maroondah Highway; Lilydale to Mansfield	34
CityLink; Strathmore to Malvern	19	Maroondah Highway; Lilydale to Mansfield	26	Western Ring Road; Greensborough to Altona	32
Princes Freeway; Altona to Geelong	19	Princes Highway/Dandenong Road; Windsor to Dandenong	23	Nepean Highway; Elsternwick to Mornington	29
Maroondah Highway/Whitehorse Road; Box Hill to Lilydale	17	Burwood Highway; Burwood to Belgrave	23	Hume Highway; Mickelham to Wodonga	28
Westgate Freeway; Altona to Port Melbourne	16	CityLink; Strathmore to Malvern	21	Canterbury Rd; Canterbury to Montrose	25

Table B1.7.3: Top 10 roads by Wave (total sample)

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Section B2: Advanced Results

Part 1: Gender Differences

Differences between Male and Female motorcyclists

A number of differences were found between male and female respondents. Differences are based on the sub-sample of unique respondents (n=1186).

Age and riding experience

Female respondents (mean age of 40.02 years) were significantly younger than male respondents (mean age of 42.72 years). Female respondents also tended to have significantly fewer years riding experience, with an average of 8.75 years riding compared to 19.05 years riding for males.

Bike type and engine capacity

	Male (%)	Female (%)
Scooter	4	12
Naked (standard)	17	26
Sports	33	29
Tourer	17	7
Cruiser	17	18
Trail/Enduro	6	3
Sports Tourer	3	3
Other	4	2

Table B2.1.1: Bike type by gender

	Male (%)	Female (%)
50 cc or less	<1	3
Between 51 cc and 125 cc	2	4
Between 126 cc and 260 cc	20	45
Between 261 cc and 500 cc	5	2
Between 501 cc and 750 cc	18	27
751 cc or more	55	19

Table B2.1.2 Bike engine capacity by gender

Gender differences in type of (main) motorcycle owned are evident. Some statistically significant differences can be noted; females were three times more likely to own a scooter as males, while males were more than twice as likely to ride a tourer. Females were also significantly more likely to ride a naked bike.

Table B2.1.2 shows differences between males and females in engine capacity of main motorcycle. Females were more than twice as likely to own a bike between 126 and 260cc as males, and were also more likely to own a bike between 501 and 750cc – differences that are statistically significant. Males were almost three times as likely as females to have a large bike of 751cc or more, a difference that is statistically significant.

Motorcycle licence type

A significantly smaller proportion of females held a full motorcycle licence than did males, with 72% of females versus 84% of males holding a full motorcycle licence. Females were also more likely to hold a motorcycle learners permit than males (16.3% versus 6.8% for males).

Typical usage and frequency

No notable gender differences exist regarding typical usage (i.e. commuter vs recreational rider). Females were more likely to fall into the category of 'riding once a fortnight or less', but there were no significant differences between genders on the other frequency categories. In other words, females who weren't very infrequent riders tended to ride about as often as their male counterparts.

Passengers and Group Riding

Females were significantly less likely to carry passengers, as a rule. Sixty-eight percent of females – twice the proportion of males (33%) – stated that they never carried a passenger on their motorcycle. Riding in groups was more common among female riders, however, with 31% of females stating that they rode with others on most or all trips, compared to 17% of male riders.

Rider categorisation

Some gender differences can be noted in how riders categorise themselves. A significantly greater proportion of males described themselves as 'enthusiasts' – riding because they love motorcycles – than females (73% versus 58%), while a significantly greater proportion of females categorise themselves as a 'fan' – riding because it's more fun than a car – than males (57% versus 44%). There were no gender differences in the proportion of males and females who ride professional, for practical reasons or for environmental reasons.

Part 2: Metropolitan versus Rural/Regional

General

A number of differences between Metropolitan riders and Rural/Regional riders were detected. This section summarises the key differences between the two groups, with riders categorised as metropolitan or rural/regional based on the postcode of where their main bike was usually garaged. Findings are based on the sub-sample of 1186 unique respondents, and unless otherwise stated, all differences or findings reported in this section are significant at a (Bonferroni adjusted) confidence level of .05.

Basic Demographics

Rural motorcyclists tended to be older and more experienced than metropolitan respondents, differences that are statistically significant.

	Metropolitan (n=817)	Rural/Regional (n=296)
Age (years)	41	47
Riding Experience (years)	16	24

Table B2.2.1: Age and riding experience by location (total n=1113)

A significantly greater proportion of rural riders (90%) than metro riders (80%) stated they hold a full motorcycle licence. Rural riders were also more likely to have a car as well as a bike.

Typical usage, Bike type, and Ride frequency

Rural riders were more likely to classify themselves as a 'recreational only' rider, and less likely to class themselves as commuters. They were also more likely to have a trail/enduro, and less likely to have a sports bike, as their main bike. Rural riders were also more apt to only ride their main bike once a week, or less often, and were less likely than metropolitan riders to ride daily or 4 to 5 times per week. Unsurprisingly, therefore, rural riders were more likely to have reported their last ride as being on the weekend.

Metro riders were also more likely to consider themselves frequent or regular riders, riding every day or most days (54%) compared to rural riders (32%).

Riding distance and time

Rural riders tended to take their most recent trip earlier in the day than metropolitan riders; they were more likely to ride at midday and during the afternoon, and less likely to ride at night (7pm to midnight).

Riders with bikes garaged in rural areas showed different patterns of trip length compared to metro riders. Whilst there were no differences between the two groups in terms of very short trips (10km or less), a clear trend emerged at the longer distances. Metro riders were more likely than rural riders to report their most recent trip as being between 11 and 50kms, while rural riders were more likely than metro riders to have recently travelled between 101 and 150kms, and between 201 to 500kms. This difference was consistent with trip duration data; metro riders were more likely to report a recent trip of between 21 mins and one hour duration, but rural riders were more likely to have travelled more than one hour.

Reason for taking the most recent trip was also more likely to be denoted as 'just for fun' by rural riders, while metro riders were twice as likely to have used the most recent trip for commuting purposes.

Rider category

Self classification of rider category by location appears below. Metro riders were more likely to view themselves as practical or environmental riders.

	Metropolitan (%)	Rural/Regional (%)
Practical	38	21
Professional	2	2
Fan	49	39
Enthusiast	73	76
Environmental	23	11

Table B2.2.2: Rider category by location

Note that the categories are not exclusive, and as such may sum to more than 100%.

Part 3: Motorcycle Profiles

Overview

In order to fully explore the relationships between motorcycle riders, their behaviour, and the motorcycles they ride, a number of 'motorcycle profiles' have been developed. Each of these profiles provides a brief snapshot of riders that travel on a particular type of bike (their main bike), as well as 'what is different' about the riders and their behaviour. A total of seven profiles are presented, one for each major bike type (including the newly-created sports tourer type). The findings describing bike or riders characteristics are based on unique respondents only (n=1194), whereas findings describing roads travelled are based on the entire sample (n=1922).

Key statistics comparing riders of different bike types are shown in table B2.3.1 below.

	Main bike type						
	Sports Bike	Naked (Standard)	Cruiser	Tourer	Trail/ Enduro	Scooter	Sports tourer
n	373	205	193	187	65	53	36
Age – mean (yrs)	36.75	39.98	46.60	48.12	40.79	44.16	43.21
Age – SD (yrs)	10.49	11.75	10.34	9.95	9.40	10.48	12.12
Riding experience – mean (yrs)	13.54	13.45	19.73	23.91	22.10	11.05	20.57
Riding experience – SD (yrs)	12.16	13.32	14.30	12.84	10.95	13.07	13.77
Category	**% within type**	**% within type**	**% within type**	**% within type**	**% within type**	**% within type**	**% within type**
Gender							
Male	90	83	88	95	94	70	89
Female	10	17	13	5	6	30	11

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	Main bike type						
	Sports Bike	**Naked (Standard)**	**Cruiser**	**Tourer**	**Trail/ Enduro**	**Scooter**	**Sports tourer**
Category	**% within type**	**% within type**	**% within type**	**% within type**	**% within type**	**% within type**	**% within type**
Motorcycle licence type							
Full motorcycle licence	79	71	88	97	88	57	100
Restricted motorcycle licence	9	12	4	2	5	8	0
Probationary motorcycle licence	2	6	2	0	2	8	0
Motorcycle learner permit	10	10	6	1	5	26	0
Don't have a licence	0	0	1	0	2	2	0
Main bike CCs							
50 cc or less	0	0	0	0	0	15	0
Between 51 cc and 125 cc	1	1	0	0	2	25	0
Between 126 cc and 260 cc	23	36	20	4	34	55	6
Between 261 cc and 500 cc	1	5	1	3	37	6	0
Between 501 cc and 750 cc	33	17	8	11	18	0	14
751 cc or more	43	41	70	81	8	0	81
Unsure	0	0	1	1	2	0	0
Main bike ride frequency							
Once a fortnight, or less	21	16	21	24	45	12	17
Once a week	13	17	26	25	17	10	17
2-3 times per week	24	22	24	28	17	21	31
4-5 times per week	19	20	16	12	6	21	17
Every day	23	25	13	12	15	37	19

	Main bike type						
	Sports Bike	**Naked (Standard)**	**Cruiser**	**Tourer**	**Trail/ Enduro**	**Scooter**	**Sports tourer**
Category	**% within type**	**% within type**	**% within type**	**% within type**	**% within type**	**% within type**	**% within type**
How often ride with other bikes							
Never	11	19	6	5	17	46	0
Rarely	28	30	25	22	22	32	20
Some trips	46	40	45	49	33	18	54
Most trips	15	11	23	22	20	2	26
All trips	0	0	1	1	8	2	0
How often carry a passenger							
Never	40	50	31	17	59	54	18
Rarely	36	28	27	34	31	24	47
Some trips	22	18	28	30	6	20	26
Most trips	2	4	13	17	3	2	6
All trips	0	0	1	2	0	0	3
Typical or most frequent bike use							
Commuter	11	16	5	5	9	32	6
Recreational rider	35	29	53	48	57	21	37
Both commuter and recreational rider	53	53	40	45	29	45	51
Other (please specify)	1	2	2	2	5	2	6

Table B2.3.1: Key statistics for riders of differing bike types, based on unique respondents only (n=1112). Note that main bike category 'other' (n=40) has been excluded.

Sports Bikes

Characteristics of sports bike riders:

- Comprised 32% of the total sample (n=373)
- Most (83%) had insured their bike
- Were more likely than scooter riders to hold a full motorcycle licence
- Approximately one third (35%) had 2 or more bikes; of these 'other' bikes, 35% were also sports bikes
- Sports bike riders tended to travel without a passenger on their most recent trip (only 9% took a passenger); 40% reported never taking a passenger, a significantly greater proportion than tourer riders
- Were more likely to report that their most recent trip was for commuting compared to other large bike types (tourer or cruiser), with 37% of recent sports bike trips reported as commuting; were also more likely than scooter riders to report their most recent trip to be 'just for fun', with 43% of sports bike riders' recent trips classified this way
- Wide variety of trip lengths; most recent trip varied from a few minutes to a few hours, with 46% riding for an hour or more
- The most commonly reported distance travelled on the most recent trip was between 21 and 50km (27%)
- Were more likely to have had their most recent trip on the weekend (62% of riders) compared to other large bike types
- Were more likely than scooter riders to say they ride because they love motorcycles
- Almost half of sports bike riders (46%) reported riding with other bikes on some trips, but, conversely, 11% reported never riding with other bikes

The top 10 (in fact the top 11, with a tie for 10th place) roads travelled by sports bike riders are listed below. Compared to scooter riders, a clear preference for freeways and highways can be noted.

Ranking	Road and suburb(s)/region	N
1	Monash Freeway; Malvern to Narre Warren	67
2	Eastern Freeway; Abbotsford to Donvale	47
3	Princes Highway/Dandenong Road; Windsor to Dandenong	34
4	Princes Freeway; Altona to Geelong	33
5	Western Ring Road; Greensborough to Altona	32
6	Nepean Highway; Elsternwick to Mornington	31
6	South Gippsland Highway; Dandenong to Korumburra	31
8	Hoddle St/Punt Road; Clifton Hill to St Kilda	28
9	CityLink; Strathmore to Malvern	25
10	Maroondah Highway; Lilydale to Mansfield	24
10	Springvale Rd; Doncaster to Aspendale Gardens	24

Table B2.3.2:   Top 10 roads travelled by sports bike riders

Naked (standard) bikes

Characteristics of standard riders:

- Comprised 18% of the total sample (n=205)
- Tended to ride because they love motorcycles, and because it's more fun than a car
- They were more likely to ride every day than tourer and cruiser riders; 51% of standard riders rode every day or most days
- Most had only one bike, with 34% having 2 or more
- Their most recent trip varied from a few minutes to a few hours, with 30% taking 2 hours or more
- Compared to scooter riders, standard riders were more likely to have made their last trip 'just for fun' (43%); compared to tourer or cruiser riders, standard riders' last trip was more likely commuting to or from work (41%)
- On their most recent trip, 90% did not take a passenger and 72% travelled alone (without other bikes); 50% of standard riders reported never carrying a passenger, while 49% rarely or never ride with other bikes

The top 10 (in fact the top 11, with a tie for 10th place) roads travelled by naked (standard) riders are listed below.

Ranking	Road and suburb(s)/region	N
1	Monash Freeway; Malvern to Narre Warren	43
2	Eastern Freeway; Abbotsford to Donvale	27
3	Hoddle St/Punt Road; Clifton Hill to St Kilda	23
4	Maroondah Highway; Lilydale to Mansfield	17
4	Nepean Highway; Elsternwick to Mornington	17
6	Burwood Highway; Burwood to Belgrave	15
7	South Gippsland Highway; Dandenong to Korumburra	14
8	Princes Highway/Dandenong Road; Windsor to Dandenong	13
9	Calder Freeway; Woodend to Essendon	12
10	Princes Freeway; Altona to Geelong	11
10	Tullamarine Freeway; Tullamarine to Melbourne	11

Table B2.3.3:   Top 10 roads travelled by naked (standard) riders

Cruisers

Characteristics of cruiser riders:

- Comprised 17% of the total sample (n=193)
- Were significantly older, on average, than standard, sports bike and trail bike riders
- Riding reported as typically recreational (53%) or both recreational and commuting (40%)
- Most (82%) rode because they love motorcycles
- Cruiser riders tended to ride semi-regularly (around once per week; 37%) or regularly (most days; 28%)
- Most (76%) cruiser riders had only one bike
- A greater proportion of cruiser riders (23%) than standard (12%) or sports bike riders (15%) reported carrying a passenger on most trips; 18% of cruiser riders took a passenger on their most recent trip
- A large proportion (72%) reported riding with other bikes on some or most trips
- A broad range of road types were travelled on their most recent trip – mostly freeways or highways (39%), main metro roads (41%), main regional roads (47%) and local streets (38%)
- Almost half of most recent trips (49%) were for more than 100km; 44% of most recent trips took more than two hours

The top 10 (in fact the top 11, with a tie for 9th place) roads travelled by cruiser riders are listed below.

Ranking	Road and suburb(s)/region	N
1	Princes Freeway; Altona to Geelong	33
2	Monash Freeway; Malvern to Narre Warren	29
3	Western Ring Road; Greensborough to Altona	19
4	Maroondah Highway/Whitehorse Road; Box Hill to Lilydale	16
5	Great Ocean Road; South coast	15
5	Nepean Highway; Elsternwick to Mornington	15
7	Eastern Freeway; Abbotsford to Donvale	12
8	Maroondah Highway; Lilydale to Mansfield	11
9	Beach Rd; St Kilda/South Melbourne to Mordialloc	10
9	Burwood Highway; Burwood to Belgrave	10
9	South Gippsland Highway; Dandenong to Korumburra	10

Table B2.3.4: Top 10 roads travelled by cruiser riders

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Tourers

Characteristics of tourer riders:

- Comprised 16% of the total sample (n=187)
- An overwhelming majority (97%) held a full motorcycle licence
- Were significantly older, on average, than standard, sports bike and trail bike riders
- Were significantly more likely than scooter and standard riders to typically ride for recreation; 48% considered themselves primarily recreational riders, 45% as both commuter and recreational rider
- Just less than half (46%) had 2 or more bikes
- Most (82%) said they ride because they love motorcycles; 42% ride because it's more fun than a car
- Were more likely than scooter, standard and sports bike riders to have more than one bike; 45% of tourer riders had 2 or more bikes
- Most tourer riders (76%) rode 2-3 times per week or less often
- Almost half (47%) said they take a passenger on some or most trips – a significantly greater proportion than standard and sports bike riders
- Trips tended to be longer for tourer riders than for riders of scooters and sports bikes; 45% of tourer riders rode for more than 2 hours on their most recent trip, while 49% travelled more than 100km
- On their most recent trip, more than half (57%) of tourer riders travelled on the weekend, while just over half (52%) travelled along regional main roads such as the Great Ocean Road for most of the trip's distance
- A significantly greater proportion of tourer riders (23%) than riders of standards, sports bikes or trail bikes took a passenger on their most recent trip
- Most recent trips (64%) were solo rides (without other bikes); 11% of recent trips were with 2 to 5 other bikes, 10% travelled with more than 10 bikes

The top 10 (in fact the top 12, with a tie for 10th place) roads travelled by tourer riders are listed below. The findings are consistent with figures indicating a tendency for longer (2+ hour) trips by tourer riders; note the appearance of longer regional roads such as the Hume Highway.

Ranking	Road and suburb(s)/region	N
1	Monash Freeway; Malvern to Narre Warren	24
2	South Gippsland Highway; Dandenong to Korumburra	21
3	Princes Freeway; Altona to Geelong	20
4	Princes Freeway/Highway; Narre Warren to Bairnsdale	18
5	Eastern Freeway; Abbotsford to Donvale	17
6	Western Ring Road; Greensborough to Altona	16
7	Hume Highway; Mickelham to Wodonga	14
8	Canterbury Rd; Canterbury to Montrose	13
8	Great Ocean Road; South coast	13
10	Great Alpine Road; Wangaratta to Lakes Entrance	12
10	Maroondah Highway; Lilydale to Mansfield	12
10	Warburton Highway; Lilydale to Warburton	12

Table B2.3.5: Top 10 roads travelled by tourer riders

Trail/Enduro bikes

Characteristics of trail/enduro riders:

- Comprised 6% of the total sample (n=65)
- Most (69%) rode because they love motorcycles; 48% rode because it's more fun than a car
- A greater proportion of trail/enduro riders (88%) held a full motorcycle licence than scooter riders (57%)
- Frequency of riding was dispersed among trail/enduro riders – 18% rode most days, 32% rode perhaps once per week, 19% rode about once per fortnight, and 18% rode once per month or less
- More than half (62%) of trail/enduro riders rode their main bike once a week or less often
- Trail/enduro riders were significantly less likely than standard, sports bike, tourer, cruiser and sports tourer riders to have not insured their bike
- Most trail/enduro riders (91%) reported never or rarely carrying a passenger; 97% of recent trips were without a passenger
- A large proportion (61%) of trail bike riders reported riding with other bikes on some, most or all trips; 47% of recent trips were with at least one other bike, and of these group rides, 90% were a planned ride with mates
- Unsurprisingly, a large proportion (54%) of recent trips were primarily on dirt roads
- Almost half (48%) of recent trips were between 30 and 150km, with 49% going for more than 2 hours
- A considerably greater proportion (40%) of trail/enduro bikes were garaged in rural areas than scooters, standards, sports bikes or cruisers
- Most recent trips (61%) were just for fun

The top 10 roads travelled by trail/enduro riders are listed below.

Ranking	Road and suburb(s)/region	N
1	Pasco Vale Road; Coolaroo to Moonee Ponds	6
2	CityLink; Strathmore to Malvern	5
3	Kings Way/Queens Rd; Melbourne	4
3	Princes Freeway; Altona to Geelong	4
3	Tullamarine Freeway; Tullamarine to Melbourne	4
6	Eastern Freeway; Abbotsford to Donvale	3
6	Forest Road South; Lara	3
6	King St; Melbourne	3
6	Melbourne Road; Corio to Geelong	3
6	Murray Valley Highway; Robinvale to Corryong	3

Table B2.3.6:   Top 10 roads travelled by trail/enduro riders

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Scooters

Characteristics of scooter riders:

- Comprised 5% of the total sample (n=53)
- Most (79%) had only one bike
- A significantly greater proportion (32%) reported their typical bike usage as a commuter, compared to riders of sports bikes, tourers and cruisers (11%, 5% and 5% respectively)
- Typically rode because it's more practical, and more environmentally friendly than driving a car; a significantly smaller proportion of scooter riders than riders of all other bike types said they ride because it's more fun than a car
- Females were better represented in the scooter rider group than in the tourer or trail bike rider group
- They tended to travel shorter distances than riders of other bike types – a significantly greater proportion of scooter riders (58%) travelled 15km or less on their most recent trip, compared to riders of other bike types; they were also less likely to take a two or more hour trip than riders of any other bike type
- Compared to tourer, cruiser and trail bike riders, scooter riders were more likely to have made their most recent trip on a weekday
- Most recent trip was typically taken alone, without other bikes; compared to other bike riders, scooter riders were more likely to never ride with other bikes
- Tended not to take passengers - 54% never carry a passenger
- Most scooter riders (73%) rode every day or most days
- Scooter riders' most recent trip was typically on metropolitan main roads (53% of riders) and local streets (66% of riders) (note that 'road type' categories are not mutually exclusive).

The top 10 (in fact the top 12, given the tie for 6th place) roads travelled by scooter riders are listed below. While the sample size is small, a preference for metropolitan main roads can be noted.

Ranking	Road and suburb(s)/region	N
1	Footscray Rd; Footscray to Melbourne CBD	7
2	Hoddle St/Punt Road; Clifton Hill to St Kilda	6
3	CityLink; Strathmore to Malvern	5
3	Tullamarine Freeway; Tullamarine to Melbourne	5
3	Whitehorse Rd; Balwyn to Box Hill	5
6	Flemington Road; North Melbourne/Flemington	4
6	Kings Way/Queens Rd; Melbourne	4
6	Monash Freeway; Malvern to Narre Warren	4
6	Mt Alexander Road; Essendon/Flemington/Nth Melbourne	4
6	Princes Highway/Dandenong Road; Windsor to Dandenong	4
6	Royal Parade; Parkville	4
6	St Kilda Road; St Kilda to Melbourne	4

Table B2.3.7: Top 10 roads travelled by scooter riders

Sports tourers

Note that this category of motorcycle was derived from the 'other' bike type responses (open text) to the question 'What sort of machine is your primary or main motorcycle?'

Characteristics of sports tourer riders:

- Comprised 3% of the total sample (n=36)
- Had a significantly greater number of years riding experience, on average, than scooter, standard and sports bike riders
- Those riding sports tourers tended to ride as both commuters and recreationally (51% both commuter and recreationally; 37% primarily recreationally)
- Most (83%) rode because they love motorcycles; 47% rode because it's more fun than a car
- Just under half (47%) of sports tourer riders rode every day or most days; 41% rode perhaps once per week
- A large proportion (65%) of sports tourer riders reported never or rarely carrying a passenger; 91% did not carry a passenger on their most recent trip
- There were no sports tourer riders who reported never riding with other bikes; 20% reported rarely riding with other bikes, while 80% reported riding with other bikes on some or most trips
- Almost half (42%) of sports tourer riders' most recent trips were for more than 100km; 37% took 2 or more hours
- For the most recent trip, there was an almost 50/50 split between weekend and weekday trips

The top 10 (in fact the top 11, with a tie for 8th place) roads travelled by sports tourer riders are listed in the following table.

Ranking	Road and suburb(s)/region	N
1	South Gippsland Highway; Dandenong to Korumburra	7
2	Monash Freeway; Malvern to Narre Warren	6
2	Western Ring Road; Greensborough to Altona	6
4	Burwood Highway; Burwood to Belgrave	5
4	Calder Freeway; Woodend to Essendon	5
4	Frankston Freeway; Bayside	5
4	Maroondah Highway; Lilydale to Mansfield	5
8	Bass Highway; Lang Lang to Philip Island	3
8	Bell St; Pasco Vale to Heidelberg	3
8	Ferntree Gully Road; Oakleigh to Ferntree Gully	3
8	Stud Rd; Dandenong to Bayswater	3

Table B2.3.8:   Top 10 roads travelled by sports tourer riders

Section C: Further Observations

The 'Typical Rider'

With nearly 2000 responses and 1200 unique respondents in the project, a loose profile of the 'typical' Victorian motorcyclist can be drawn. The typical motorcyclist would have the following set of attributes and behaviours:

- Male, late 30's to early 40's, with considerable riding experience;
- Rides for both commuting and fun;
- Owns a single large engine Sports bike, and a car as well;
- Rides most days; and
- Only occasionally rides with a passenger, or alongside other riders.

Design limitations

Some minor limitations to the project have been identified. The timing of the first two waves was not ideal; they arguably occurred too close to one another. This issue was unavoidable, as it was driven by circumstances outside the scope of the project itself, but is not particularly worrisome – the primary impact would be a dilution of seasonal effects, and a number of them have already been observed. Wave 3 did not suffer from this issue, and was appropriately distanced from the Wave 2, ensuring maximum data effectiveness.

A second small issue pertains to the rural/regional road list. Whilst a 'top 40' (or 42) road list sounds like a large number, the sheer size of the state of Victoria means that many roads may never have the chance to appear on the list – even if they are well travelled. Future research may benefit from having a pre-determined set of roads for respondents to choose from; depending on the nature of the project that might be limited to roads of certain size, roads in a particular region, or some other defining criteria.

A further limitation of the study, from a pure research viewpoint, pertains to the sampling process and sample mix. As outlined in the initial project proposal, pure random sampling was never a viable framework for data collection due to the lack of any centralised data source; indeed, even a large 'general population' mailing list

would have likely proved insufficient for this study's needs, as the target population is not high prevalence. When combined with the requirement to obtain a Victoria-wide data capture (i.e. a robust sample size), the project utilised slightly unusual sampling techniques, including repeated-measures sampling. This was a conscious decision, as it was deemed that increased sample size was of greater importance than a 'pure random' sample (and it directly compensates for it, at least partially).

The essence of the sampling issue, as outlined above, is that the possibility of slightly biased sample is a little higher than in other survey projects. Additionally, the repeated measure component has the possibility of reducing inter-wave variance, making wave-to-wave differences harder to detect. However, it is considered that neither of these possible weaknesses are anything more than deviations from the technical ideal, given the achieved sample size and clarity of results.

Further Research

The current project captured a wealth of information about Victorian motorcyclist characteristics and behaviour. In this sense, it represents an excellent launching point for further, more targeted research towards the ultimate goal of increasing safety for road users. Possibilities for further research include:

- A detailed analysis of the extra qualitative data collected by this project. Motorcycle riders were very keen to provide all sorts of detail and comments, beyond the scope of this project to fully analyse.

- Targeted research based on specific regions or roads, tailored to those riders who travel there. Such an approach would provide concentrated and robust data capture around the issues that are most pertinent to these areas. The findings of the current project – perhaps combined with the above qualitative exercise – could provide clear directions on the content and focus of such an exercise.

- Rider-specific research – for example, based around bike type – could also prove valuable. This project has confirmed (see the motorcycle profiles section) that riders of different types of motorcycles tend to vary in their riding activities; further research targeting the issues and concerns particular riding cohorts could prove useful. For example, research focussing on the behaviour and opinions of metropolitan scooter riders might prove very helpful in developing a specific safety strategy or communication campaign aimed at that group.

Summary

This project successfully provided a Victoria-wide snapshot of motorcyclist characteristics and behaviour. Data collected across the three seasons of measurement revealed a range of insights, including evidence of seasonality and a comprehensive list of roads most frequently used. A profile of the 'typical' Victorian motorcycle rider has emerged, along with a number of opportunities for further research.

Appendix A: Survey Instrument

The full survey instrument is contained on the following pages. It is shown in its original landscape format in order to exactly reflect the manner in which respondents viewed it.

Welcome to the VicRoads Motorcyclist Usage Survey

We are keen to understand where and how motorcyclists travel across Victoria, and we'd like your help to discover this.

The information you provide will be used to better target road safety initiatives, making Victorian roads safer for motorcyclists.

By completing this survey you will also be eligible to
win motorcycle protective gear to the value of $500.

Your responses to this survey will remain anonymous. Individual responses are recorded as part of the overall findings and will not be used for any other purpose. Your contact details will be kept strictly confidential and will not be provided to any third party.

To complete this survey:

1. Place a ✓ in the box of your choice. Please leave any questions that are not appropriate for you.

2. Post your survey back in the envelope provided:

   UltraFeedback Pty Ltd
   Confidential
   Reply Paid 156
   Eltham VIC 3095

3. Or fax the survey to: (03) 9439 7122

Alternatively you may **complete this survey online -** please log on to **www.ultrafeedback.com/survey/512**

1. About you

Please indicate your gender

☐ Male ☐ Female

Approximately how many years have you been riding motorcycles?

_____ years

In what year were you born? _____

What is your current motorcycle licence status?

☐ Full motorcycle licence ☐ Motorcycle learner permit

☐ Restricted motorcycle licence ☐ Don't currently have a motorcycle licence

☐ Probationary motorcycle licence ☐ Unsure

Do you also hold a car driver licence?

☐ Yes, full car driver licence ☐ Yes, car learner permit

☐ Yes, probationary car driver licence ☐ No

Do you have a car?

☐ Yes ☐ No

How would you describe your *typical* or *most frequent* type of motorcycle usage?

☐ Commuter

☐ Recreational rider

☐ Both commuter and recreational rider

☐ Other (please specify) _____

Have you ridden a motorcycle, scooter or similar in the past 12 months?

☐ Yes ☐ No

2. Your motorcycle

What sort of machine is your PRIMARY or MAIN motorcycle?

☐ Scooter ☐ Cruiser

☐ Naked (Standard) ☐ Trike

☐ Sports Bike ☐ Trail/Enduro

☐ Tourer ☐ Other (please specify)

_____

In which postcode is this motorcycle usually garage?

☐ ☐ ☐ ☐

What is the engine capacity of this motorcycle?

☐ 50 cc or less ☐ Between 501 cc and 750 cc

☐ Between 51 cc and 125 cc ☐ 751 cc or more

☐ Between 126 cc and 260 cc ☐ Unsure

☐ Between 261 cc and 500 cc

How often do you currently ride this motorcycle?

☐ Once a fortnight, or less ☐ 4-5 times per week

☐ Once a week ☐ Every day

☐ 2-3 times per week

Have you taken out insurance on this motorcycle?

☐ Yes ☐ No

In total, how many motorcycles do you have?

☐ 1 **(Please go to Section 4)** ☐ 5 ☐ 9
☐ 2 ☐ 6 ☐ 10 or more
☐ 3 ☐ 7
☐ 4 ☐ 8

3. Your other motorcycle

If you have answered '2' or more in the previous question, please answer the following questions in relation to the motorcycle that you use NEXT most frequently to your main motorcycle.

What sort of machine is your other motorcycle?

☐ Scooter ☐ Cruiser
☐ Naked (Standard) ☐ Trike
☐ Sports Bike ☐ Trail/Enduro
☐ Tourer ☐ Other (please specify) _____

In which postcode is your other motorcycle usually garaged?

☐ ☐ ☐ ☐

What is the engine capacity of your other motorcycle?

☐ 50 cc or less ☐ Between 501 cc and 750 cc
☐ Between 51 cc and 125 cc ☐ 751 cc or more
☐ Between 126 cc and 260 cc ☐ Unsure
☐ Between 261 cc and 500 cc

Have you taken out insurance on your other motorcycle?

☐ Yes ☐ No

How often do you ride your other motorcycle?

☐ Once a fortnight, or less ☐ 4-5 times per week
☐ Once a week ☐ Every day
☐ 2-3 times per week

4. Your most recent trip

We'd like to know more about how you've recently used your motorcycle. The questions on the next few pages refer to the most recent trip or journey you took on your primary or main motorcycle. **A trip refers to any ride that is uninterrupted, or only interrupted for a brief time** (for example, to fill up with petrol or drop into a shop).

How long ago was your most recent motorcycle trip?

☐ Today ☐ Within the last month
☐ Within the last week ☐ More than a month ago

On what day of the week was your most recent motorcycle trip?

☐ Monday ☐ Thursday ☐ Sunday
☐ Tuesday ☐ Friday ☐ Can't remember
☐ Wednesday ☐ Saturday

What time of the day did your trip take place? (If your trip was a long one, or broke across more than one time period, check all that apply)

☐ Early morning (between 5am & 9am) ☐ Evening (between 4pm & 7pm)
☐ Mid-morning (between 9am & 11am) ☐ Night (between 7pm & midnight)
☐ Midday (between 11am & 1pm) ☐ The small hours (between midnight & 5am)
☐ Afternoon (between 1pm & 4pm)

Approximately how long did this trip take?

☐ Under 10 minutes   ☐ Between 31 and 60 minutes

☐ Between 11 and 20 minutes ☐ Between 1 and 2 hours

☐ Between 21 and 30 minutes ☐ More than 2 hours

Approximately how many kilometres did you travel?

☐ 1 – 2 Km   ☐ 76 – 100 Km

☐ 3 – 5 Km   ☐ 101 – 150 Km

☐ 6 – 10 Km   ☐ 151 – 200 Km

☐ 11 – 15 Km   ☐ 201 – 300 Km

☐ 16 – 20 Km   ☐ 301 – 400 Km

☐ 21 – 30 Km   ☐ 401 – 500 km

☐ 31 – 50 Km   ☐ More than 500 Km

☐ 51 – 75 Km

On what sort of roads were you on for most of this trip's distance?
(mark as many options as appropriate)

☐ Freeways or Highways (e.g., Monash Freeway)

☐ Main/Arterial metropolitan roads (e.g., Hoddle Street)

☐ Main/Arterial regional roads (e.g., Great Ocean Road)

☐ Local streets

☐ Dirt roads or trails

☐ Off road (e.g. farm tracks on private property)

5. Which three roads did you travel on the most?

For your <u>most recent trip</u>, please enter the name and suburb, town or region of each road, with the road you travelled on FOR THE MOST TIME listed first.

For example, if you travelled from Bendigo to the Melbourne suburb of Northcote, your three most travelled roads might look like this:

Road 1
Name of road: Calder Highway/Freeway
Suburb/Town/Region: Bendigo to NW Melbourne suburbs

Road 2
Name of road: Bell St
Suburb/Town/Region: Coburg

Road 3
Name of road: St Georges Rd
Suburb/Town/Region: Coburg/Thornbury

If you can't remember how to spell the name of a road, can't decide which road you travelled on the most, or can't remember more than one or two roads – that's OK. Any information that you can give is worthwhile.

Road 1
Name of road _____

Suburb/Town/Region _____

Road 2
Name of road _____

Suburb/Town/Region _____

Road 3
Name of road _____

Suburb/Town/Region _____

6. Your most recent trip - why and how often

What was the reason for your most recent trip?

☐ Basic personal transport (e.g. going to a shop, visiting friends or family)

☐ Commuting to/from my place of work

☐ As part of my employment (e.g. travelling between work sites, making a delivery)

☐ Just for fun (e.g. just felt like a ride, organised a ride with mates)

☐ Other (please specify)

How often do you travel this route and/or make this trip on your motorcycle?

☐ Never (this was the first time)

☐ Rarely (e.g. less than once per month)

☐ Occasionally (e.g. once or twice per month)

☐ Sometimes (e.g. once or twice per week but not every weekday)

☐ Often (e.g. every weekday)

☐ Very often (e.g. daily, including weekends)

Why did you choose to ride along these particular roads?

For example: less traffic, less slippery road surface, easier to "lane split", etc.

_____

_____

_____

7. Your most recent trip - travelling with passengers

Did you take a passenger on this trip?

☐ Yes   ☐ No   **(Please go to Section 9)**

8. Your passenger on your most recent trip

How did your passenger travel?

☐ On the motorcycle behind you (i.e. pillion)   ☐ In a sidecar

For how much of the journey did your passenger ride with you?

☐ The whole trip   ☐ About half the trip

☐ Most of the trip   ☐ Less than half the trip

9. Your most recent trip - other motorcyclists

How many other riders on separate motorcycles accompanied you on your trip?

☐ None – it was only my bike **(Please go to Section 11)**   ☐ 6 – 10

☐ 1   ☐ More than 10

☐ 2 - 5

10. Other motorcyclists on your most recent trip

Why were you travelling with other motorcycles on this trip?

☐ It was a planned ride with some mates

☐ It was a club outing

☐ It just turned out that way – a group of us were going in the same direction

☐ Other (please specify) _____

11. Your most recent trip - typical or unusual?

Was your most recent trip a typical example of how you normally ride your motorcycle?

We'd like to know about roads that you regularly ride along. If your most recent trip was an unusual one, or was a ride that you've never done before (or would be unlikely to do again) please select 'No'.

☐ Yes **(Please go to Section 13)**   ☐ No

Was there anything unusual about your most recent trip? If so, please describe below.

_____

_____

_____

12. Please tell us about a typical trip you would make

We'd like to know about the roads you frequently travel on your motorcycle. **If the trip you have just described was NOT a typical example of the roads you frequently travel, please describe a typical trip below.**

As before, please enter the name and suburb/town/region of the three roads you would typically travel on, with the road you travel on FOR THE MOST TIME listed first.

If you can't remember how to spell the name of a road, can't decide which road you travel on the most, or can't remember more than one or two roads – that's OK. Any information that you can give is worthwhile.

Road 1
Name of road _____

Suburb/Town/Region _____

Road 2
Name of road

Suburb/Town/Region _____

Road 3
Name of road: _____

Suburb/Town/Region _____

How often do you travel this route and/or make this trip on your motorcycle?

☐ Rarely (e.g. less than once per month)

☐ Occasionally (e.g. once or twice per month)

☐ Sometimes (e.g. once or twice per week but not every weekday)

☐ Often (e.g. every weekday)

☐ Very often (e.g. daily, including weekends)

13. Your riding in general

How often do you carry a passenger on your motorcycle journeys?

☐ Never   ☐ Most trips

☐ Rarely   ☐ All trips

☐ Some trips

How often do you ride your motorcycle alongside other motorcyclists (i.e. as a group)?

☐ Never   ☐ Most trips

☐ Rarely   ☐ All trips

☐ Some trips

In the last month, how much have you been riding your motorcycle (compared to your normal or average use _for this time of year_)?

☐ A lot less than normal

☐ A little less than normal

☐ About normal

☐ A little more than normal

☐ A lot more than normal

If you selected 'a lot more' or 'a lot less' than normal, please briefly describe why here.

_____

_____

_____

14. And finally…

Have you ever been in a serious motorcycle crash (e.g. one that resulted in you being admitted to hospital)?

☐ Yes   ☐ No

Which category of motorcyclist best describes you?
(mark as many options as appropriate)

☐ Practical – I ride because it's cheaper and easier than a car

☐ Professional – I ride because it's part of my job

☐ Fan – I ride because it's more fun than a car

☐ Enthusiast – I ride because I love motorcycles

☐ Environmental – I ride because it's more environmentally friendly than driving a car

Which category best describes how often you ride a motorcycle, on average, for this time of year?

☐ Frequent rider – I ride every day

☐ Regular rider – I ride most days

☐ Semi-regular rider – I ride perhaps once a week

☐ Intermittent rider – I ride perhaps once a fortnight

☐ Very occasional rider – I ride once a month or less

Where did you hear about this survey?

_____

_____

_____

If there's anything else you'd like to tell us about your motorcycling, or if you'd like to give us some feedback about this survey, please do so in the space provided below

_____

_____

_____

15. Thank you

Thank you for taking the time to complete this survey.

An important part of this research is to discover how riding patterns change during different times of the year. May we ask you to participate again in a few months time?

☐ Yes, I would like to participate again

☐ No, please remove my name from the list

The more times you participate in this survey, the more chances you have to win motorcycle protective gear to the value of $500 (maximum 3 entries per person).

To be entered into the prize draw, please enter your contact details below:

Name	
Email address or postal address	
Phone	

Thank you again for your interest in this survey.

Please take care on the roads.