Report 13-UT-019

NSTSCE

National Surface Transportation Safety Center for Excellence

A Survey of Motorcyclists

Data for Research Design and Instrumentation

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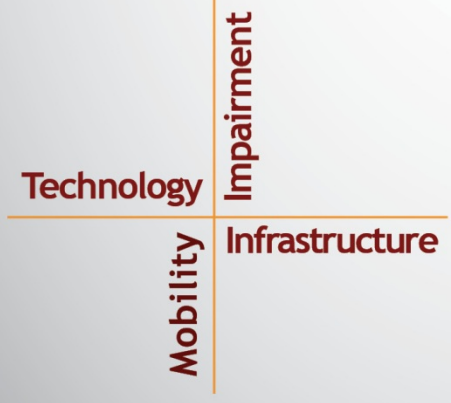
Submitted: March 1, 2013



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3500 Transportation Research Plaza • Blacksburg, Virginia 24061

ACKNOWLEDGMENTS

The authors of this report would like to acknowledge the support of the stakeholders of the National Surface Transportation Safety Center for Excellence (NSTSCE): Tom Dingus from the Virginia Tech Transportation Institute, John Capp from General Motors Corporation, Lincoln Cobb from the Federal Highway Administration, Chris Hayes from Travelers Insurance, Martin Walker from the Federal Motor Carrier Safety Administration, and Cathy McGhee from the Virginia Department of Transportation and the Virginia Center for Transportation Innovation and Research.

The NSTSCE stakeholders have jointly funded this research for the purpose of developing and disseminating advanced transportation safety techniques and innovations.

EXECUTIVE SUMMARY

INTRODUCTION

The purpose of this study is to provide insight into how people use their motorcycles with specific emphasis on areas that influence study design and research methods. The population of interest (motorcyclists) must be described and understood in order to design and conduct motorcycle safety research. A total of 424 motorcycle riders volunteered to complete a survey* that included 90 questions. These questions covered topics related to demographics (such as gender, age, location, and licensure), experience (years, mileage, and trip description), motorcycle characteristics, rider training, safety issues (maintenance, equipment, and crash data), and respondent interest (willingness, reasons for hesitation, and acceptable compensation). The general results of this survey, along with the more detailed analyses of selected variables of interest, will be useful in the design and implementation of motorcycle research.

FINDINGS

Some traits of these survey respondents are not completely reflective of the national motorcyclist population. Thus, care must be taken not to form generalizations about all riders based on these results. For example, the group does not appear to have as many riders of cruisers as is typical of the general population. This survey also includes a large percentage of fairly experienced riders who tend to ride in Virginia, a bias likely related to the method of recruitment (i.e., through an email list associated with The Motorcycle Safety Foundation [MSF] and through local advertisements). The majority of respondents are also willing to consider participation in an on-road motorcycle study. This willingness could be largely related to the type of rider who would voluntarily respond to an online survey. However, with these caveats in mind, it is informative to delve into the information included in these results. For instance, while not implying that all riders nationwide would be willing to participate in an on-road study, data do suggest certain methods for optimizing recruitment of the types of riders who did respond to this survey.

The group of motorcyclists who chose to complete this survey were mostly male (93%), and more than half of all respondents were in the 40-59 year age category. These percentages are fairly representative of the overall population of riders, according to a 2010 Motorcycle Industry Council survey.(1) Respondents rode in a variety of locations, although 20% of the total respondents rode mostly in Virginia. While most questions elicited a variety of responses, most riders indicated that they are trained, riding more than 100 riding days annually for work as well as pleasure, but also logging more miles in automobiles than on motorcycles. The average riding season was 10 months out of the year. Riders tended to maintain their own motorcycles and wear appropriate protective gear. Most of the primary motorcycles were around 10 years old or newer, and half of these were manufactured by BMW or Honda (with a variety of other types mentioned also). Although most riders had been involved in a "crash" (including laying the bike down), the majority had not been involved in multiple crashes.

* The survey conducted in this research study was funded by non-federal NSTSCE membership dues.

In general, the survey respondents indicated a high level of willingness to participate in an on-road study and to have their motorcycles instrumented for such. This willingness to participate did not appear to be directly related to factors such as rider age, training level, experience, or motorcycle type, make, or year. Regardless of these specific conditions, interest levels tended to be fairly high within the sample of respondents. For those riders who were the most hesitant to participate in an on-road study or allow motorcycle modification/instrumentation, the main concerns were invasion of privacy, inconvenience, and disruption of the freedom and stress release inherent in their riding activities. The respondents who indicated the most willingness to participate noted that they did have concerns about possible damage or altered appearance of their motorcycles, and were especially concerned about changes to their helmets. Overall, most riders who answered the question regarding compensation indicated that $100/month or less would be sufficient (many indicated that they would participate without monetary compensation). The most popular non-monetary compensation mentioned was accessories/gear.

The cluster analysis that was performed on select variables produced eight groups of motorcyclists, each with similar responses to these variables. The variables that were chosen included age, gender, annual riding mileage, number of motorcycles ridden, study participation willingness, sensor/equipment installation willingness, riding for work versus pleasure, and the type of motorcycle primarily driven. Three of the groups indicated high interest in study participation and the willingness to allow associated motorcycle modification. The first (and largest of all groups, incorporating over 50% of all respondents) included mostly males (93%), typically middle-aged (averaging 50 years old), who tended to ride more annual miles than most of the other groups. They rode for work (commuted) as well as for pleasure, and rode more than one motorcycle (averaging two), typically of the sport-touring or touring type. The next largest group (20% of all respondents) indicating high willingness levels consisted of younger members (average age of 31) with a male/female ratio of 92/8 percent, and rode a medium level of annual mileage compared to other groups. They rode for work as well as pleasure, and rode more than one motorcycle (averaging two), typically of the sport bike type. The third largest group of willing respondents (18% of the total respondents) included older members (average age of 64), at a male/female ratio of 96/4 percent, who rode more annual miles than most of the other groups. Most of these respondents rode more for pleasure than for work, and rode more than one motorcycle (averaging three), mostly of the sport-touring or touring type.

The remaining five clusters (those who tended to be less willing to participate in a study or allow sensor/equipment installation on their motorcycles) contained few members. The largest of these groups (6% of total respondents) included middle-aged members (average age of 46), all males, who rode a lower number of annual miles than most of the other groups. Most of these members rode more for pleasure than for work, and tended to only ride one motorcycle, mostly of the cruiser or sport bike type. The remaining four groups expressing low interest levels were so small (each group containing 1% or less of the total respondent population) that inference toward the general population was not reasonable. However, it is worthwhile to note that the common factor for all of these low-willingness groups was low to medium annual mileage on motorcycles.

CONCLUSIONS AND RECOMMENDATIONS

Knowledge of the characteristics and attitudes of the motorcyclist population can only improve the ability of researchers to effectively design and implement motorcycle safety research. This report includes a synopsis of many characteristics of this population with emphasis on factors related to study execution. Collection of more data is recommended, especially for subgroups of this population which were less represented in the survey data (such as individuals who typically rode in the less-represented states and the five clusters with fewer members as described in the cluster analysis discussion). However, motorcycle researchers should utilize applicable data from this study (perhaps supplemented with additional data collection) for specific research goals.

Based on the respondents that completed this survey, the general willingness of motorcyclists to participate in an on-road data collection study was fairly high, regardless of individual descriptors. When respondents were grouped via statistical analysis into clusters with common responses, more informative nuances are apparent. For example, riders who were the least willing to participate in on-road studies tended to accrue low to medium annual motorcycle mileage. Thus, if the intent of a specific research project is to collect data from riders of all mileage levels, extra effort toward recruiting these low-willingness riders would be required.

Factors cited as affecting participation for most of the respondents included invasion of privacy (including possible monitoring and legislation), the effort required and the disruption of routine, possible damage to equipment/helmet, and unsuitable personal circumstances. Based on levels of participation willingness, some concerns appeared to be more important than others. Respondents who were the least willing were especially concerned about privacy and disruption issues; those who were of medium willingness were also worried about being low-mileage, multi-bike, or novice riders; those who were the most willing focused largely on whether participation would damage or alter their equipment, particularly the helmet.

Since the average number of motorcycles owned and ridden was more than two for the survey population, consideration toward instrumentation of multiple bikes per participant – or the development of mobile instrumentation equipment – should be considered. Other instrumentation concerns highlighted by survey results include possible difficulties related to work conditions (e.g., most riders' bikes were parked uncovered in ground-level lots) and respondent use of accessories (many used luggage carriers or saddlebags, which would be affected by instrumentation). Researchers should also utilize survey results related to compensation and concerns with study participation to head off probable difficulties with effective implementation of their particular research plan. Most of the survey respondents would be willing to participate in an on-road data collection study for little compensation but, if compensation is offered, $100 per month or some type of biking accessories/gear would suit the majority of the respondents.

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LIST OF ABBREVIATIONS AND SYMBOLS

DOT	United States Department of Transportation
GPS	Global Positioning System
MSF	Motorcycle Safety Foundation

CHAPTER 1. BACKGROUND

Motorcyclist fatalities have been increasing over the last decade. According to 2009 records, motorcyclists comprise one out of seven road user fatalities.[2] However, the last detailed investigation of motorcyclist performance and crash factors was completed over 30 years ago.[3] In 2000, the U.S. Department of Transportation (DOT) and the National Highway Traffic Safety Administration published a document entitled *National Agenda for Motorcycle Safety*, which included a snapshot of motorcycle safety at that time and a blueprint for improvement in this area.[4] This effort resulted in four 'URGENT Recommendations,' including 'Research in Motorcycle Crashes' – specifically, immediate action to address critical issues in motorcycle safety through comprehensive, in-depth research. A follow-up document, *Implementation Guide for the National Agenda for Motorcycle Safety*, emphasized the need for motorcycle crash research, including data collection and dissemination related to motorcycle safety issues and motorcyclist attitudes.[5] The specific need to answer questions associated with rising motorcycle fatalities (such as: what are the vehicle-, roadway-, and rider-related factors that are associated with motorcycle crashes?) prompted the current research effort.[6]

This project explores a range of rider characteristics relevant for individuals interested in conducting motorcycle rider research. A survey* was administered to motorcycle riders to provide researchers with descriptors and information useful in many aspects of motorcycle-related research. For example, the analyzed rider-focused information could guide instrumentation design for data acquisition systems utilized in naturalistic studies as well as facilitate the recruitment of a range of riders and motorcycles. Survey data related to crash experience, including respondent characteristics and riding habits as well as crash details, can be used as background for crash reduction investigation.

* The survey conducted in this research study was funded by non-federal NSTSCE membership dues.

CHAPTER 2. RESEARCH APPROACH

The initial group of riders was recruited locally by contacting individuals: 1) included in an internal database who had indicated that they were motorcyclists, 2) by placing questionnaires with survey information on motorcycle windshields, and 3) by posting links to an electronic version of the questionnaire. The questionnaire was open to motorcycle riders over 18 years of age. The study was reviewed and approved by the Virginia Tech Institutional Review Board for the protection of human subjects, and all respondents consented to the study procedures. Most respondents completed the survey online, but some chose to fill out a paper copy and mail it in. An additional larger group of survey respondents was contacted with the assistance of Motorcycle Safety Foundation (MSF) forums. A link for the online survey was provided via these forums.

Questionnaire responses were utilized to obtain information about the following categories (some examples are included within each category).

- Demographics
    - Gender
    - Age
    - Primary Location
    - Licensure
- Experience
    - Years and Miles
    - Trip Variety
    - Typical Trip Description
    - Motorcycle vs. Automobile
- Bike Description
    - Physical Traits
    - Storage and Parking
- Training
    - Methods
    - Practicing Maneuvers
- Safety
    - Motorcycle Maintenance
    - Protective Gear
    - Crash Experience
- Interest
    - Study Participation
    - Equipment Modification Willingness
    - Reasons for Lack of Willingness
    - Acceptable Compensation

CHAPTER 3. FINDINGS AND APPLICATIONS

DESCRIPTIVE STATISTICS

The following information includes summaries of various types of survey results. For a detailed record of survey responses other than completely open-ended questions (including variables derived from the original survey questions), see Appendix A. Open-ended responses for questions related to why participants were not interested in study participation and regarding desired compensation (non-monetary) are discussed below but not included in the appendix.

Demographics

A total of 424 respondents from 44 states, two Canadian provinces, and two other countries participated in this survey. The following figure represents the distribution of respondents who rode mainly in the United States, according to the state in which they most frequently rode (one answer per respondent). In addition, two respondents rode mainly in Canada, nine in Romania, and one in Australia.

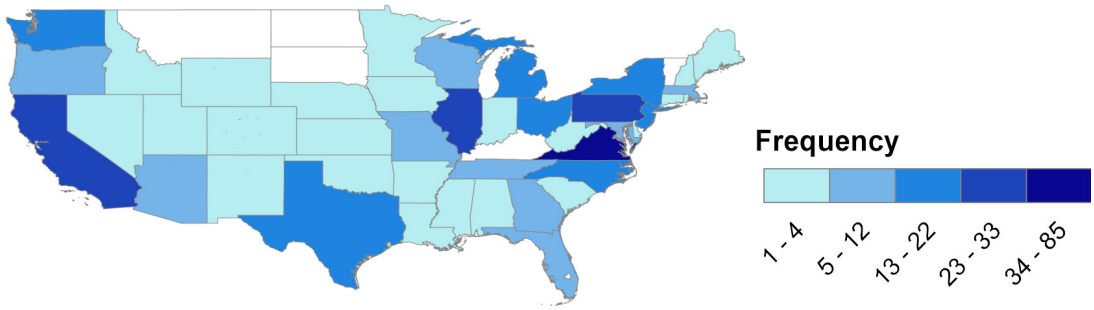

Figure 1. Map. Number of survey respondents by state.

Most surveys were completed online, although some were received via mail. The breakdown of respondent gender was 395 males and 29 females (93% males). The following table includes the age categories of respondents (where indicated by the respondent) at the time of survey completion.

Table 1. Number of survey respondents per age category.

Age Category	Number of Respondents	Percentage of Total Respondents
Less than 20 years old	3	1%
20-39 years old	90	21%
40-59 years old	244	58%
60 years or older	82	19%
(No response)	5	1%

Training

The following table provides one indication of the training level of the survey respondents. This table demonstrates that the data collected come from motorcyclists who have largely received structured training (at a ratio of nearly 3:1, trained versus untrained). Some additional indicators of training are discussed in the later section entitled *Interest*.

Table 2. Number of survey respondents per training category.

Have you taken a motorcycle training course (e.g., Motorcycle Safety Foundation)?	Number of Respondents	Percentage of Total Respondents
Yes	302	71%
No	115	27%
(No response)	7	2%

Experience

Although riding experience comes in many forms, the following three tables are indicators of some aspects of this construct. The first, Table 3, uses respondent age and the age at which the motorcycle license was obtained to determine the total number of years that each rider was licensed to ride a motorcycle. Although just over a fourth of the respondents had held their licenses for less than 10 years, in general, this is quite an experienced group in terms of licensure duration. Well over half of the respondents had been licensed for more than 20 years.

Table 3. Number of years as a licensed motorcyclist.

Number of Years With a Motorcycle License	Number of Respondents	Percentage of Total Respondents
Less than 10	115	27%
10-19	57	13%
20-29	74	18%
30-39	108	25%
40-49	53	13%
50 or more	5	1%
(No response)	12	3%

Table 4 includes the average number of days per year of riding. Note that these numbers do not take into account the length (mileage) of the trips. Thus, riding one day for a few miles (e.g., to work and back) was taken into account in the same way that a 1-day, 100-mile trip was recorded. The information in this table indicates that 2.5 times more of the responding riders got on their motorcycles 100 days or more per year than did those who rode fewer than 100 days yearly.

Table 4. Average number of days riding per year.

Number of Days Riding Per Year	Number of Respondents	Percentage of Total Respondents
Less than 100	112	26%
100-199	138	33%
200-299	93	22%
300 or more	56	13%
(No response)	25	6%

Table 5 takes the actual length of the trips into account by tallying the total mileage logged on the primary motorcycle (the one that the respondent rode most often) during the past year. The miles indicated do not differentiate between riders who, for example, only took long trips during the summer versus those who rode to work every day throughout the entire year. Respondents who rode an average of less than 10,000 miles per year compared to those who averaged 10,000 miles or more per year by a ratio of 3:1. These results are consistent with the national average based on Kelley Blue Book, which is between 3,000 and 6,000 miles, depending on the type of motorcycle.[7] In this survey, 28% (118) of the total responses fell between 3,000 and 6,000 miles.

Table 5. Total riding mileage during the last year (primary motorcycle).

Number of Miles Ridden Over Last Year	Number of Respondents	Percentage of Total Respondents
Less than 2000	64	15%
2000-3999	81	19%
4000-5999	67	16%
6000-7999	46	11%
8000-9999	43	10%
10,000-11,999	35	8%
12,000-13,999	25	6%
14,000-15,999	20	5%
16,000-17,999	4	1%
18,000-19,999	10	2%
20,000 or more	19	5%
(No response)	10	2%

Motorcycle Description

Table 6 lists the type of primary motorcycle that the respondents rode. The responses to the survey questions about motorcycle make and model were categorized according to these motorcycle types, based on definitions from the MSF.[4]

- Sport-Touring: Combines the traveling comfort of touring bikes with the responsiveness of sport bikes. Fewer amenities than touring bikes, but more high-performance. Especially suited for medium- to long-distance travel on curved roads.

- Touring: Larger motorcycles designed with amenities (e.g., backrests, large windscreens, and often radios and navigation systems), intended for comfort. Especially suited to long-distance travel in comfort. Riders are in an upright or slightly leaned back position.
- Cruiser: Classic American style of long profile with low saddle height. Designed especially for appearance, style, and sound, with less focus on performance. Most comfortable for low to moderate speeds, but not as comfortable for long-distance, highway-speed riding. Riders are in an upright or slightly leaned back position.
- Sport Bike: Designed similarly to road-racing motorcycles, with a streamlined profile intended for a forward-leaning driving position. Emphasis is on performance and handling more than comfort.
- Dual-Purpose: Designed to be used both on- and off-road. Profile is tall and narrow, suitable for highway and non-highway use.
- Traditional (standard): Designed for practicality, with few amenities. Mid-range in terms of ergonomics and performance. Riders are in an upright position.
- 2-1 Trike: a three-wheeled vehicle, with a typical one-wheel motorcycle front design and a two-wheel automobile-type rear axle. Licensed as motorcycles, but performance is quite different from other motorcycles.
- Scooter: Small, light, low-powered bikes designed for use at low to medium speeds, on urban streets. Most are not suitable or legal for use on high-speed or controlled-access roadways.

Table 6. Type of primary motorcycle.

Motorcycle Type	Number of Respondents	Percentage of Total Respondents
Sport-Touring	103	24%
Touring	96	23%
Cruiser	74	17%
Sport Bike	67	16%
Dual-Purpose	47	11%
Traditional	28	7%
2-1 Trike	2	<1%
Scooter	1	<1%
Unknown	6	1%

The majority of respondents rode a motorcycle that was model year 2000 or later, with the number of owners of older motorcycles dropping each decade thereafter (Table 7).

Table 7. Year of primary motorcycle.

Motorcycle Year	Number of Respondents	Percentage of Total Respondents
2005-2009	154	36%
2000-2004	118	28%
1995-1999	57	14%
1990-1994	18	4%
1985-1989	35	8%
1980-1984	23	6%
1979 or older	14	3%
No response	5	1%

The make of the primary motorcycle for half of the respondents was BMW or Honda, although a variety of makes was represented, as is evident in Table 8. The majority of motorcycles owned by this respondent group were of German or Japanese manufacture.

Table 8. Make of primary motorcycle.

Motorcycle Make	Number of Respondents	Percentage of Total Respondents
BMW	118	28%
Honda	95	22%
Yamaha	69	16%
Harley Davidson	43	10%
Suzuki	34	8%
Kawasaki	26	6%
Triumph	13	3%
Ducati	11	3%
Buell	2	<0.5%
Aprilia	1	<0.5%
BSA	1	<0.5%
CanAm	1	<0.5%
Custom Built	1	<0.5%
Husqvarna	1	<0.5%
KTM	1	<0.5%
Piaggio	1	<0.5%
Victory	1	<0.5%
No response	5	1%

Safety

One measure of motorcycle safety – the number of crashes in which a rider has been involved – is represented in Table 9. More than half of the riders surveyed had been involved in only one crash, or had not been in any crashes. For multi-crash drivers, the number of crashes experienced dropped quite a bit after three crashes. Only a handful of riders (who responded to this question)

had been involved in more than five crashes. Note that these were self-reported crashes, defined as "…any type of crash – accidently laid your bike down while moving or ran into something or struck by another vehicle/animal."

Table 9. Number of crashes.

Number of Crashes	Number of Respondents	Percentage of Total Respondents
0	115	27%
1	117	28%
2	67	16%
3	50	12%
4	18	4%
5	13	3%
6	4	1%
7	5	1%
8	2	1%
10 or more	8	2%
No response	25	5%

The previous tables provide a picture of the characteristics of the specific population that chose to complete this survey. Respondents tended to possess similar traits (i.e., responses were clustered more toward certain choices than spread evenly among the answers). In general, the riders were middle-aged, trained, experienced people who rode 100 or more days per year, averaging less than 10,000 miles per year. Their motorcycles were typically fairly new (many models made within the last decade), which is representative of the current overall U.S. rider population .[8] Half of the surveyed riders drove a BMW or Honda motorcycle of the touring or sport-touring variety. This demographic is not perfectly reflective of the current U.S. population, where the cruiser is the most popular type of motorcycle.[4] The cruiser was the third most popular in this survey sample. Most respondents had not been involved in multiple crashes, by their own account. According to a Motorcycle Industry Council Owner Survey conducted in 2008, this survey population is fairly representative of the national snapshot of motorcycle owners in terms of age (more older than younger riders) and gender (many more males than females, although the percentage of riders who are female is increasing, and is now more than 10%).[8]

Many of the other questions on the survey supplement this information, and these responses are listed in Appendix A. Further detail about the riders (demographics, training, experience, and behavior), their motorcycles, and interest in participating in a research study involving their motorcycle riding activities is provided. The following section includes information related to further research; specifically, the level of interest various groups of respondents had in participating in an on-road study exploring motorcycle riding behaviors and rider performance.

Other Variables

The following summaries present a picture of some additional riders' habits and motorcycle-related descriptors. Table 10 includes descriptive statistics for some of the survey items with numeric responses. These data were reviewed using the Chauvenet's Criterion method of outlier detection, and some values were removed from the data set before these statistics were compiled. A detailed account of all responses to the remaining survey questions (with outliers removed) is provided in the Appendix.

Table 10. Survey statistics.

Question	N	Mean	Std Dev	Minimum	Maximum
Age Obtained Motorcycle (MC) License (YEARS)	417	25.6	11.1	13	68
Age Began Riding Street/On-Road MC (YEARS)	422	22.6	9.7	10	68
Age Began Riding Off-Road MC (YEARS)	260	17.4	10.4	4	66
Total Number of Years as Licensed MC Rider	412	22.8	14.9	<1	55
Number of Street MCs Ridden Last 12 Months	422	2.4	2.0	0	20
Number MCs Own or Lease	423	2.8	4.2	0	55
Miles Rode MCs Last 12 Months	417	8771.9	7115.2	2	50000
Year Purchased This MC	416	2005	4.7	1981	2009
Odometer Reading Primary MC (MILES)	407	34057	30709	0	196530
If Used MC, Odometer Reading Upon Purchase (MILES)	247	18922.1	20186.0	16	121000
Miles Rode This MC On Road Last 12 Months	414	7088.0	6134.0	0	40000
Miles Car was Driven Last 12 Months	412	11065.1	8732.5	0	60000
Days Per Week Commute on MC	407	2.5	2.0	0	7
Minutes For This Commute (One-Way)	311	27.5	17.4	1	120
Miles For This Commute (One-Way)	310	18.7	15.5	0	100
Miles Ridden For Common Pleasure Trip (entire travel period, start to destination)	418	431.0	745.4	0	5300
Avg. Miles/Day For Common Pleasure Trip	404	268.8	205.1	0	1000
Most Miles Ridden in One Day	407	552.1	325.0	1	1535
Longest Ride (Days) Expected Next Year	381	7.3	13.5	0	180

Question	N	Mean	Std Dev	Minimum	Maximum
Longest Ride (Miles) Expected Next Year	376	2160.1	2330.1	0	20000
How Long Ridden Before Taking a Break (HOURS)	417	2.0	0.7	0.5	5
Riding Season Begin Month (1=January, etc.)	179	3.6	1.1	2	11
Riding Season End Month (1=January, etc.)	178	10.6	1.8	1	12
Total Number of Months Riding Per Year	419	10.4	2.1	2	12
Average Number of Days Riding Per Year	399	163.4	98.1	0	365
Times Practice Hard Braking/Swerving Per Year	418	7.2	7.3	0	20
Times Practice Stunt Maneuvers Per Year	420	1.0	3.7	0	20
How Many Helmets Owned	419	2.9	1.9	1	20
How Many Times Experienced a Crash	399	1.8	2.2	0	20
If Crashed, How Many Other Vehicles Involved	299	0.4	0.6	0	2
If Crash Involved a Pedestrian, How Many Pedestrians Involved	4	1.0	0.0	1	1
Interest Level for On-Road Study Participation (from “0=wouldn’t do it under any circumstances” to “5=would probably be willing”)	415	4.4	1.2	0	5
Willingness Install Sensors/Cameras on MC (from “0=wouldn’t do it under any circumstances” to “5=would probably be willing”)	417	4.1	1.5	0	5
Willingness Wear Research Helmet (from “0=wouldn’t do it under any circumstances” to “5=would probably be willing”)	417	4.1	1.4	0	5
Willingness Install Sensors/Cameras on Helmet (from “0=wouldn’t do it under any circumstances” to “5=would probably be willing”)	416	4.1	1.4	0	5
Willingness Install Detachable Cable Helmet-MC (from “0=wouldn’t do it under any circumstances” to “5=would probably be willing”)	416	4.0	1.5	0	5

Various observations can be made regarding the motorcycle riders who completed this survey, based on the in the information in Table 10. The respondents tended to have a substantial amount of experience riding motorcycles (measured in both years and miles), although there was quite a wide range for most of the variables, indicating that a variety of types of riders was represented with a fairly experienced average respondent. On average, respondents rode motorcycles fewer miles per year than they logged in cars, but miles on a motorcycle averaged nearly 4/5 of the annual average car mileage. These riders tended to use their motorcycles for commuting to work a few days per week (although both extremes were represented in the data set, from none to 7 days per week), with a nearly 20-mile average one-way commute (again, with a wide overall range). Pleasure trips were fairly extensive, with week-long planned pleasure trips the norm (although some consideration should be given to the fact that "common" is a relative term, and might not have been interpreted consistently among respondents). Nearly 180 respondents out of the 424 total had a riding season (other than year-round), with a typical season of mid-March until mid-October. Including those who rode year-round, the average riding season was 10 months out of the year, with an average of 163 days per year (and a range of 0 to 365). The riders tended to take breaks after about two hours of riding (note that the highest option in the survey is "five or more hours," which was included as five hours in the data set, so two hours might be a slight underestimate). The majority of these respondents did not practice hard braking, swerving, or (especially) stunts often throughout the year. The average number of motorcycles owned or leased was three, as was the number of helmets owned. The average number of lifetime crashes was close to two, although the range was 0 to 20. The original survey data included one response of 100 crashes, and another of 500 crashes. These few responses may have been provided for a variety of reasons or just in error. Chauvenet's Criterion was utilized to determine that these values were outliers and, thus, the values for this variable were removed from the analyses and are not included in the Table 10 data. The average respondent's willingness to participate in an on-road study (and to be receptive to the associated instrumentation) was at 4 or more on a scale of 0=not willing to 5=probably willing.

There were also many survey questions with answers in nominal category or open-ended formats. Many of these questions elicited a wide variety of responses, and most of these are in the Appendix. However, some of the pertinent results to select questions are described below.

The majority of riders stored their motorcycles in a garage/at home (84%), with 87% of these motorcycles near an electrical outlet. Approximately a third of the riders tended to cover their motorcycles at home. When the motorcycle was ridden to work, the most frequent place to park was a ground level parking lot (63%), with 18% using a parking structure or garage, and 12% parking on the street. Nearly all of the riders (91%) left their bikes uncovered at work. The majority of respondents had high-speed Internet access at home (95% of all riders, 4/5 of these with wireless capability).

The majority of motorcycles had windshields and luggage carriers or saddlebags (around 80%). An examination of the use of storage accessories by motorcycle type revealed that 96% of respondents who rode touring motorcycles, 89% of those who rode sport-touring motorcycles, and around 70% of the owners of cruisers and dual-purpose motorcycles always (or almost always) used luggage carriers or saddle bags. Various combinations of items were carried in the luggage/saddlebag areas, the most common including clothing, first aid kits, and food/beverages,

and there was a range of responses related to how full these areas tended to be. An assortment of other accessories was used (a back rest and exhaust/muffler modification being the most common), although more than a fourth of respondents did not have any of the listed accessories. More than half of the respondents who rode touring and cruiser motorcycles used back rests (68% and 54%, respectively). In addition, 70% of respondents did not use any type of bike-to-bike radio system, only 12% used a cell phone while on the motorcycle, and slightly more than half of the riders used a Global Positioning System (GPS) on their motorcycle.

More than half of those surveyed split their riding time equally between weekdays and the weekend, with the remaining riders fairly split between those riding more during the week and those riding mainly on weekends. Most of the respondents commuted at least once per week, as well as riding for pleasure (only around 7% rode solely for pleasure). Various answers indicated that most of the respondents rode for purpose (work, errands, etc.) as well as for pleasure. On a scale including "Very frequently," "Frequently," "Sometimes," "Rarely," and "Never," around 40% of the respondents frequently (or very frequently) rode after dark, with a similar percentage reporting "sometimes" riding after dark. Nearly half of them rode on suburban roads, with a third on mostly rural roads and the remaining small percentage on mostly urban roadways. The most common road type (at a ratio of 2:1) was two-way roads (one lane in each direction) as opposed to multi-lane roads. About 64% of the respondents never or rarely rode with a passenger while taking a pleasure trip.

Most riders listed a variety of methods used to learn to ride, with a third reporting that they simply taught themselves. One fourth reported that they learned through only a training course. (About 70% of the respondents reported having taken a motorcycle training course at some point.) Most riders performed maintenance on their own motorcycles (30% always did, and 60% did as much as they were able). Half of the riders charged their battery during long breaks (e.g., winter), while the remaining riders never did, or only when there was a problem. More than half of the respondents consistently checked their tire condition and lights before they rode, and nearly half checked the braking system before riding. Most riders wore some combination of protective gear, the most common combination being a helmet, face shield, gloves, and jacket. Most respondents tended to wear bright, colorful, reflective clothing, around 90% wore boots, and 99% always or almost always wore a helmet (82% being full-face helmets). Even when state law did not require a helmet, 98% of the riders wore one. Around 73% of the respondents stated that they had been involved in a crash (defined as any type of crash, including accidentally laying down the bike while moving, running into something, or being struck by another vehicle/animal). The majority of these crashes (63%) did not involve another vehicle, and only 1% involved a pedestrian. The most common cause of the crash is listed as driver fault (45%), and the location of the crash was normally either in a curve/bend or at an intersection. Most drivers who reported having been involved in a crash said that they were not speeding (88%).

Riders were asked the open-ended question, "What pay would be acceptable per month to attain your participation in research in which small data acquisition hardware was mounted on your motorcycle for one riding season?" Quite a variety of requests was made, but the most common response (about 25% of those surveyed) was that no payment would be required. The next most popular answer was $100 per month.

INTEREST

Figures 2 through 9 are related to the same survey question. This question asked "What is your level of interest in participating in an on-road study exploring motorcycle riding behaviors and rider performance?" Each figure below explores the level of interest for a particular respondent trait of interest in research. In other words, the question being investigated by these analyses is whether certain types of motorcyclists tend to be more willing to participate in such studies. The answers to this question will be very useful in designing and recruiting for such studies, in terms of knowing who is likely to participate, and which groups will require heavier recruiting in order to agree to participate.

Note that, in all graphs, the vertical axis indicates a percentage of respondents *for each horizontal axis category*. Thus, each graph is intended to provide a visualization of each horizontal axis category's distribution of responses. For example, in Figure 2, a percentage value of around 75% for level 5 interest in the age category "20-39" is not the same as the percentage value of 75% at level 5 for the category "60 or older" because the total number of responses for each of these categories (n) is not the same. Thus, the total number of people indicating interest level 5 in each category was not the same. The statement may be made, however, that the same percentage of each separate group's respondents indicated an interest level of 5. All graphs include only descriptive statistics because of the abundance of other factors which likely affect the provided results.

Interest and Age

Figure 2 depicts the relationship between interest in study participation and respondent age category. Note that the majority of respondents in each age category indicated the highest level of interest in study participation (except in the "Less than 20" category, which was comprised of only three respondents). With the exception of this small group of three riders, regardless of the age category, the number of respondents steadily increased with higher interest levels.

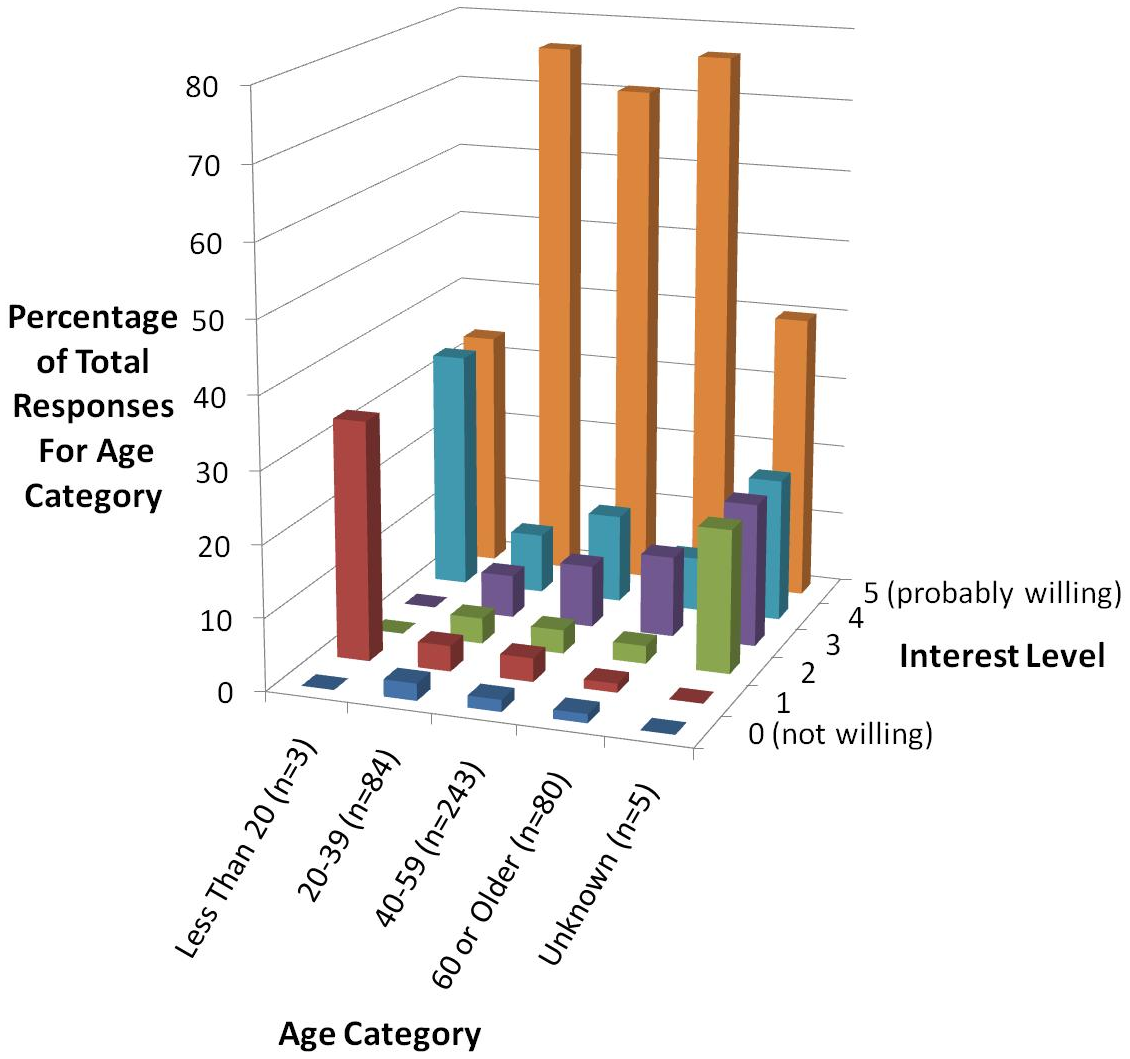

Figure 2. Graph. Percentage of total respondents per age category for each level of interest in study participation.

Interest and Training

Figure 3 depicts the relationship between interest in study participation and respondent motorcycle training category. This training level is a composite score based on the answers to three survey questions:

- Please list any motorcycle-related certifications in addition to your rider's license/permit/endorsement (examples include training or maintenance certifications). Note: if no certifications are listed, this aspect of the training score is recorded as "0."
- Have you taken a motorcycle training course (e.g., Motorcycle Safety Foundation)?

- Estimate how many separate occasions in the last year you practiced hard braking or swerving on your street bike (e.g., going to a parking lot and practicing hard braking)?

Note that, as demonstrated for the age categories, the majority of respondents in each training category indicated the highest level of interest in study participation. Those riders who had the lowest training levels tended slightly more toward a lower interest level, but even within this training category, more respondents were interested in participation than not. Study recruitment might be more effective if riders with lower levels of training are recruited slightly more heavily.

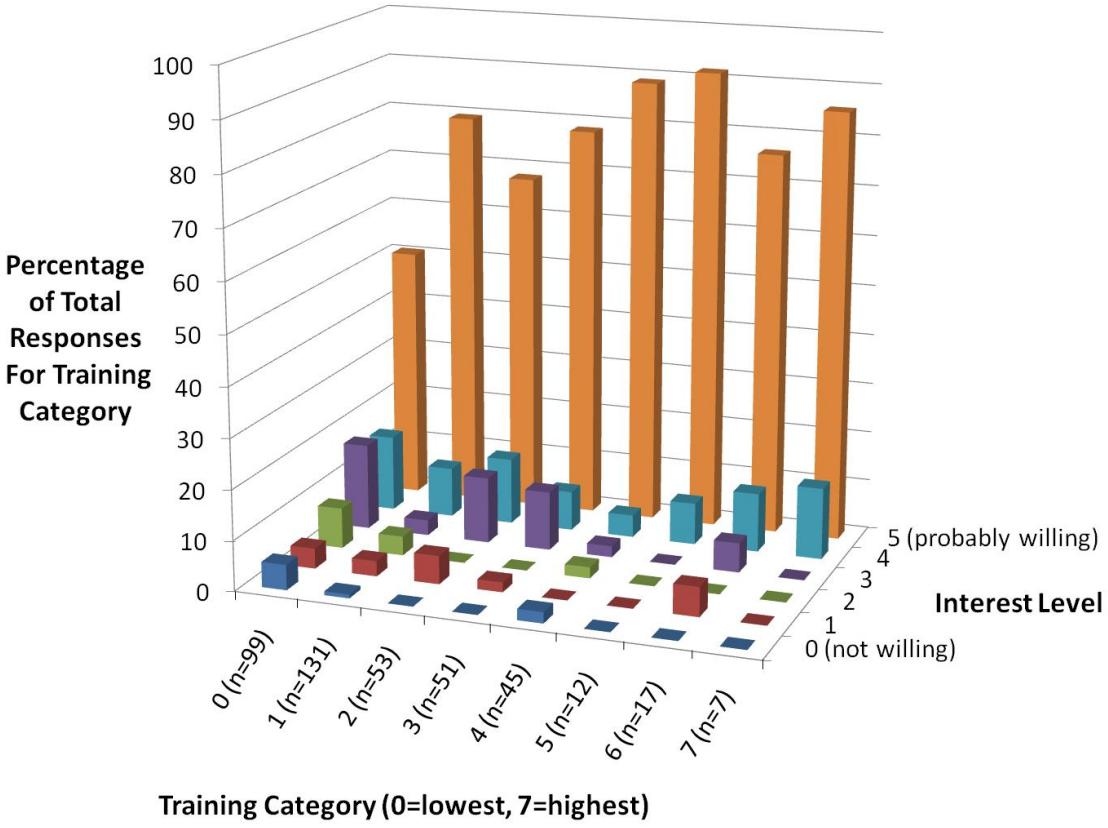

Figure 3. Graph. Percentage of total respondents per training category for each level of interest in study participation.

Interest and Licensure

Figure 4 depicts the relationship between interest in study participation and length of respondent licensure. The pattern discussed above holds for this area as well; i.e., for all levels of years with a motorcycle license, the majority of riders responded with the highest level of interest. In general, the percentage of respondents increased for each category with increasing interest level.

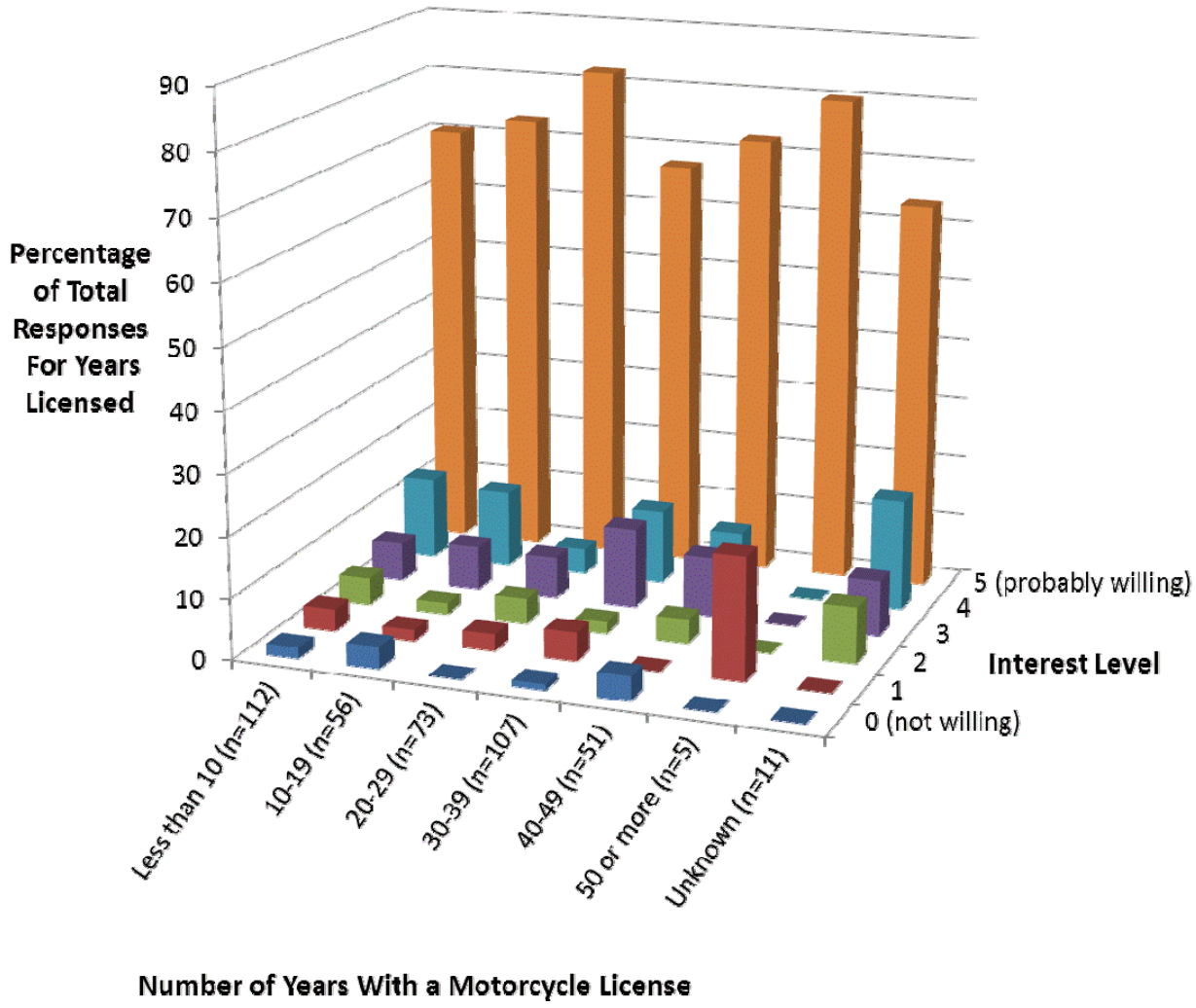

Figure 4. Graph. Percentage of total respondents per years licensed for each level of interest in study participation.

Interest and Number of Days Ridden

Figure 5 depicts the relationship between interest in study participation and the average number of days of riding per year. Again, in each category of riding frequency (in days, regardless of mileage), the majority of riders responded with the highest level of interest. Also, as with previous categories, the frequency of responses seemed to generally increase from low to high interest.

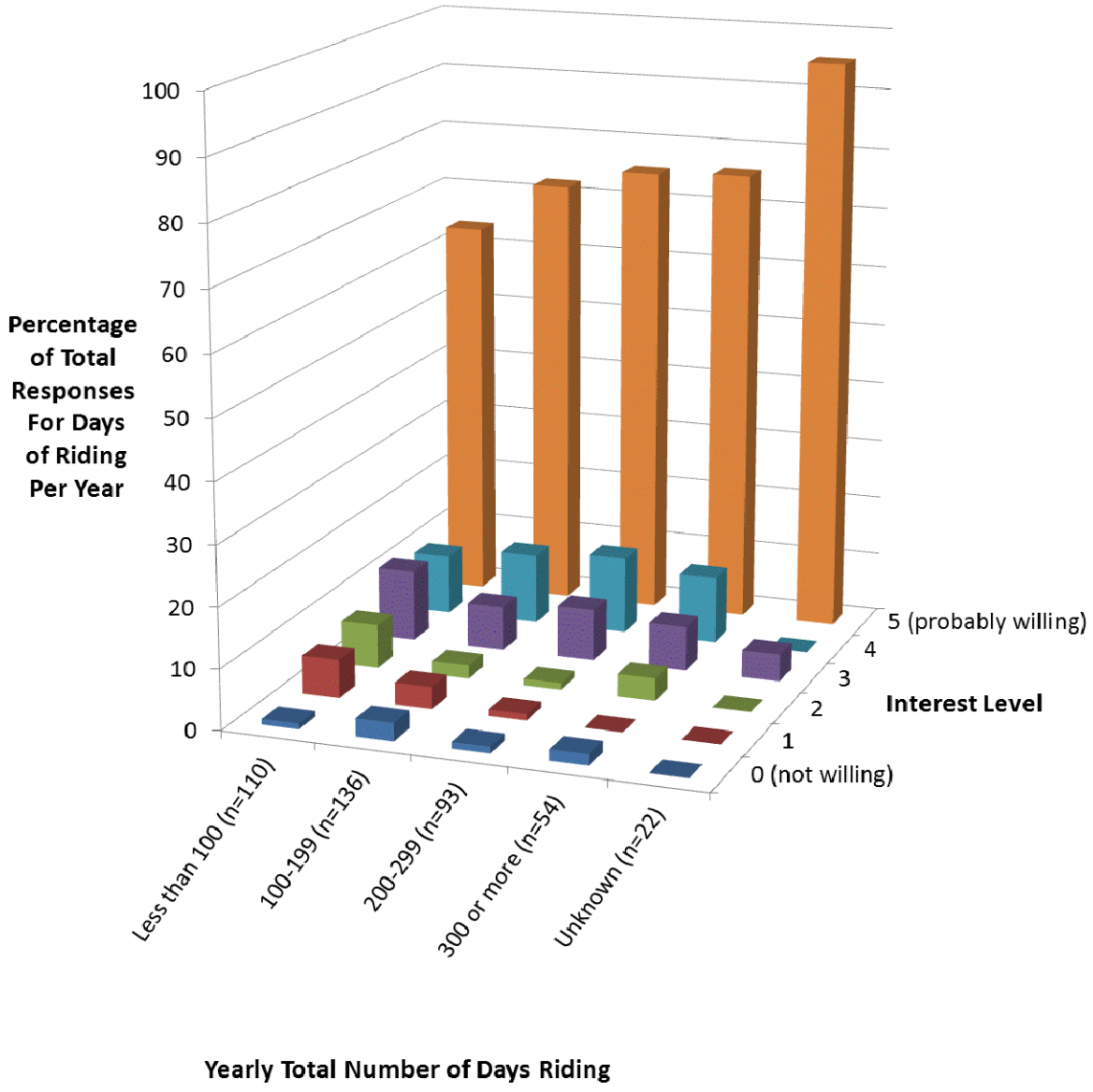

Figure 5. Graph. Percentage of total respondents per days ridden annually for each level of interest in study participation.

Interest and Number of Miles Ridden

Figure 6 depicts the relationship between interest in study participation and the average annual riding mileage. The majority of riders responded with the highest level of interest, which is the pattern for previous graphs. There are no extraordinary differences between categories, but some riders who indicated lower mileage (less than 8,000 miles annually) may have more of a tendency toward less interest.

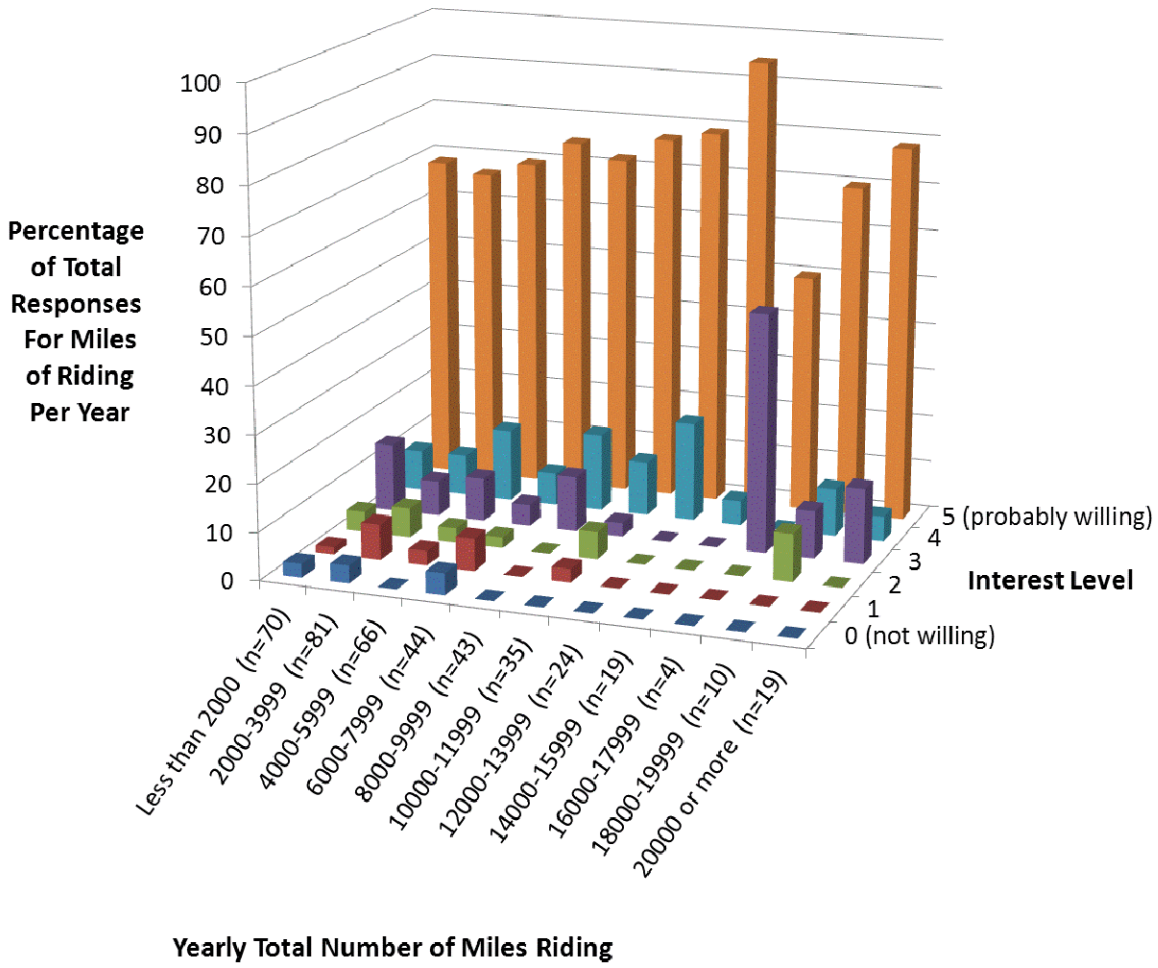

Figure 6. Graph. Percentage of total respondents per miles ridden annually for each level of interest in study participation.

Interest and Motorcycle Type

Figure 7 depicts the relationship between interest in study participation and the respondent's primary motorcycle type.

Again, the majority of riders in each category responded with the highest level of interest. Though difficult to determine fully from this small sample, riders of traditional bikes may generally be less willing than riders of the other bike types.

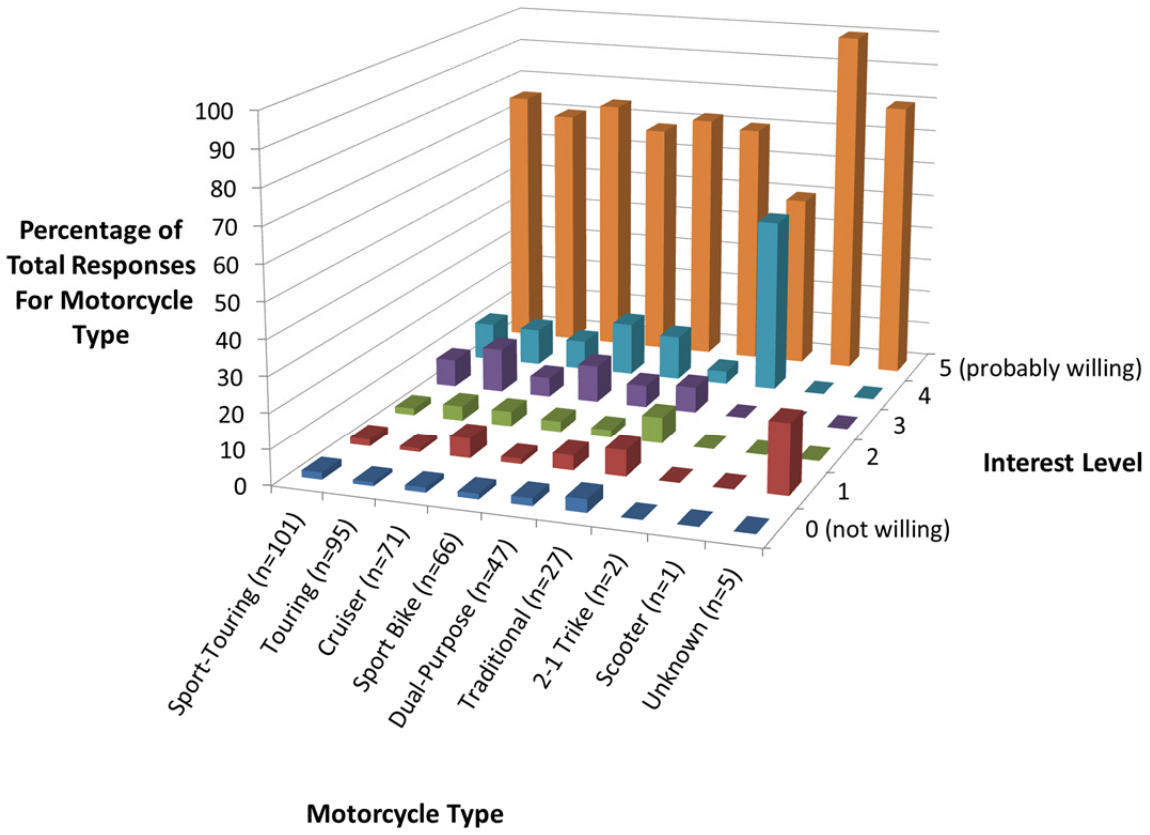

Figure 7. Graph. Percentage of total respondents per motorcycle type for each level of interest in study participation.

Interest and Motorcycle Year

Figure 8 depicts the relationship between interest in study participation and the respondent's primary motorcycle's year of manufacture. The observation that the majority of riders in each category responded with the highest level of interest is evident once again. Although riders of all eras of motorcycles expressed similar levels of interest, those who rode the newer motorcycles

tended a bit more toward being interested in study participation (especially those owning motorcycles manufactured in the 1990s and the newest category, 2005-2009).

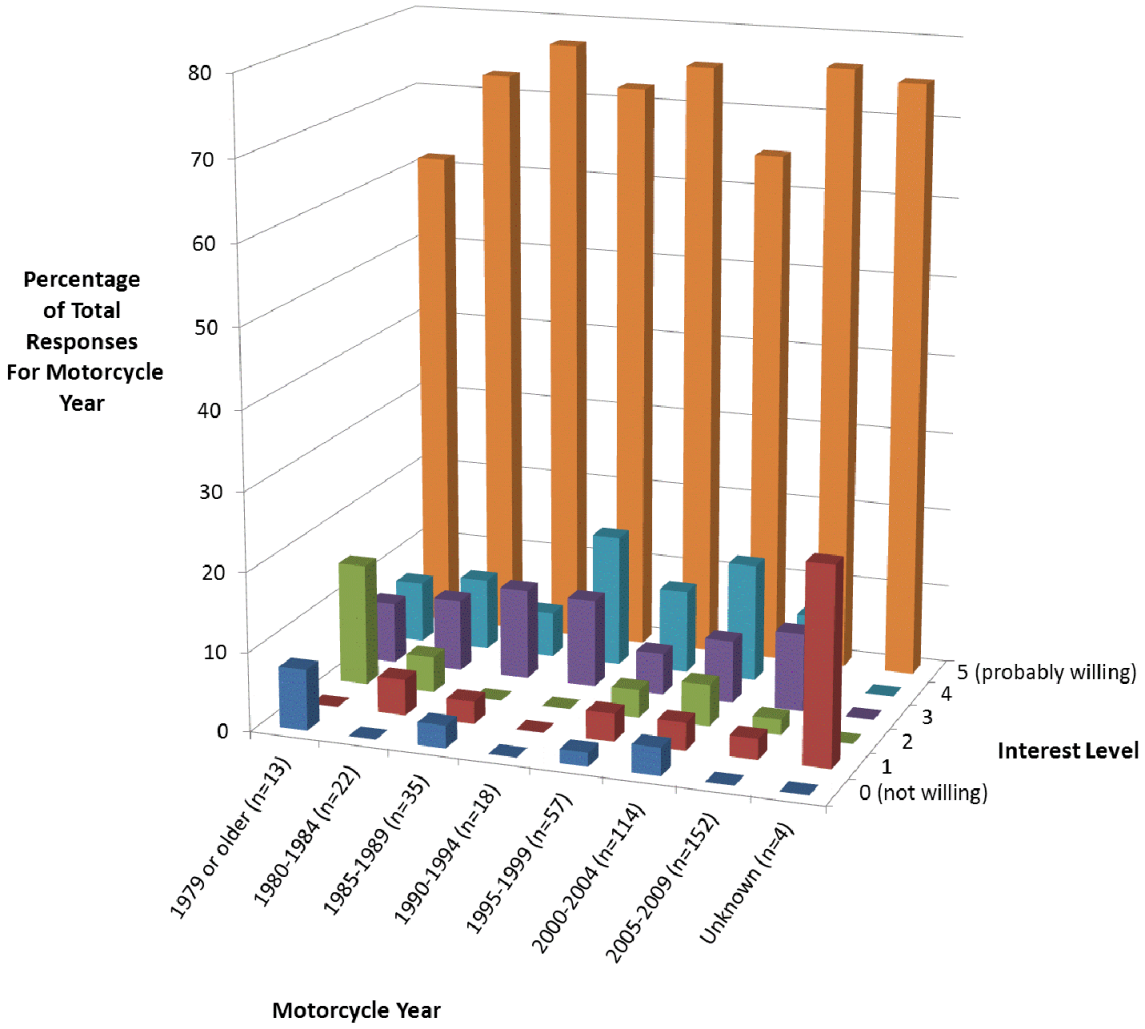

Figure 8. Graph. Percentage of total respondents per motorcycle year for each level of interest in study participation.

Interest and Motorcycle Make

Figure 9 depicts the relationship between interest in study participation and the make of the respondent's primary motorcycle. As with every category, the majority of riders in each group responded with the highest level of interest. In general, responses of every group tended to be more toward the "probably willing" end of the scale. Responses for motorcycle makes with fewer than 10 respondents were not necessarily representative of owners of these makes, and thus were collapsed into one category, called "Other."

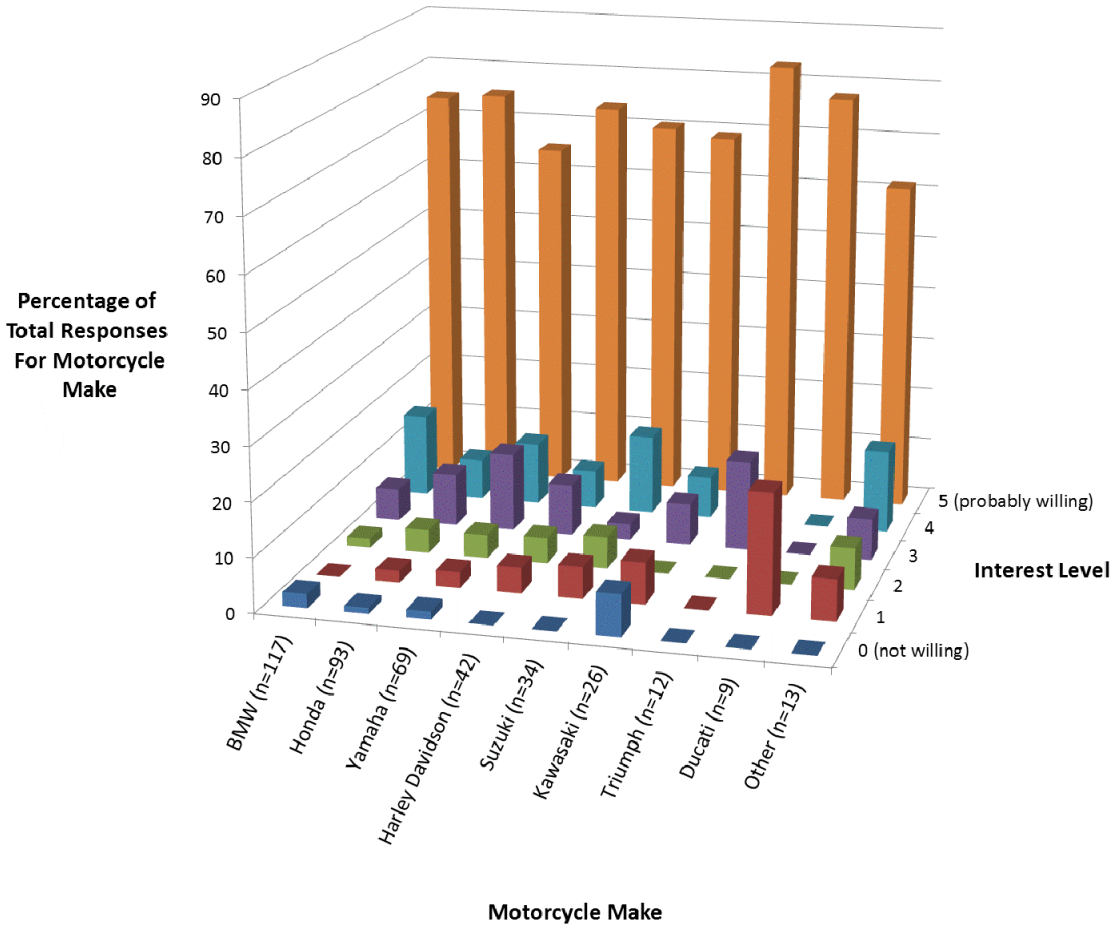

Figure 9. Graph. Percentage of total respondents per motorcycle make for each level of interest in study participation.

Further Information Related to Interest Levels

An open-ended question included in the survey (results not included in Appendix A) states "Please list any reasons why you would not be interested in this type of study." Figure 10 presents the general results of this question. Results are grouped by the reported level of interest ("What is your level of interest in participating in an on-road study exploring motorcycle riding behaviors and rider performance?"), from 0= "Wouldn't do it under any circumstance" to 5= "I would probably be willing." The open-ended answers are categorized into five reasons, listed below, with representative sentiments within each category.

- Too Much Trouble
  - Adds stress, inconvenience, distraction
  - Enjoy freedom and stress release of riding, don't want to take that away
  - Too busy to be involved
- Privacy
  - Invasion of privacy
  - Worried about the effect on insurance rates, effect of an accident

    - Don't want to contribute toward increased legislation
    - Concerned about legal exposure
- Unsuitable Circumstances
    - I am a novice rider/don't ride enough
    - Cameras might not be allowed at my workplace
    - I wouldn't drive "normally" if part of a study
    - I ride multiple bikes, so wouldn't be representative
- Equipment
    - Appearance (don't want to alter the looks of me or my bike)
    - Concern about damage to my bike/equipment
    - Desire to use my own helmet, helmet must be safe, comfortable, clean
    - Modifications must be safe
- Not Enough Information
    - Can't give response until receive more information about the study

Respondents who were the least interested in study participation (levels 0 and 1) tended to be protective of their privacy (e.g., did not wish to be monitored) and did not want to make the effort to participate (many enjoyed the freedom and stress release that comes from riding, and did not wish to jeopardize these advantages). Some of those who were unwilling also felt (perhaps erroneously) that their circumstances made them unsuitable participants (e.g., not much riding experience). In the case of respondents with a "mid-level" of willingness (levels 2 and 3), responses were distributed fairly evenly between the choices. The respondents with high willingness ratings (levels 4 and 5) indicated that they were also concerned with privacy issues and the effort required to participate, but were especially worried about the associated equipment. A substantial percentage of the responses for those who stated that they would be willing to participate (level=5) were related to the instrumentation of helmets. Concerns about the fit, comfort, and/or looks of a provided helmet (including insurance that it is SNELL/DOT approved, and new or sanitized), or the desire to use one's own helmet, were mentioned in 57% of the responses for those who would probably be willing to participate in a study.

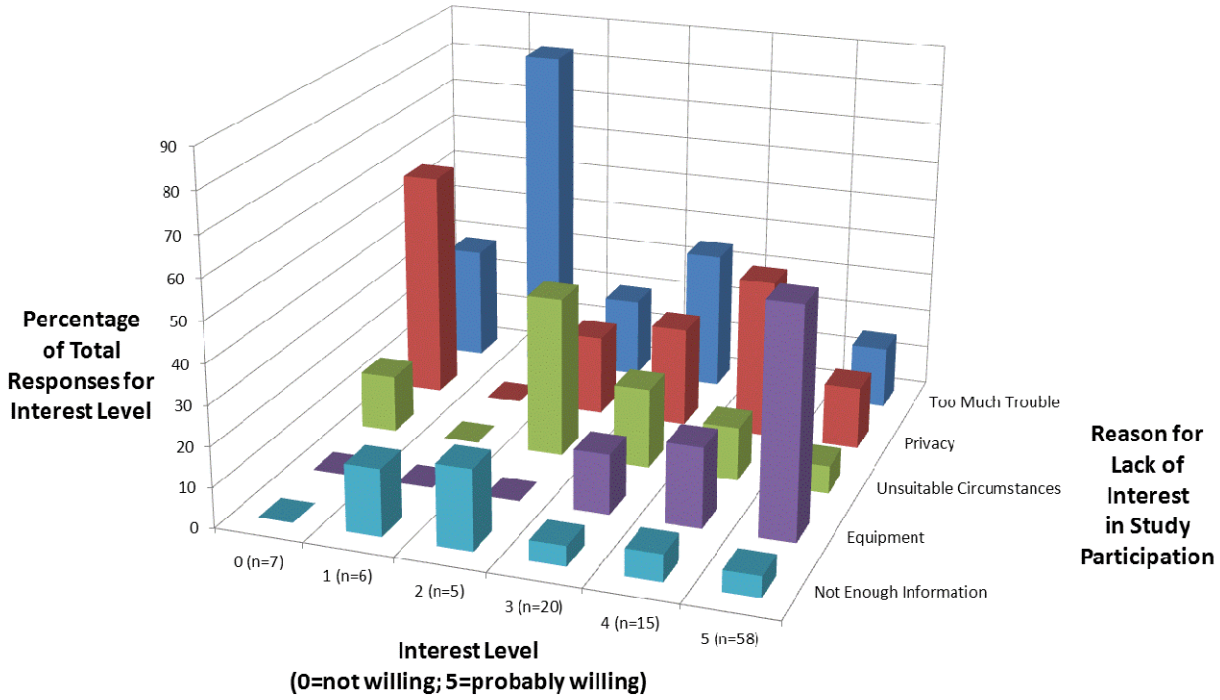

Figure 10. Graph. Percentage of total respondents per interest level for each reason for lack of interest in study participation.

Table 11 presents the answers to another open-ended question related to study participation. The question asks "If some other compensation or accommodations would be required, what would they be?" Note that the results of a question concerning monetary payment ("What pay would be acceptable per month to attain your participation in research in which small data acquisition hardware was mounted on your motorcycle for one riding season?") is included in Appendix A. The responses indicated in Table 11 provide suggestions for compensation not limited to cash. Clearly, accessories and gear were the most desirable method of compensation according to those who provided input on this subject.

Table 11. Preferred compensation for study participation.

Compensation	Number of Responses
Accessories/gear	37
Damage compensation	19
Keep helmet/equipment	19
Mileage reimbursement	16
Data access (mine)	15
Tires	15
Maintenance	11
Clothing	5
Motel	5
Pay expenses/compensate inconvenience	5
Training	5

Compensation	Number of Responses
Insurance	3
Access to final report	3
Safety gear	3
Brake replacement	2
Meals	2
Money	2
Patch/sticker	2
Approval/recognition from police	2
Study involvement (input)	2
Tickets to motorcycle-related events	2
New motorcycle	1
Camping equipment	1
Tax deduction	1

Respondent Grouping

In order to discover groupings of motorcycle riders who were similar in their answers to survey questions, a cluster analysis was performed on the survey data. The goal was to form respondent groups with similar responses to questions, then develop group descriptions to better understand motorcycle rider characteristics. Such descriptors will be useful in research development and design to accommodate specific user groups.

The first step was to conduct a "Distance Procedure" to compute measures of dissimilarity between observations as the input to the "Cluster Analysis Procedure." To help avoid dependence on the choice of measurement units, the data were standardized. Standardizing measurements attempts to give all variables an equal weight (mean=0 and variance=1). This is particularly useful when given no prior knowledge of the data. Because the survey consisted of 90 questions, with certain topics addressed with multiple questions, only select variables of interest were used in the cluster analysis. The analyses included the following variables:

- Demographics
  - Gender
  - Age Category
- Experience
  - Number of Rides for "Purpose" (work, errand, etc.)
  - Number of Rides for Pleasure
  - Annual Mileage Riding Primary Motorcycle
  - Number of Different Street Motorcycles Ridden in Previous Year
- Interest
  - Level of Interest in Participating in On-Road Study
  - Willingness to Allow Installation of Sensors and Cameras on Motorcycle

The graphic results (dendrograms) of the cluster analysis are presented in Figures 11 and 12. The observation labels (y-axis), or identification codes for each respondent, are illegible due to the

large number of observations. However, the dendrogram provides a guideline for selecting the number of clusters to consider. According to Rencher, the selection of clusters may be made by selecting the point at which a large distance occurs between cluster formations, while maintaining the highest value of r-squared for that number of clusters.[9] In each graph, the dashed red line indicates the point at which the clusters are chosen, resulting in eight clusters.

Table 12, immediately following Figures 11 and 12, includes the response tallies for some of the questions of interest (used in the cluster analysis) for each of the resulting eight clusters (called Clusters A, B, C, D, E, F, G, and H). Note that Clusters D, E, F, G, and H include small numbers of members, each of homogeneous gender: 24 males in Cluster D, 5 males in E, 2 males in F, 2 females in G, and 1 female in H. Within each of the remaining three clusters (A, B, and C), 92% – 96% of the respondents are male. Thus, it seems that gender is not a factor that contributes to the definition of the three larger clusters (the percentage of each gender within each cluster is similar to the percentage of the overall surveyed population: 93% male and 7% female). Figures 13, 14, and 15 include graphical representations of the remaining questions of interest in the Cluster Analysis.

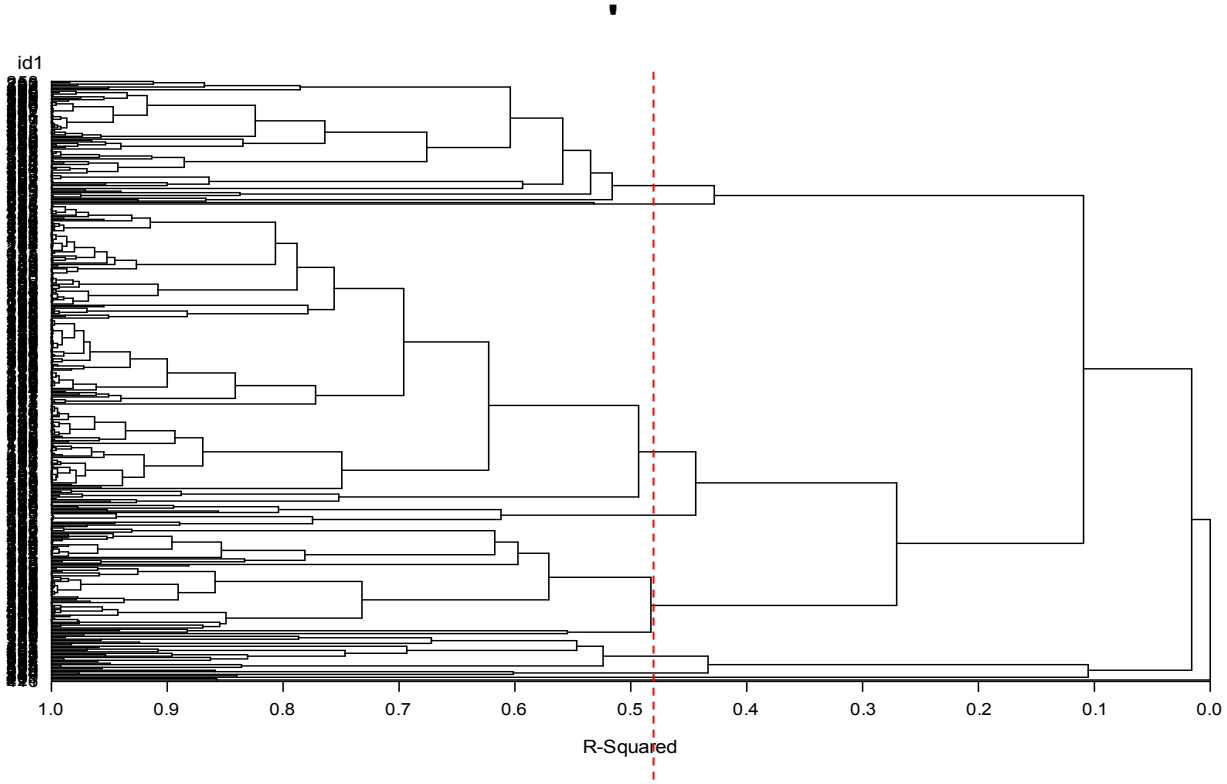

Figure 11. Graph. Cluster analysis for motorcycle survey, selected variables (R-Squared on the horizontal axis).

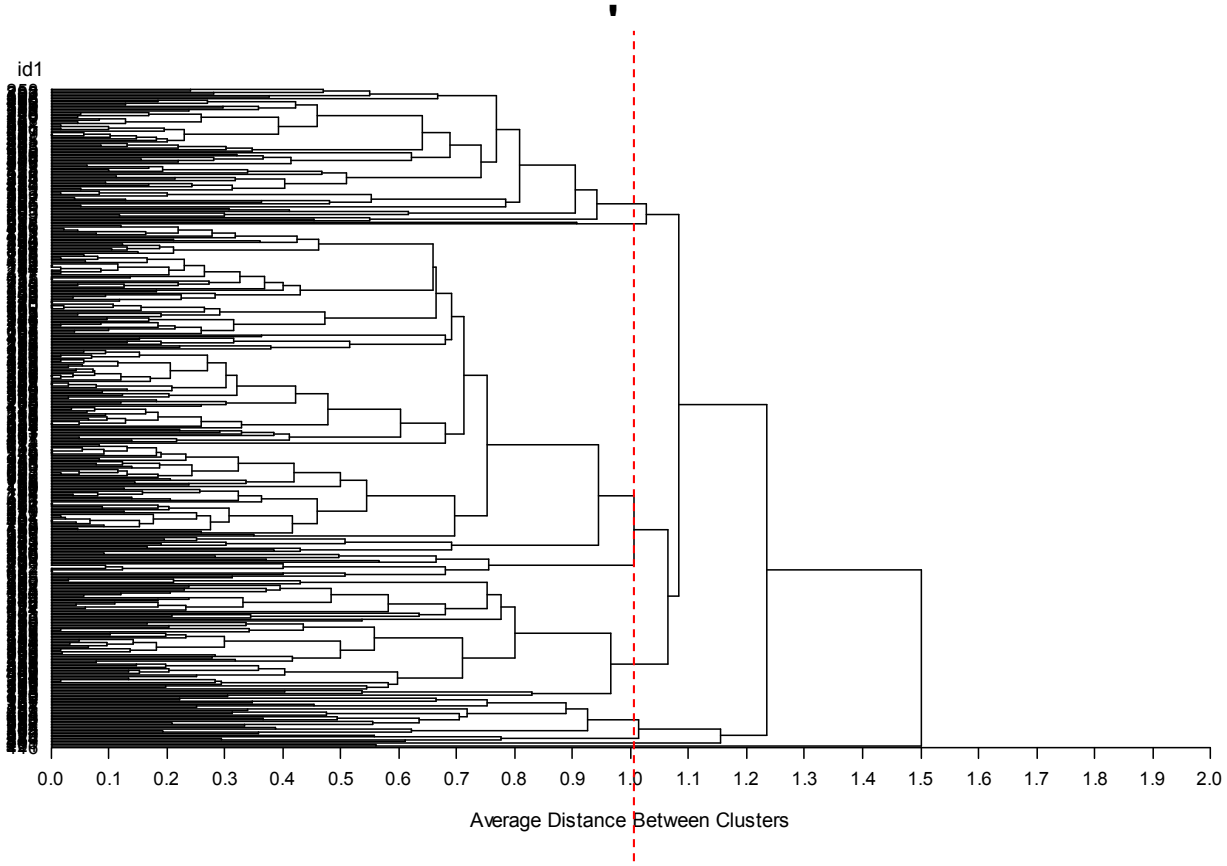

Figure 12. Graph. Cluster analysis for motorcycle survey, selected variables (distance between clusters on the horizontal axis).

Table 12. Cluster response averages.

Question	Cluster A (n=227)	Cluster B (n=86)	Cluster C (n=77)	Cluster D (n=24)	Cluster E (n=5)	Cluster F (n=2)	Cluster G (n=2)	Cluster H (n=1)
Average respondent age	50	31	64	46	57	29	37	56
Male/female ratio (percentages)	93/7	92/8	96/4	100/0	100/0	100/0	0/100	0/100
Approximately how many miles did you ride this motorcycle on-road in the last 12 months?	7942	5639	8082	2696	2600	5500	1550	150
How many different STREET motorcycles have you ridden regularly in the last 12 months?	2	2	3	1	3	4	1	1
What is your level of interest in participating in an on-road study exploring motorcycle riding behaviors and rider performance? (from "0=wouldn't do it under any circumstances" to "5=would probably be willing")	5	5	5	2	2	2	1	1
What is your willingness to let a research institute temporarily install small sensors and cameras on your motorcycle for a period of time (e.g., weeks or months)? (from "0=wouldn't do it under any circumstances" to "5=would probably be willing")	4	4	4	1	2	3	3	1

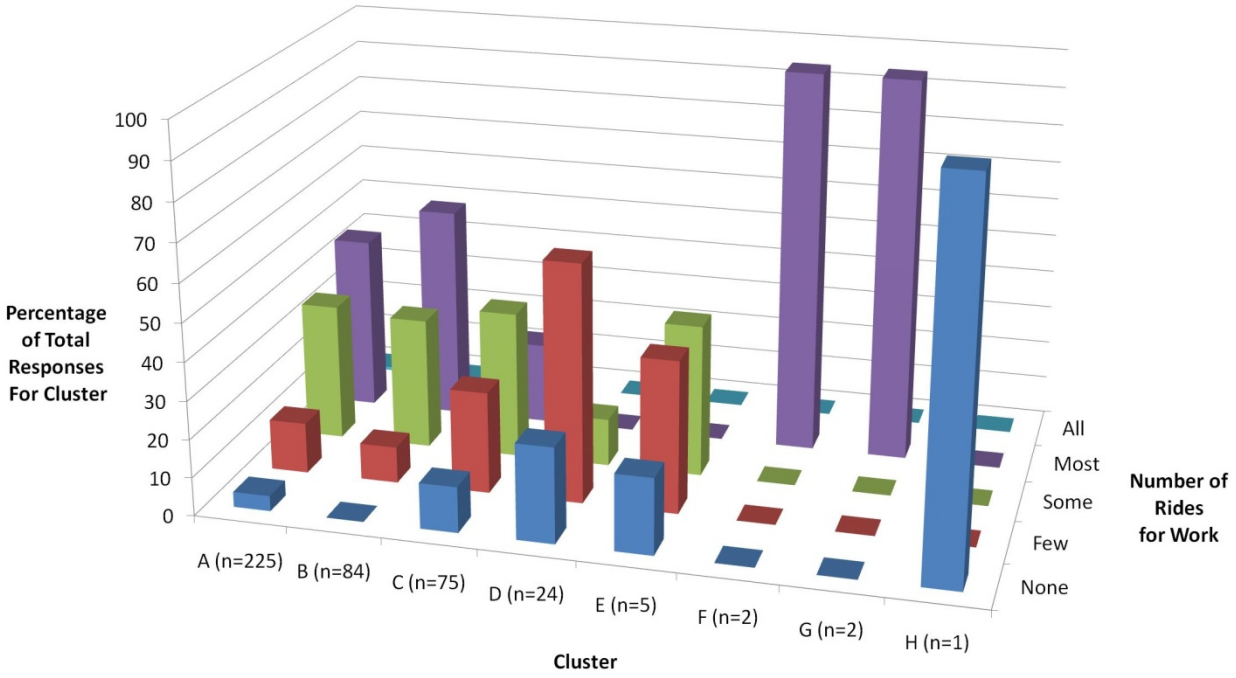

Figure 13. Graph. Percentage of total respondents per cluster for each category of number of rides for work.

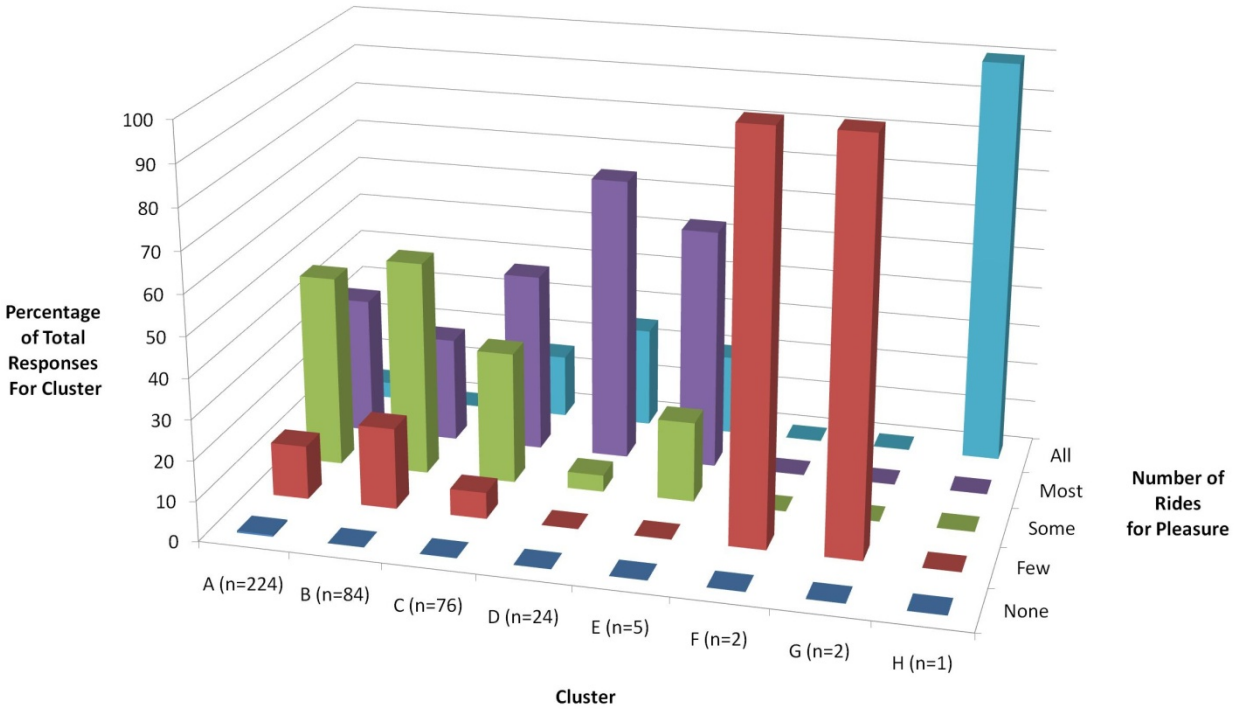

Figure 14. Graph. Percentage of total respondents per cluster for each category of number of rides for pleasure.

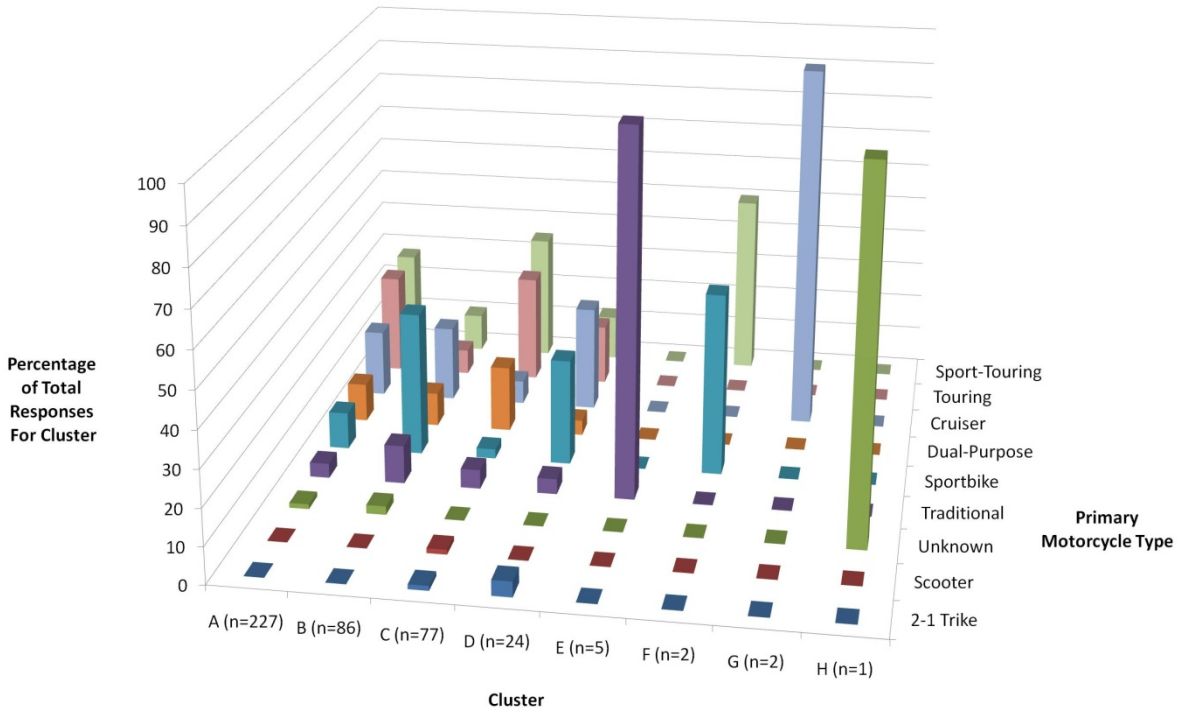

Figure 15. Graph. Percentage of total respondents per cluster for each category of primary motorcycle type.

Based on Table 12 and Figures 13-15, the following generalizations may be made about each cluster.

A. Cluster A

- Over 50% of all respondents (227 members)
- Middle-aged (average = 50 years old)
- 93% males, 7% females
- One of the highest number of average miles ridden last year (average = 7,942)
- Tended to ride more than one street motorcycle the previous year (average = 2)
- High willingness to participate in study and to allow sensor/camera installation on motorcycle (average ratings of 5 and 4, respectively)
- One of the highest reported relative percentages of rides for work, compared to other clusters (except Clusters F and G, with only 2 members each)

- Also reported a fairly high relative percentage of rides for pleasure, indicating that many members rode often for pleasure as well as work

- Most common types of motorcycles were sport-touring and touring, with a fair percentage of cruisers

B. Cluster B

- 20% of all respondents (86 members)

- One of the youngest groups (average = 31 years old)

- 92% males, 8% females

- Medium relative number of average miles ridden last year (average = 5,639)

- Tended to ride more than one street motorcycle previous year (average = 2)

- High willingness to participate in study and to allow sensor/camera installation on motorcycle (average ratings of 5 and 4, respectively)

- Highest reported relative percentage of rides for work, compared to other clusters (except Clusters F and G, with only 2 members each)

- One of the lower relative percentages of rides for pleasure (except Clusters F and G, with only 2 members each)

- Most common types of motorcycles were sport bike (highest percentage) and cruiser

C. Cluster C

- 18% of all respondents (77 members)

- Oldest group (average = 64 years old)

- 96% males, 4% females

- Highest number of average miles ridden last year (average = 8,082)

- Tended to ride multiple street motorcycles the previous year (average = 3)

- High willingness to participate in study and to allow sensor/camera installation on motorcycle (average ratings of 5 and 4, respectively)

- Medium relative percentage of rides related to work (tending toward lower percentages)—about 20% of these respondents rode mostly for commuting, the remainder rode some or never for work-related purposes

- Higher percentage of rides for pleasure than for work (of the larger clusters, this one had the highest percentage of rides for pleasure)

- Most common types of motorcycles were sport-touring (highest percentage), touring, and dual-purpose

D. Cluster D

- 6% of all respondents (24 members)

- Middle-aged (average = 46 years old)

- 100% males

- One of the lowest numbers of average miles ridden last year (average = 2,696)

- Rode the fewest different street motorcycles over the past year (average = 1)

- Lowest willingness to participate in study and to allow sensor/camera installation on motorcycle (average ratings of 2 and 1, respectively) (except for clusters with 1 or 2 members)

- Lowest relative percentage of rides for work (compared to other clusters with more than 5 members)

- Highest percentage of rides for pleasure (compared to other clusters with more than 5 members)

- Most common types of motorcycle were sport bikes and cruisers

E. Cluster E

- 1% of all respondents (5 members)

- Older (average = 57 years old)

- 100% males

- One of the lowest numbers of average miles ridden last year (average = 2,600)

- Tended to ride multiple street motorcycles the previous year (average = 3)

- Low willingness to participate in study and to allow sensor/camera installation on motorcycle (average rating of 2 for each category)
- Low percentage of rides for work
- More rides for pleasure
- All 5 members rode traditional-type motorcycles

F. Cluster F

- Only 0.5% of all respondents (2 members)
- Appears to be the youngest group, but only one member provided age (29 years)
- 100% males
- Medium number of average miles ridden last year (average = 5,500)
- Rode the most different street motorcycles over the past year (average = 4, one member rode 2 and other member rode 6)
- Lowest to no willingness to participate in study (one rating = 3, one rating = 0) and medium willingness to allow sensor/camera installation on motorcycle (both ratings = 3)
- Both respondents rode mostly for work
- Both respondents rode few rides for pleasure
- One member rode a sport-touring and the other rode a sport bike as the primary motorcycle

G. Cluster G

- Only 0.5% of all respondents (2 members)
- Average age 37 years old, but one member was 18 and the other was 56
- 100% females
- Lowest number of average miles ridden last year (average = 1,550) (except Cluster H, with only 1 member)
- Both members rode only 1 street motorcycle over the past year

- Lowest average willingness to participate in study (neither member is interested, ratings of 0 and 1) and medium willingness to allow sensor/camera installation on motorcycle (both ratings = 3)
- Both respondents rode mostly for work
- Both respondents rode few rides for pleasure
- Both members rode a cruiser

H. Cluster H

- Only 0.2% of all respondents (1 member)
- Middle-aged (48 years old)
- 100% females
- Lowest average miles ridden last year (150)
- Rode 1 street motorcycle previous year
- Lowest willingness to participate in study and to allow sensor/camera installation on motorcycle (both ratings = 1)
- No rides for work
- All rides for pleasure
- Motorcycle type was unknown

It is interesting to note that the two clusters with the highest reported annual motorcycle mileage are composed of mainly males, middle-aged (Cluster A) or older (Cluster C), who rode more than one motorcycle (mainly sport-touring or touring), with high willingness to participate in an on-road study and to have the associated sensors and equipment installed on their bikes. The members of one group (Cluster A) rode both for work and for pleasure, while the members of the other group (Cluster C, the older group) rode mostly for pleasure. The other group with the highest willingness for study participation is a younger, mostly male group (Cluster B), which reported a "medium" number of annual miles while riding multiple bikes (typically sport bikes), both for work and pleasure. These characteristics describe the riders who should be fairly easy to recruit for an on-road study. Of course, riders who are willing to participate in an on-road study may also be more willing to complete online surveys, so there could be differences from the general population created by the survey or recruiting method used here.

The remaining clusters are the types of riders who would be the most difficult to recruit for an on-road study, according to their reported willingness levels. Four of these groups rode a low number of annual miles, and the fifth group reported a medium mileage level. Note that the

largest group (Cluster D) consists of 24 males only, and the other clusters include even smaller numbers of single-gender members (Cluster E with 5 males, Cluster F with 2 males, Cluster G with 2 females, and Cluster H with 1 female). The members of Cluster D reported one of the lowest willingness levels in the survey—they are middle-aged males who rode cruisers and sport bikes, mostly for pleasure. The other low-willingness groups are so small that detailed inferences about riders with these traits may be imprudent.

The clearest conclusion about the difference between these low-willingness groups compared to the respondent groups who reported higher likelihood of participating in on-road motorcycle studies (other than willingness levels, of course) is their low mileage on motorcycles (relative to the high-willingness group mileage). The overall average annual mileage on motorcycles for those respondents who were hesitant to participate in a study (Clusters D, E, F, G, and H) is 3,806, compared to 9,213 annual miles for the respondent groups more likely to participate (Clusters A, B, and C). When combined, cluster groups D-H rode more for pleasure than work (the A-C groups rode for work as well as pleasure). Although other differences are not as pronounced, the low-willingness riders tended to drive a bit more in cars than did the high-willingness groups, their motorcycles were generally slightly older, and half of them rode cruisers and sport bikes (whereas half of the willing group members rode sport-touring and touring motorcycles). Both groups are very similar in other traits such as age, licensure age, and number of motorcycles owned and ridden.

Although 19 out of 34 of the "low-willingness" respondents gave no answer to the survey item "Please list any reasons why you would not be interested in this type of study," it is useful to examine the reasons listed by the other 15 respondents, separated by individual cluster group. The largest of these groups, Cluster D, consists of middle-aged men who did not ride much but, when they did, rode for pleasure on sport bikes or cruisers. Nine out of the group of 24 males provided reasons for their hesitation to participate in a study: three of these felt that they didn't ride often enough (these respondents rode 100, 700, and 1,000 miles the previous year), three others were concerned about an invasion of privacy, one felt that he might be distracted from his driving (although seeing the equipment might change his mind), one was concerned about study results being manipulated and used to increase legislation, monitoring, etc., and the final member of this group just did not wish to be involved, but with more information might be willing to be involved in parts of the study. Of the five Cluster E members – typically older males who rode multiple traditional-type motorcycles for pleasure (but low mileage) – two supplied reasons for lack of interest in study participation. One reason was the hesitation to add anything to his bike which was recently stripped down. The other rider (the youngest of this group) did not want to bother with any additional instrumentation or riding requirements. One of the two males in Cluster F (both rode multiple motorcycles primarily of the sport bike and sport-touring type, medium mileage, and mostly for work) stated that riding served as stress-release, which would be diminished by being analyzed. Both females in Cluster G (one older and one younger) rode only one bike (cruiser) mostly to work, riding few miles. One of these riders stated that she would be nervous to be monitored, and the other was concerned about her novice state and the effect on insurance if she had an accident. The sole member of Cluster H (a middle-aged female, riding one motorcycle of unknown type, few miles for pleasure) ran a business and had little free time to bother with study involvement.

CHAPTER 4. CONCLUSIONS AND SUGGESTED RESEARCH

The survey results described in this study detail some of the similarities and differences between motorcycle riders with respect to how much they ride, how they use their motorcycle, where they ride, and their willingness to participate in studies that include instrumentation of their personal motorcycles. A general description of the respondents included in this survey is as follows. They voluntarily completed the survey, primarily using an Internet-based form. Although many of these respondents rode mainly in Virginia (20%), riders in nearly all of the other states were represented as well. Respondents tended to be middle-aged, trained, experienced riders who rode 100 or more days per year (averaging less than 10,000 miles of riding annually). There was a wide range of habits for these riders but, in general, the respondents rode their motorcycles for work commuting as well as for pleasure (and logged 4/5th as many miles as they did in cars), with rather extensive riding seasons (averaging 10 months out of the year). Riders maintained their bikes and wore appropriate protective gear. Their motorcycles were less than 10 years old, and half of them were manufactured by BMW or Honda. Most of the respondents had not been involved in multiple crashes on their bikes.

Some observations about possible bias in the data must be made before discussing research-related implications. For the most part, the survey respondents resided or rode heavily in Virginia, were fairly experienced riders, and leaned toward riding BMW and Honda motorcycles. This is not representative of the national population, and could likely be a result of the method of survey distribution (e.g., largely through societies such as the MSF via an online tool as well as local recruitment). There was also high willingness among survey respondents to participate in on-road motorcycle research studies. Again, the method of recruitment and the fact that respondents voluntarily completed the survey would likely lead to collection of data from individuals predisposed to getting involved in motorcycle-related research. Even with these caveats in mind, and the realization that conclusions from this study are not necessarily indicative of nationwide motorcyclist trends and traits, results of this survey still provide new insight into motorcycle-related research and create a basis for beginning such work.

A number of findings are informative for researchers. Typical respondent concerns and preferences about compensation should be addressed before an on-road study begins. The most common response to the survey's question regarding acceptable compensation for data collection over a riding season was that no payment would be required. The next most frequent answer was $100/month. These findings suggest a compensation plan that would be the most likely to please the majority of probable participants. Results of the question related to other types of acceptable compensation also aid the design of future studies—accessories and gear were the most desirable compensation by far. Riders were also concerned about possible damage to their motorcycle, and would have liked the opportunity to keep the specialized helmet and equipment. Prior knowledge of such concerns serves to improve the ability of researchers to design their research to deal with likely difficulties and participant attitudes before the study even begins.

Responses to the survey items relevant to instrumentation and data collection (e.g., respondent motorcycle storage, access to electricity and the Internet, motorcycle accessories) will also be useful in customizing research design and implementation to a particular participant group. In terms of whether conditions were conducive to study participation, the at-home conditions were suitable (well over 80% of respondents stored their motorcycle in a garage or the house, and had

electrical and Internet access available for the bike), but conditions at work tended to be less ideal (bikes were parked mainly in ground-level parking lots and over 90% were left uncovered). The motorcycles themselves tended to be fairly well-accessorized (especially with windshields and luggage carriers or saddlebags). About three quarters of the total respondents used luggage carriers or saddle bags—if specific motorcycle types are considered, a higher percentage of those with touring or sport-touring bikes (96% and 89%, respectively) utilized these accessories. Thus, any modification or utilization of these accessories would affect a large percentage of these riders (who comprised nearly half of the survey population). The possibility of inconveniencing these riders, or even losing them as potential study participants, is something to consider. Riders tended not to use communication devices such as bike-to-bike radios or cell phones while driving (70% used no inter-bike radio systems and 88% did not use cell phones while riding). Most respondents rode more than one motorcycle throughout the year (averaging 2.4 motorcycles for the entire sample). This creates the need to consider data loss if just one motorcycle is to be instrumented for an on-road study. Of the respondents who rode multiple bikes (and who owned multiple bikes), 26% of them amassed 50% or less of their overall annual mileage on the primary motorcycle. About one fourth of the respondents rode 51-75% of their total mileage on the primary bike, and half rode more than 75% of total mileage on the primary bike. Thus, unless multiple motorcycles are instrumented or the instrumentation is mobile, some mileage data would be lost for those who rode multiple bikes throughout the year.

The overall expressed interest in study participation seemed to be high regardless of factors such as age, training level, experience (years and mileage), or motorcycle type/make/year. Those who were the most hesitant to participate in an on-road study were concerned about privacy issues (invasion of privacy, as well as the effect on their insurance and motorcycle legislation) and the inconvenience and disruption that could occur as a result of their participation (e.g., they didn't want their riding habits to be altered or to worry about any resulting distractions). Riders who fell in the middle of the "willingness" scale (where 0="not willing" and 5="probably willing") were largely concerned about privacy and inconvenience issues, but also worried that their personal situation would preclude them from being a suitable participant (they were novice or infrequent riders, or rode multiple bikes). Respondents who were the most willing to participate were also concerned about privacy and inconvenience, but the possibility of damage or altered appearance resulting from bike modifications and instrumentation – especially helmet modifications or replacement – would be the most likely factors to decrease their interest in participation. Specifically, many of these respondents (those indicating that they were "probably willing" to participate in a study) would be very particular about the required helmet; e.g., whether it meets DOT/SNELL guidelines, whether it would be comfortable, and whether it would create any type of safety hazard. Regardless of the interest level of potential participants, concerns about privacy and inconvenience should be addressed. Which of the other concerns will affect study participation for a given individual depends on the initial stated interest level of that rider.

Information about specific subgroups of the survey respondents related to on-road study participation willingness is summarized in Table 13 below. Note that the annual mileage is reported as a categorization relative to mean values for other clusters. The annual mileage values categorized here as "low" are less than 3,000 miles, "medium" includes mileage between 3,000 and 7,000, and "high" encompasses values higher than 7,000 miles. Note also that, for the

attribute "more rides for work or pleasure," even if one type of riding was more popular (e.g., for pleasure), some of the cluster's members could have indicated that they actually rode more for the opposite purpose (e.g., for work). The categorizations for this attribute merely reflect what most of the cluster's members indicated. If the category is "both," a fairly equal number of members indicated that they rode mostly for work as the number who responded that they rode mostly for pleasure. The entries for "type of motorcycle" include the most prominent type(s) of motorcycles that the cluster members typically rode. For most clusters, other types were mentioned, but the table below displays the most common motorcycles for each cluster.

Table 13. Cluster summary.

Attribute	Cluster A (n=227)	Cluster B (n=86)	Cluster C (n=77)	Cluster D (n=24)	Cluster E (n=5)	Cluster F (n=2)	Cluster G (n=2)	Cluster H (n=1)
Average respondent age	50	31	64	46	57	29	37	56
Male/female ratio (%)	93/7	92/8	96/4	100/0	100/0	100/0	0/100	0/100
Annual mileage (relative)	High	Medium	High	Low	Low	Medium	Low	Low
Motorcycles ride regularly	2	2	3	1	3	4	1	1
Study participation willingness	5	5	5	2	2	2	1	1
Sensor/ equipment installation willingness	4	4	4	1	2	3	3	1
More rides for work or pleasure	Both	Both	Pleasure	Pleasure	Pleasure	Work	Work	Pleasure
Type of motorcycle	Sport-Touring/ Touring	Sport bike	Sport-Touring/ Touring	Cruiser/ Sport bike	Traditional	Sport-Touring/ Sport bike	Cruiser	Unknown

There is a group of riders who were high mileage (average of 7,942/year), middle-aged, mostly male, and appeared to be readily willing to participate. This group consists of over half of the survey respondents. They tended to ride their motorcycles to and from work, but also rode quite often for pleasure. The majority of this group rode touring or sport-touring motorcycles, with the next most common type being the cruiser. Many rode more than one motorcycle throughout the year. There are two other groups who also reported high willingness to participate in an on-road study. One group was medium mileage (average of 5,639/year), relatively young (average of 30 years old), mostly male, and rode mostly for work. The most common motorcycle was the sport

bike, with cruisers the next most common. This group rode more than one motorcycle throughout the year. The final group with high participation willingness was the highest mileage (average of 8,082/year), and was also the oldest group (average of 64 years old). Again, the group was mostly male, some members rode to and from work, but the majority rode mostly for pleasure. The most common type of motorcycle was the sport-touring, with touring and dual-purpose the next most popular. Based on these results, motorcyclists with these traits (in combinations common to one of these three groups) would likely be easily recruited for on-road motorcycle research. The largest group of the more challenging riders to recruit appear to be middle-aged males (average of 46 years old), who were very low mileage (average of 2,696/year). They rode for pleasure, rode mostly sport bikes and cruisers, and only rode one motorcycle per year. There are four other groups who also reported very low participation willingness and rode low to medium mileage annually on motorcycles. Each group was 1% or less of the overall survey population.

When on-road studies are being designed and executed, if a particular target group is desired, these results could be used to inform designers on how to successfully recruit these groups. This study suggests, for example, that those less willing to participate are more concerned with invasion of privacy and the potential loss of freedom while riding. They are also unconvinced that they are suitable candidates for a study because they are novice or low-mileage riders. The riders who would be the most difficult to recruit for an on-road motorcycle study (Clusters D, E, F, G, and H) share the trait of riding low to medium annual mileage. The age, gender, number and type of motorcycles, and riding purpose vary between these groups. Some of these respondents provided comments that suggest possible ways to increase the willingness levels of these groups. In general, emphasis on the fact that low-mileage riders are desirable study participants and a full explanation of study methods (especially related to minimal interference with the riding task and privacy) are essential components of recruiting these groups.

While the percentages of willing and unwilling respondents to this survey may differ from the percentages that will be found in the full rider population, the breadth of answers and the characteristics of the clusters serve to direct the design of on-road studies and also provide probable areas of concern and misinformation that can be anticipated and addressed before the study even begins. For future surveys, a focus on collecting more data from riders, especially those with the traits of the groups with the fewest members (Clusters D, E, F, G, and H), would be advantageous in order to verify the descriptions of these groups. In addition, any groups that do not seem to be represented, if they exist in substantial numbers (e.g., females who ride traditional motorcycles), could be focused upon for data collection. If funding is limited, certain clusters could be focused upon in order to obtain more complete data on a particular type of rider.

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APPENDIX A. COMPLETE SURVEY RESULTS

Frequency All Data

The FREQ Procedure

Survey group	Frequency	Percent
v1	56	13.21
v2	355	83.73
v3	13	3.07

gender	Frequency	Percent
Female	29	6.84
Male	395	93.16

age	Frequency	Percent
17	1	0.24
18	1	0.24
19	1	0.24
20	2	0.48
21	1	0.24
22	6	1.43
23	2	0.48
24	3	0.72
25	4	0.95
26	2	0.48
27	5	1.19
28	4	0.95
29	9	2.15
30	6	1.43
31	4	0.95
32	2	0.48
33	4	0.95
34	5	1.19
35	7	1.67
36	5	1.19
37	8	1.91
38	4	0.95
39	7	1.67
40	14	3.34
41	8	1.91

42	8	1.91
43	4	0.95
44	12	2.86
45	12	2.86
46	13	3.1
47	18	4.3
48	9	2.15
49	19	4.53
50	12	2.86
51	17	4.06
52	15	3.58
53	9	2.15
54	12	2.86
55	22	5.25
56	11	2.63
57	11	2.63
58	12	2.86
59	6	1.43
60	12	2.86
61	11	2.63
62	12	2.86
63	8	1.91
64	11	2.63
65	6	1.43
66	4	0.95
67	4	0.95
68	3	0.72
69	3	0.72
70	1	0.24
71	4	0.95
73	2	0.48
76	1	0.24

Frequency Missing = 5

Age category	Frequency	Percent
Less than 20	3	0.71
20-39	90	21.23
40-59	244	57.55
60 or older	82	19.34
Unknown	5	1.18

Do you have a valid motor vehicle driver's license?	Frequency	Percent
No	1	0.24
Yes	419	99.76

Frequency Missing = 4

Do you have a motorcycle operator’s license (NOT a permit)?	Frequency	Percent
No	14	3.33
Yes	407	96.67

Frequency Missing = 3

How old were you when you obtained your motorcycle license?	Frequency	Percent
13	1	0.24
14	5	1.2
15	9	2.16
16	74	17.75
17	15	3.6
18	39	9.35
19	27	6.47
20	17	4.08
21	19	4.56
22	22	5.28
23	12	2.88
24	15	3.6
25	20	4.8
26	9	2.16
27	13	3.12
28	7	1.68
29	4	0.96
30	8	1.92
31	4	0.96
32	4	0.96
33	9	2.16
34	2	0.48
35	4	0.96
36	8	1.92
37	2	0.48
38	7	1.68
39	5	1.2
40	10	2.4

41	3	0.72
42	4	0.96
43	3	0.72
44	1	0.24
45	4	0.96
46	1	0.24
47	3	0.72
48	4	0.96
49	1	0.24
50	6	1.44
51	1	0.24
52	1	0.24
53	2	0.48
54	1	0.24
55	1	0.24
58	1	0.24
59	1	0.24
61	4	0.96
63	2	0.48
64	1	0.24
68	1	0.24

Frequency Missing = 7

How old were you when you began riding STREET/ON-ROAD motorcycles?	Frequency	Percent
10	2	0.47
11	3	0.71
12	9	2.13
13	3	0.71
14	14	3.32
15	18	4.27
16	88	20.85
17	28	6.64
18	35	8.29
19	25	5.92
20	18	4.27
21	18	4.27
22	18	4.27
23	14	3.32
24	10	2.37
25	15	3.55

26	6	1.42
27	11	2.61
28	4	0.95
29	5	1.18
30	8	1.9
31	1	0.24
32	4	0.95
33	8	1.9
34	2	0.47
35	4	0.95
36	5	1.18
37	2	0.47
38	5	1.18
39	4	0.95
40	8	1.9
41	3	0.71
42	3	0.71
43	1	0.24
44	2	0.47
45	3	0.71
46	1	0.24
47	1	0.24
48	2	0.47
50	2	0.47
51	1	0.24
52	1	0.24
53	1	0.24
54	1	0.24
55	1	0.24
60	1	0.24
61	1	0.24
64	1	0.24
68	1	0.24

Frequency Missing = 2

How old were you when you began riding motorcycles OFF-ROAD?	Frequency	Percent
4	2	0.77
5	3	1.15
6	3	1.15
7	6	2.31

8	11	4.23
9	8	3.08
10	17	6.54
11	6	2.31
12	36	13.85
13	18	6.92
14	24	9.23
15	16	6.15
16	22	8.46
17	13	5
18	10	3.85
19	5	1.92
20	6	2.31
21	3	1.15
22	2	0.77
23	3	1.15
24	2	0.77
25	9	3.46
26	1	0.38
27	1	0.38
29	2	0.77
30	4	1.54
31	1	0.38
33	1	0.38
34	2	0.77
35	3	1.15
38	2	0.77
39	1	0.38
40	4	1.54
41	1	0.38
45	5	1.92
49	1	0.38
51	1	0.38
52	1	0.38
53	1	0.38
54	1	0.38
62	1	0.38
66	1	0.38

Frequency Missing = 164

Total number of years as a licensed rider	Frequency	Percent

0	3	0.73
1	21	5.1
2	19	4.61
3	15	3.64
4	15	3.64
5	15	3.64
6	4	0.97
7	10	2.43
8	7	1.7
9	6	1.46
10	5	1.21
11	6	1.46
12	8	1.94
13	5	1.21
14	7	1.7
15	10	2.43
16	3	0.73
17	5	1.21
18	4	0.97
19	4	0.97
20	5	1.21
21	13	3.16
22	3	0.73
23	7	1.7
24	9	2.18
25	7	1.7
26	7	1.7
27	4	0.97
28	9	2.18
29	10	2.43
30	10	2.43
31	6	1.46
32	11	2.67
33	10	2.43
34	11	2.67
35	16	3.88
36	8	1.94
37	9	2.18
38	14	3.4
39	13	3.16
40	8	1.94
41	10	2.43

42	8	1.94
43	6	1.46
44	7	1.7
45	3	0.73
46	5	1.21
47	1	0.24
48	3	0.73
49	2	0.49
51	2	0.49
53	1	0.24
54	1	0.24
55	1	0.24

Frequency Missing = 12

Category of number of years as licensed rider	Frequency	Percent
Less than 10	115	27.12
10-19	57	13.44
20-29	74	17.45
30-39	108	25.47
40-49	53	12.5
50 or more	5	1.18
Unknown	12	2.83

How many different STREET motorcycles have you ridden regularly in the last 12 months?	Frequency	Percent
0	3	0.71
1	155	36.73
2	138	32.7
3	55	13.03
4	31	7.35
5	19	4.5
6	6	1.42
7	5	1.18
8	3	0.71
10	5	1.18
15	1	0.24
20	1	0.24

Frequency Missing = 2

In what state do you ride most often?	Frequency	Percent

Alabama	4	0.95
Alberta, Canada	1	0.24
Arizona	9	2.13
Arkansas	1	0.24
California	29	6.86
Colorado	4	0.95
Connecticut	2	0.47
Delaware	2	0.47
Florida	12	2.84
Georgia	5	1.18
Hawaii	1	0.24
Idaho	1	0.24
Illinois	33	7.8
Indiana	1	0.24
Iowa	1	0.24
Kansas	2	0.47
Louisiana	1	0.24
Maine	1	0.24
Maryland	7	1.65
Massachusetts	8	1.89
Michigan	16	3.78
Minnesota	4	0.95
Mississippi	1	0.24
Missouri	6	1.42
NSW Australia	1	0.24
Nebraska	3	0.71
Nevada	1	0.24
New Hampshire	3	0.71
New Jersey	22	5.2
New Mexico	3	0.71
New York	20	4.73
North Carolina	20	4.73
Ohio	18	4.26
Oklahoma	2	0.47
Ontario, Canada	3	0.71
Oregon	8	1.89
Pennsylvania	24	5.67
Rhode Island	1	0.24
Romania	9	2.13
South Carolina	2	0.47
Tennessee	6	1.42
Texas	13	3.07

Utah	4	0.95
Virginia	85	20.09
Washington	14	3.31
West Virginia	2	0.47
Wisconsin	6	1.42
Wyoming	1	0.24

Frequency Missing = 1

How many motorcycles do you currently own or lease?	Frequency	Percent
0	3	0.71
1	191	45.15
2	113	26.71
3	38	8.98
4	20	4.73
5	16	3.78
6	11	2.6
7	8	1.89
8	3	0.71
9	1	0.24
10	3	0.71
12	3	0.71
13	4	0.95
14	1	0.24
16	1	0.24
17	1	0.24
20	3	0.71
25	1	0.24
33	1	0.24
55	1	0.24

Frequency Missing = 1

Bike 1 year	Frequency	Percent
1960	1	0.24
1962	1	0.24
1966	1	0.24
1969	2	0.48
1971	1	0.24
1973	1	0.24
1974	3	0.72
1975	1	0.24

1976	2	0.48
1978	1	0.24
1980	2	0.48
1981	5	1.19
1982	3	0.72
1983	8	1.91
1984	5	1.19
1985	13	3.1
1986	5	1.19
1987	5	1.19
1988	2	0.48
1989	10	2.39
1990	4	0.95
1991	3	0.72
1992	1	0.24
1993	9	2.15
1994	1	0.24
1995	10	2.39
1996	13	3.1
1997	10	2.39
1998	14	3.34
1999	10	2.39
2000	13	3.1
2001	19	4.53
2002	21	5.01
2003	24	5.73
2004	41	9.79
2005	25	5.97
2006	30	7.16
2007	44	10.5
2008	34	8.11
2009	21	5.01

Frequency Missing = 5

Category of year of primary motorcycle	Frequency	Percent
1979 or older	14	3.3
1980-1984	23	5.42
1985-1989	35	8.25
1990-1994	18	4.25
1995-1999	57	13.44
2000-2004	118	27.83

2005-2009	154	36.32
Unknown	5	1.18

Bike 1 make	Frequency	Percent
Aprilia	1	0.24
BMW	118	27.83
BSA	1	0.24
Buell	2	0.47
CanAm	1	0.24
Custom built	1	0.24
Ducati	11	2.59
Harley Davidson	43	10.14
Honda	95	22.41
Husqvarna	1	0.24
KTM	1	0.24
Kawasaki	26	6.13
Piaggio	1	0.24
Suzuki	34	8.02
Triumph	13	3.07
Unknown	5	1.18
Victory	1	0.24
Yamaha	69	16.27

Bike 1 model	Frequency	Percent
1200 GS	1	0.24
1200 XL Custom	1	0.24
1800C Goldwing	1	0.24
650	1	0.24
750 sport	1	0.24
900SS	1	0.24
919	1	0.24
AdVenture	1	0.24
Bonneville	1	0.24
Boulevard	1	0.24
Boulevard M50	1	0.24
CB500	1	0.24
CB500/4	1	0.24
CB500S	1	0.24
CB750	1	0.24
CB750K	1	0.24

CBR	2	0.48
CBR 900 RR	1	0.24
CBR1000RR	1	0.24
CBR1100XX	1	0.24
CBX	1	0.24
CVO Ultra	1	0.24
Chopper	1	0.24
Concours	3	0.72
Concours 14	2	0.48
Concours ZG1000	1	0.24
DL1000	2	0.48
DL1000 V-Strom	1	0.24
DL650	5	1.19
DL650 V-Strom	1	0.24
DR650S	1	0.24
Deuce	1	0.24
Dyna Wide Glide	1	0.24
EX250J Ninja 250R	1	0.24
Electra Glide	1	0.24
Electra Glide Classic	1	0.24
Electra Glide Ultra Classic	1	0.24
Eliminator	1	0.24
F650CS	1	0.24
F650GS	3	0.72
F800GS	1	0.24
F800ST	3	0.72
FJR	2	0.48
FJR1300	3	0.72
FJR1300 ABS	1	0.24
FJR13AE	1	0.24
FLH	1	0.24
FLHRCI Road King Classic	1	0.24
FLHS	1	0.24
FLHTC Electra Glide Classic	1	0.24
FLHTCU	2	0.48
FLHX - Street Glide	1	0.24
FLSTC-I	1	0.24
FLTR Road Glide	1	0.24
FLTRSE3	1	0.24
FXDC Super Glide	1	0.24
FXRS	1	0.24
FZ1	3	0.72

FZ6	1	0.24
FZR	1	0.24
FZR600R	1	0.24
Fat Boy	1	0.24
GL1200I	1	0.24
GL1500	1	0.24
GL1800	1	0.24
GL1800 Goldwing	4	0.95
GPZ500S	1	0.24
GR650 Tempter	1	0.24
GS500F	2	0.48
GS550ES	1	0.24
GS850G	1	0.24
GSF	1	0.24
GSF Bandit	1	0.24
GSX1300R	1	0.24
GSX600F	1	0.24
GSXR	1	0.24
GT1000	1	0.24
Gladius	1	0.24
Goldwing	15	3.58
Goldwing Intrastate	1	0.24
Helix with sidecar	1	0.24
Heritage Softail Classic	1	0.24
Intruder	1	0.24
K100LT	1	0.24
K100RS	1	0.24
K1100LT	3	0.72
K1100RS	4	0.95
K1200GT	4	0.95
K1200LT	5	1.19
K1200LTC	1	0.24
K1200R	1	0.24
K1200RS	7	1.67
K1200S	2	0.48
K75RT	1	0.24
K75S	4	0.95
KLR650	2	0.48
Katana	1	0.24
M109R2	1	0.24
MP3 500	1	0.24
Magna	3	0.72

Magna VF750C	1	0.24
NX250	1	0.24
Nighthawk	2	0.48
Nightster	1	0.24
Ninja	3	0.72
Ninja 250	1	0.24
Ninja 650R	1	0.24
Pacicoastfic	1	0.24
R100	2	0.48
R100GSPD	2	0.48
R100PD	1	0.24
R100R	1	0.24
R100RT	1	0.24
R1100GS	1	0.24
R1100R	3	0.72
R1100RA	1	0.24
R1100RS	2	0.48
R1100RT	4	0.95
R1100S	3	0.72
R1150GS	3	0.72
R1150GS Adventure	2	0.48
R1150R	2	0.48
R1150R Rockster	3	0.72
R1150RS	1	0.24
R1150RT	9	2.15
R1150RT-P	1	0.24
R1200	1	0.24
R1200C	1	0.24
R1200C Phoenix	1	0.24
R1200CLC	1	0.24
R1200GS	8	1.91
R1200RT	9	2.15
R6	3	0.72
R60	1	0.24
R60/6	1	0.24
R65	1	0.24
R69S	1	0.24
R80G/S	1	0.24
R80RT	2	0.48
R850R	2	0.48
R90/6	1	0.24
R90S	1	0.24

RSV	1	0.24
RT	1	0.24
Road Glide	1	0.24
Road King	4	0.95
Road King Classic	3	0.72
Road King, FLHRI	1	0.24
Road Star	1	0.24
Road Star Silverado	1	0.24
Royal Star	1	0.24
Royal Star Midnight Venture	1	0.24
Royal Star Tour Deluxe	1	0.24
Royal Star Venture	14	3.34
Royal Star Venture 1300	1	0.24
SC1000	1	0.24
SL Shiver 750	1	0.24
SM610	1	0.24
ST1100	4	0.95
ST1100A	1	0.24
ST1300	2	0.48
ST1300A	3	0.72
ST1300ABS	1	0.24
ST3	1	0.24
SV1000S	1	0.24
SV650	1	0.24
SV650SF	1	0.24
SY1100	1	0.24
Seca	1	0.24
Shadow	2	0.48
Shadow VLX	1	0.24
Softtail Delux	1	0.24
Speed Triple	2	0.48
Spitfire	1	0.24
Sport 1000	2	0.48
Sport 1000s	1	0.24
Sport Classic	1	0.24
Sport Classic Biposto	1	0.24
Sportster	3	0.72
Sprint	1	0.24
Sprint ST	1	0.24
Sprint ST 955i	1	0.24
Spyder	1	0.24
Star Classic	1	0.24

Street Glide/ FLHXI	1	0.24
Superbike	1	0.24
Superglide	2	0.48
T100	1	0.24
TDM	1	0.24
TU250X	1	0.24
Thunderbird	1	0.24
Tiger	5	1.19
TransAlp	4	0.95
TransAlp XL600V	1	0.24
Ultra	1	0.24
Ultra Classic	3	0.72
V-Star	1	0.24
V-Star 1300	1	0.24
V-Star Classic	1	0.24
V-Star Custom	1	0.24
V-Strom	2	0.48
V-Strom DL650A	1	0.24
V45 Sabre	1	0.24
V65 Magna	2	0.48
V65 Sabre	2	0.48
VF1100S	2	0.48
VF1100S Sabre	1	0.24
VF500F	1	0.24
VF700C Magna	2	0.48
VF700S	1	0.24
VF750C	1	0.24
VF750S	1	0.24
VFR	1	0.24
VFR750	1	0.24
VFR800	1	0.24
VFR800 Interceptor	1	0.24
VT1100 ACE	1	0.24
VT1100C2 ACE Shadow Classic	1	0.24
VT750DS - Shadow Spirit 750	1	0.24
VTR 1000f Superhawk	1	0.24
VTX	2	0.48
VTX1300R	1	0.24
VTX1800C	1	0.24
Valcan	1	0.24
Valkyrie	1	0.24
Venture	10	2.39

Venture Royale	3	0.72
Virago	1	0.24
Vision	1	0.24
Volusia	1	0.24
Voyager XII	1	0.24
Voyager ZN1300	1	0.24
Vulcan	2	0.48
Vulcan 2000	1	0.24
XB12S CG	1	0.24
XB12X Ulysses	1	0.24
XL1200C	1	0.24
XL600V	2	0.48
XLR	1	0.24
XS1100	1	0.24
XS1100SG	1	0.24
XS400	1	0.24
XS650E	1	0.24
XV250	1	0.24
XVZ13	1	0.24
XVZ1300	1	0.24
XVZ1300 Royal Star Venture	1	0.24
YFJ1300	1	0.24
YZF-R6	1	0.24
Z1000	1	0.24
ZRX1200	1	0.24
ZRX1200R	1	0.24
ZX9R	1	0.24

Frequency Missing = 5

Bike 1 manufacturer origin	Frequency	Percent
German	118	27.83
Japanese	224	52.83
None	5	1.18
Other European	29	6.84
US & Canada	47	11.08
Unknown	1	0.24

Bike 1 displacement	Frequency	Percent
250	10	2.4
400	1	0.24

487	1	0.24
499	1	0.24
500	7	1.68
572	1	0.24
576	1	0.24
599	1	0.24
600	21	5.04
649	1	0.24
650	26	6.24
651	1	0.24
700	4	0.96
740	2	0.48
749	1	0.24
750	23	5.52
798	1	0.24
800	15	3.6
805	1	0.24
848	2	0.48
850	2	0.48
865	1	0.24
883	1	0.24
900	4	0.96
908	1	0.24
919	2	0.48
950	1	0.24
953	1	0.24
955	6	1.44
980	3	0.72
992	4	0.96
993	1	0.24
996	3	0.72
997	1	0.24
1000	21	5.04
1050	4	0.96
1085	1	0.24
1093	1	0.24
1098	1	0.24
1100	35	8.39
1101	1	0.24
1130	3	0.72
1131	1	0.24
1132	1	0.24

1137	1	0.24
1150	17	4.08
1156	1	0.24
1170	3	0.72
1176	1	0.24
1198	2	0.48
1200	51	12.23
1203	1	0.24
1250	1	0.24
1294	2	0.48
1297	1	0.24
1298	4	0.96
1299	1	0.24
1300	43	10.31
1312	1	0.24
1340	5	1.2
1341	1	0.24
1400	4	0.96
1450	9	2.16
1452	1	0.24
1488	1	0.24
1500	8	1.92
1550	2	0.48
1552	1	0.24
1560	1	0.24
1570	1	0.24
1580	1	0.24
1584	4	0.96
1596	1	0.24
1600	2	0.48
1700	1	0.24
1731	1	0.24
1783	1	0.24
1800	16	3.84
1832	2	0.48
1833	1	0.24
1900	1	0.24
2053	1	0.24

Frequency Missing = 7

Bike 1 type	Frequency	Percent

2-1 Trike	2	0.47
Cruiser	74	17.45
Dual-Purpose	47	11.08
Scooter	1	0.24
Sport-Touring	103	24.29
Sportbike	67	15.8
Touring	96	22.64
Traditional	28	6.6
Unknown	6	1.42

Bike 2 year	Frequency	Percent
1950	1	0.44
1956	1	0.44
1963	1	0.44
1965	3	1.32
1966	1	0.44
1967	1	0.44
1968	1	0.44
1969	1	0.44
1970	1	0.44
1971	5	2.19
1972	2	0.88
1973	2	0.88
1974	1	0.44
1975	2	0.88
1976	2	0.88
1977	2	0.88
1978	6	2.63
1979	3	1.32
1981	4	1.75
1982	7	3.07
1983	10	4.39
1984	7	3.07
1985	4	1.75
1986	4	1.75
1987	3	1.32
1988	2	0.88
1989	3	1.32
1990	3	1.32
1992	4	1.75
1993	2	0.88

1994	7	3.07
1995	3	1.32
1996	5	2.19
1997	2	0.88
1998	6	2.63
1999	7	3.07
2000	9	3.95
2001	8	3.51
2002	10	4.39
2003	14	6.14
2004	10	4.39
2005	10	4.39
2006	17	7.46
2007	13	5.7
2008	7	3.07
2009	10	4.39
2010	1	0.44

Frequency Missing = 196

Bike 2 make	Frequency	Percent
Aprilia	2	0.88
BMW	40	17.54
BSA	1	0.44
Buell	2	0.88
Bultaco	1	0.44
Cagiva	1	0.44
Ducati	11	4.82
Harley Davidson	17	7.46
Honda	48	21.05
Husqvarna	2	0.88
Kawasaki	17	7.46
Kemco	1	0.44
Matchless	1	0.44
Moto Guzzi	3	1.32
Norton	1	0.44
Peraves	1	0.44
Piaggio	1	0.44
Suzuki	29	12.72
Triumph	11	4.82
Vespa	2	0.88
Yamaha	36	15.79

Frequency Missing = 196

Bike 2 model	Frequency	Percent
150	1	0.44
150GL	1	0.44
650	1	0.44
748	1	0.44
900SS	1	0.44
900SSCR	1	0.44
900SSD	1	0.44
998	1	0.44
Ambassador	1	0.44
Bonneville	3	1.32
Boulevard	1	0.44
Breva	1	0.44
Burgman	1	0.44
C50	1	0.44
CB1000C	1	0.44
CB350	1	0.44
CB750	1	0.44
CB750K	1	0.44
CB750L	1	0.44
CB900F	3	1.32
CBR600RR	2	0.88
CM450E	1	0.44
CR250	1	0.44
CRF450X	1	0.44
CS650	1	0.44
CT90	1	0.44
Concours	2	0.88
DL650	2	0.88
DR650	1	0.44
DR650SE	1	0.44
DRZ400	1	0.44
DRZ400SM	1	0.44
Daytona	1	0.44
Dyna Low Rider	1	0.44
Elecra Glide	1	0.44
Elite	1	0.44
F650CS	1	0.44
F650GS	2	0.88

FJ1200	1	0.44
FJR1300	2	0.88
FL	1	0.44
FLHTIC	1	0.44
FXDL	1	0.44
FZ1	1	0.44
FZ6	1	0.44
FZR600	1	0.44
Futura	1	0.44
G11	1	0.44
GL500	1	0.44
GS1100G	1	0.44
GS500	4	1.76
GS650GLX	1	0.44
GS750	1	0.44
GS750E	1	0.44
GSXR600 Race bike	1	0.44
GT1000	1	0.44
GZ250	1	0.44
Goldwing	2	0.88
Goldwing Aspencade GL	1	0.44
Goldwing Interstate	1	0.44
Gran Canyon	1	0.44
Hybrid	1	0.44
Interceptor	1	0.44
Intruder	1	0.44
K100RS	3	1.32
K1100RS	1	0.44
K12200Lt	1	0.44
KLR	1	0.44
KLR650	4	1.76
KZ1000	1	0.44
KZ750	1	0.44
LX150	1	0.44
Legend TT	1	0.44
Lightning	2	0.88
MP3	1	0.44
Magna	1	0.44
Monster 620D	1	0.44
N. Falcone	1	0.44
New Bonneville	1	0.44
Nighthawk	1	0.44

Nighthawk 700SC	1	0.44
Ninja	1	0.44
Ninja 650R	1	0.44
Pacific Coast	1	0.44
Paul Smart 1000LE	1	0.44
R100CS	1	0.44
R100GS	1	0.44
R100R	1	0.44
R100RS	2	0.88
R100RT	3	1.32
R1100GS	1	0.44
R1100RT	3	1.32
R1150GS	2	0.88
R1150RS	1	0.44
R1200GS ADV	1	0.44
R1200RT	5	2.2
R60	1	0.44
R60/2	1	0.44
R75/5	2	0.88
R75/6	2	0.88
R80	1	0.44
R80ST	2	0.88
R90	1	0.44
R900/6	1	0.44
RM250	1	0.44
RVT1000R (RC51)	1	0.44
Raider	1	0.44
Road Glide	1	0.44
Road King	3	1.32
Road King Classis	1	0.44
Road Star	1	0.44
Road Star Midnight	1	0.44
Road Star Venture	1	0.44
S50	1	0.44
SC1000	1	0.44
SR500	2	0.88
ST1100	1	0.44
ST1100A	1	0.44
SV1000S	2	0.88
SV650	2	0.88
Sabre	3	1.32
Scarabeo 500ie	1	0.44

Shadow	2	0.88
Silverwing	1	0.44
Speed Triple	3	1.32
Sport Classic SporT1000	1	0.44
Sport Touring 2 (ST2)	1	0.44
Sportster	6	2.64
Springer Softail, FXSTS	1	0.44
Sprint - RS	1	0.44
Sprint St	1	0.44
Super ECO	1	0.44
TDM 850	1	0.44
TE410	1	0.44
TE610	1	0.44
TTR250	1	0.44
TW200	1	0.44
TX	1	0.44
Trail 110	1	0.44
Ulysses	1	0.44
V-Star	1	0.44
V-Star 1100	1	0.44
V-Star 1100 Silverado	1	0.44
V-Strom	1	0.44
V-Strom DL1000	1	0.44
V65 Sabre	1	0.44
VF1100C	1	0.44
VF1100C Magna	1	0.44
VF1100C- V65 Magna	1	0.44
VF750C Magna	1	0.44
VFR	1	0.44
VFR800	2	0.88
VT 750 Shadow	1	0.44
VT500FT Ascot	1	0.44
Venture Royale	1	0.44
Virago	4	1.76
Voyager ZN1300	1	0.44
Vulcan	1	0.44
Vulcan 900LT	1	0.44
W650	1	0.44
WR250X	1	0.44
WR400F Supermotard	1	0.44
XL250	1	0.44
XR250L	1	0.44

XR650L	1	0.44
XS1100H	1	0.44
XS650	1	0.44
XS750	1	0.44
XS750SF	1	0.44
XT	1	0.44
XT250	1	0.44
XVS11	1	0.44
YDS3	1	0.44
YZF600R	1	0.44
ZG1000	1	0.44
ZX1100e	1	0.44

Frequency Missing = 197

Bike 2 displacement	Frequency	Percent
80	1	0.45
90	2	0.9
110	1	0.45
150	2	0.9
177	1	0.45
200	1	0.45
250	11	4.93
350	1	0.45
399	1	0.45
400	5	2.24
450	3	1.35
470	1	0.45
492	1	0.45
499	1	0.45
500	7	3.14
535	1	0.45
550	1	0.45
600	12	5.38
620	1	0.45
649	3	1.35
650	23	10.31
700	3	1.35
748	1	0.45
750	21	9.42
780	1	0.45
790	1	0.45

798	1	0.45
800	10	4.48
833	1	0.45
850	1	0.45
883	1	0.45
900	10	4.48
919	1	0.45
944	1	0.45
955	3	1.35
960	1	0.45
980	2	0.9
992	1	0.45
996	1	0.45
998	3	1.35
999	1	0.45
1000	18	8.07
1050	2	0.9
1070	1	0.45
1075	1	0.45
1096	1	0.45
1100	19	8.52
1101	1	0.45
1150	2	0.9
1179	1	0.45
1200	11	4.93
1203	1	0.45
1300	6	2.69
1340	2	0.9
1380	1	0.45
1400	1	0.45
1450	3	1.35
1488	1	0.45
1500	2	0.9
1700	1	0.45
1800	2	0.9
1900	1	0.45

Frequency Missing = 201

Bike 3 year	Frequency	Percent
1958	1	0.96
1959	1	0.96

1962	1	0.96
1967	1	0.96
1968	2	1.92
1969	1	0.96
1971	2	1.92
1972	2	1.92
1974	2	1.92
1975	5	4.81
1976	1	0.96
1977	1	0.96
1978	2	1.92
1979	2	1.92
1980	3	2.88
1981	2	1.92
1982	3	2.88
1983	6	5.77
1984	1	0.96
1985	3	2.88
1986	2	1.92
1987	4	3.85
1988	2	1.92
1990	5	4.81
1991	2	1.92
1992	3	2.88
1993	1	0.96
1994	3	2.88
1995	1	0.96
1996	1	0.96
1997	2	1.92
1999	3	2.88
2000	1	0.96
2001	4	3.85
2002	4	3.85
2003	9	8.65
2005	4	3.85
2006	2	1.92
2007	5	4.81
2008	3	2.88
2009	1	0.96

Frequency Missing = 320

Bike 3 make	Frequency	Percent

Aprilia	2	1.92
BMW	19	18.27
BSA	1	0.96
Cagiva	1	0.96
Ducati	6	5.77
Geleria	1	0.96
Harley Davidson	6	5.77
Honda	23	22.12
Kawasaki	13	12.5
Maico	1	0.96
Matchless	1	0.96
Norton	2	1.92
Suzuki	14	13.46
Tomos	1	0.96
Triumph	3	2.88
Ural	1	0.96
Yamaha	9	8.65

Frequency Missing = 320

Bike 3 model	Frequency	Percent
1100RT	1	0.98
1380	1	0.98
440 Magnum	1	0.98
748	1	0.98
848	1	0.98
851S	1	0.98
900SSCR	1	0.98
919	1	0.98
Alazurra 650SS	1	0.98
B25	1	0.98
Black Bomber	1	0.98
Bonneville	1	0.98
CB1100f	1	0.98
CB400F	1	0.98
CB400T1 Hawk 1	1	0.98
CB750	1	0.98
CBR	1	0.98
CBR600F	1	0.98
CBR900RR	1	0.98
CL175	1	0.98

CR250	1	0.98
Commando	2	1.96
DR350	2	1.96
Daytona	1	0.98
EX250	1	0.98
FD110	1	0.98
FLT	1	0.98
Foggy	1	0.98
G3L	1	0.98
GS650GLD	1	0.98
GS750E	1	0.98
GSXR600	2	1.96
K100	1	0.98
K1200LT	1	0.98
K75	1	0.98
KDX220R	1	0.98
KLR650	1	0.98
KX250	1	0.98
KZ440	1	0.98
KZ440 LTD	1	0.98
KZ550 LTD	1	0.98
KZ900A4	1	0.98
Magna	1	0.98
NX650	1	0.98
Nighthawk 750	1	0.98
Ninja	3	2.94
Patrol	1	0.98
R-60	1	0.98
R100GS	1	0.98
R100GSPD	1	0.98
R100Mystic	1	0.98
R100RS	2	1.96
R100RT	1	0.98
R1150GS	1	0.98
R1150GSA	1	0.98
R1200RT	1	0.98
R50/5	1	0.98
R60/6	1	0.98
R75/5	1	0.98
R80G/SPD	1	0.98
R80RT	1	0.98
RS125	1	0.98

Rebel	1	0.98
SR 500	1	0.98
SV	1	0.98
SV650	5	4.9
Shadow (VT1100)	1	0.98
Sportster	3	2.94
Sprint	1	0.98
SuperHawk	1	0.98
Supersport	1	0.98
TTR125	1	0.98
Tiger 100	1	0.98
Trail 110	1	0.98
Tuono	1	0.98
V-Star 650 Classic	1	0.98
V-Star Custom	1	0.98
V65 Sabre	1	0.98
VF500C Magna	1	0.98
VF750S	1	0.98
VT500FT	1	0.98
Vulcan	1	0.98
XJ650LK	1	0.98
XR175	1	0.98
XT350	1	0.98
XT550	1	0.98
XT600E	1	0.98
YD3	1	0.98
Z750S	1	0.98
Z90	1	0.98

Frequency Missing = 322

Bike 3 displacement	Frequency	Percent
50	1	1
90	1	1
110	2	2
125	2	2
175	2	2
220	1	1
250	8	8
300	1	1
350	4	4
400	1	1

436	1	1
440	2	2
450	1	1
499	1	1
500	5	5
550	2	2
600	7	7
650	13	13
675	1	1
700	1	1
748	1	1
750	9	9
790	1	1
800	2	2
848	1	1
850	2	2
851	1	1
883	1	1
900	4	4
919	1	1
980	2	2
996	1	1
998	1	1
1000	6	6
1100	4	4
1130	1	1
1150	1	1
1200	3	3
1340	1	1

Frequency Missing = 324

Bike 4 year	Frequency	Percent
1950	1	1.61
1963	1	1.61
1964	1	1.61
1965	1	1.61
1966	3	4.84
1970	1	1.61
1971	1	1.61
1972	5	8.06
1973	5	8.06

1974	1	1.61
1975	1	1.61
1976	3	4.84
1977	1	1.61
1978	3	4.84
1979	1	1.61
1981	3	4.84
1982	3	4.84
1983	3	4.84
1985	1	1.61
1986	2	3.23
1988	1	1.61
1989	2	3.23
1990	1	1.61
1992	1	1.61
1997	1	1.61
1998	2	3.23
2000	1	1.61
2001	4	6.45
2003	1	1.61
2005	3	4.84
2007	2	3.23
2008	2	3.23

Frequency Missing = 362

Bike 4 make	Frequency	Percent
BMW	5	8.06
BSA	1	1.61
Chinese	1	1.61
Ducati	2	3.23
Harley Davidson	1	1.61
Honda	23	37.1
Kawasaki	3	4.84
Moto Guzzi	1	1.61
Motobecane	1	1.61
Suzuki	5	8.06
Triumph	6	9.68
Ural	1	1.61
Vincent	1	1.61
Yamaha	11	17.74

Frequency Missing = 362

Bike 4 model	Frequency	Percent
1098s	1	1.61
1100 Interstate	1	1.61
Bonneville	2	3.23
CB350	1	1.61
CB350/Four	1	1.61
CB450	1	1.61
CB500	1	1.61
CB750	1	1.61
CB750A	1	1.61
CB750F	1	1.61
CL360MK1	1	1.61
CT-90 (Trail 90)	1	1.61
DT-250	1	1.61
Dakar	1	1.61
Daytona	1	1.61
Eldorado	1	1.61
GB500	1	1.61
GS450	1	1.61
GS650E	1	1.61
GS850G	1	1.61
GZ250	1	1.61
Goldwing	2	3.23
Hawk GT	2	3.23
Interceptor	1	1.61
KLR650	1	1.61
KZ750R1	1	1.61
Majesty	1	1.61
Mike Hailwood Replica	1	1.61
Mobylette	1	1.61
R100/7	1	1.61
R1150GS	1	1.61
R6	1	1.61
R60/6	2	3.23
RD400	1	1.61
RZ350	1	1.61
Rapide	1	1.61
S3	1	1.61
S90	1	1.61
SR250	1	1.61

SRX600	1	1.61
Scooter	1	1.61
Shadow (VT1100)	1	1.61
Shadow A.C.E.	1	1.61
Sprint ST	1	1.61
TX125	1	1.61
Thruxton	1	1.61
Tiger Cub	1	1.61
Tourist	1	1.61
Trail 110	1	1.61
Twinstar	1	1.61
V-Star	1	1.61
VFR800FI	1	1.61
Victor	1	1.61
Water Buffalo	1	1.61
XL250	1	1.61
XS650	1	1.61
XT225	1	1.61
Zuma	1	1.61

Frequency Missing = 362

Bike 4 displacement	Frequency	Percent
50	3	4.84
90	2	3.23
110	1	1.61
125	1	1.61
200	2	3.23
225	1	1.61
249	1	1.61
250	3	4.84
350	3	4.84
360	1	1.61
400	3	4.84
441	1	1.61
450	2	3.23
500	2	3.23
600	4	6.45
650	8	12.9
750	8	12.9
800	1	1.61
849	1	1.61

900	2	3.23
949	1	1.61
955	2	3.23
1000	4	6.45
1098	1	1.61
1100	3	4.84
1130	1	1.61

Frequency Missing = 362

Approximately how many miles did you ride motorcycles in the last 12 months?	Frequency	Percent
2	1	0.24
5	1	0.24
8	1	0.24
20	1	0.24
50	1	0.24
100	2	0.48
200	1	0.24
500	6	1.44
600	2	0.48
700	1	0.24
1000	18	4.32
1200	1	0.24
1500	7	1.68
2000	21	5.04
2200	1	0.24
2400	1	0.24
2500	10	2.4
2600	1	0.24
2750	1	0.24
3000	19	4.56
3107	1	0.24
3400	1	0.24
3500	4	0.96
3700	1	0.24
4000	23	5.52
4200	1	0.24
4500	6	1.44
4600	1	0.24
5000	35	8.39
5500	3	0.72
6000	13	3.12

6400	1	0.24
6500	4	0.96
7000	16	3.84
7456	1	0.24
7500	4	0.96
8000	28	6.71
8228	1	0.24
8400	1	0.24
8500	1	0.24
8750	1	0.24
9000	8	1.92
10000	40	9.59
10100	1	0.24
11000	4	0.96
11241	1	0.24
11300	1	0.24
12000	21	5.04
12500	1	0.24
13000	7	1.68
14000	8	1.92
14463	1	0.24
15000	31	7.43
16000	1	0.24
17000	4	0.96
17500	1	0.24
18000	8	1.92
19000	2	0.48
20000	12	2.88
21000	1	0.24
22000	3	0.72
23500	1	0.24
24000	1	0.24
25000	5	1.2
26000	1	0.24
28000	1	0.24
30000	4	0.96
40000	2	0.48
45000	1	0.24
50000	1	0.24

Frequency Missing = 7

What year did you purchase this motorcycle?	Frequency	Percent

1981	2	0.48
1982	1	0.24
1983	1	0.24
1985	2	0.48
1986	1	0.24
1988	1	0.24
1990	2	0.48
1992	1	0.24
1993	2	0.48
1995	6	1.44
1997	4	0.96
1998	8	1.92
1999	9	2.16
2000	10	2.4
2001	14	3.37
2002	15	3.61
2003	25	6.01
2004	31	7.45
2005	25	6.01
2006	34	8.17
2007	58	13.94
2008	100	24.04
2009	64	15.38

Frequency Missing = 8

What is the odometer reading on this motorcycle?	Frequency	Percent
0	3	0.74
4	1	0.25
12	1	0.25
38	1	0.25
45	1	0.25
120	1	0.25
630	1	0.25
700	1	0.25
950	1	0.25
1200	2	0.49
1250	1	0.25
1278	1	0.25
1415	1	0.25
1500	1	0.25

1800	2	0.49
2005	2	0.49
2045	1	0.25
2300	1	0.25
2380	1	0.25
2400	1	0.25
2500	2	0.49
2744	1	0.25
2800	1	0.25
3000	1	0.25
3100	1	0.25
3500	2	0.49
4000	3	0.74
4400	1	0.25
4500	2	0.49
4600	1	0.25
5000	2	0.49
5300	1	0.25
5500	3	0.74
6000	1	0.25
6234	1	0.25
6700	2	0.49
7100	1	0.25
7150	1	0.25
7456	1	0.25
7500	2	0.49
7550	1	0.25
7600	2	0.49
7900	1	0.25
8012	1	0.25
8045	1	0.25
8200	1	0.25
9000	1	0.25
9123	1	0.25
9200	1	0.25
9408	1	0.25
9800	1	0.25
9846	1	0.25
9900	1	0.25
10000	1	0.25
10032	1	0.25
10078	1	0.25

10200	1	0.25
10232	1	0.25
10300	1	0.25
10454	1	0.25
10500	1	0.25
10800	1	0.25
11000	3	0.74
11050	1	0.25
11294	1	0.25
11472	1	0.25
11500	2	0.49
11580	1	0.25
11957	1	0.25
12000	5	1.23
12436	1	0.25
12500	2	0.49
12800	1	0.25
13000	4	0.98
13300	1	0.25
13500	3	0.74
13709	1	0.25
14000	5	1.23
14333	1	0.25
14400	1	0.25
14500	3	0.74
14555	1	0.25
14700	1	0.25
15000	5	1.23
15100	1	0.25
15280	1	0.25
15500	1	0.25
15560	1	0.25
15562	1	0.25
15850	1	0.25
15860	1	0.25
15875	1	0.25
16000	3	0.74
16340	1	0.25
16580	1	0.25
16600	1	0.25
16879	1	0.25
16980	1	0.25

17000	1	0.25
17500	1	0.25
17700	1	0.25
17835	1	0.25
18000	8	1.97
18200	1	0.25
18489	1	0.25
18500	2	0.49
18627	1	0.25
18700	1	0.25
18840	1	0.25
19000	4	0.98
19262	1	0.25
19300	1	0.25
19435	1	0.25
19500	1	0.25
19650	1	0.25
19780	1	0.25
19800	1	0.25
19878	1	0.25
20000	3	0.74
20048	1	0.25
20250	1	0.25
20500	1	0.25
20505	1	0.25
20600	1	0.25
21000	4	0.98
21389	1	0.25
21506	1	0.25
21600	1	0.25
21748	1	0.25
21764	1	0.25
22000	2	0.49
22086	1	0.25
22210	1	0.25
22700	1	0.25
23000	1	0.25
24000	3	0.74
24200	1	0.25
24343	1	0.25
24500	1	0.25
24538	1	0.25

25000	7	1.72
25105	1	0.25
25622	1	0.25
26000	3	0.74
26500	1	0.25
26551	1	0.25
26895	1	0.25
27000	1	0.25
27136	1	0.25
28000	5	1.23
28340	1	0.25
28500	1	0.25
28512	1	0.25
29000	3	0.74
29985	1	0.25
29999	1	0.25
30000	2	0.49
30125	1	0.25
30500	3	0.74
30890	1	0.25
31000	3	0.74
31210	1	0.25
31428	1	0.25
32000	4	0.98
32400	1	0.25
33000	3	0.74
33281	1	0.25
33600	1	0.25
34000	3	0.74
34578	1	0.25
35000	12	2.95
35300	1	0.25
35458	1	0.25
36000	3	0.74
36761	1	0.25
37000	3	0.74
37360	1	0.25
38000	1	0.25
38357	1	0.25
38500	1	0.25
38763	1	0.25
39000	2	0.49

39005	1	0.25
39350	1	0.25
39480	1	0.25
39867	1	0.25
39986	1	0.25
40000	1	0.25
40135	1	0.25
40450	1	0.25
42000	3	0.74
42463	1	0.25
43000	2	0.49
43872	1	0.25
44000	1	0.25
44328	1	0.25
44578	1	0.25
45000	1	0.25
45555	1	0.25
46000	2	0.49
47500	1	0.25
48000	2	0.49
48600	1	0.25
48700	1	0.25
48900	1	0.25
49000	1	0.25
49500	1	0.25
49954	1	0.25
50000	5	1.23
50300	1	0.25
50809	1	0.25
51000	1	0.25
51125	1	0.25
52000	2	0.49
52226	1	0.25
52500	1	0.25
53674	1	0.25
54000	2	0.49
54752	1	0.25
56000	3	0.74
56200	1	0.25
56435	1	0.25
58000	6	1.47
59000	1	0.25

60000	1	0.25
61250	1	0.25
62100	1	0.25
64150	1	0.25
65000	2	0.49
65500	1	0.25
65848	1	0.25
67000	1	0.25
68000	2	0.49
68500	1	0.25
69547	1	0.25
70000	1	0.25
72000	2	0.49
72563	1	0.25
73300	1	0.25
73700	1	0.25
74000	1	0.25
75400	1	0.25
76000	1	0.25
76543	1	0.25
77732	1	0.25
78000	2	0.49
78550	1	0.25
78919	1	0.25
79000	1	0.25
80000	3	0.74
81500	1	0.25
83000	1	0.25
83500	1	0.25
85000	1	0.25
86500	1	0.25
88000	1	0.25
88987	1	0.25
92760	1	0.25
95000	1	0.25
95640	1	0.25
96300	1	0.25
98000	1	0.25
99000	1	0.25
102500	1	0.25
104453	1	0.25
107000	1	0.25

108544	1	0.25
113000	1	0.25
114000	1	0.25
120000	2	0.49
121800	1	0.25
123000	1	0.25
128623	2	0.49
137200	1	0.25
147800	1	0.25
151000	1	0.25
152200	1	0.25
155000	1	0.25
196530	1	0.25

Frequency Missing = 17

Category of current odometer reading of primary motorcycle	Frequency	Percent
a: 0-999	11	2.59
b: 1000 - < 5000	29	6.84
c: 5000 - < 10000	29	6.84
d: 10000's	101	23.82
e: 20000's	60	14.15
f: 30000's	59	13.92
g: 40000's	26	6.13
h: 50000's	29	6.84
i: 60000's	13	3.07
j: 70000's	16	3.77
k: 80000's	10	2.36
l: 90000's	6	1.42
m: 100000 or more	18	4.25
Unknown	17	4.01

Did you purchase this motorcycle new or used?	Frequency	Percent
New	163	39
Used	255	61

Frequency Missing = 6

If you purchased this motorcycle used, what was the odometer reading when you purchased it?	Frequency	Percent
16	1	0.4
23	1	0.4

30	1	0.4
43	1	0.4
75	1	0.4
97	1	0.4
99	1	0.4
100	1	0.4
118	1	0.4
200	1	0.4
325	1	0.4
343	1	0.4
500	1	0.4
600	2	0.81
650	1	0.4
677	1	0.4
700	1	0.4
900	2	0.81
1000	2	0.81
1100	1	0.4
1150	1	0.4
1200	1	0.4
1250	1	0.4
1300	2	0.81
1341	1	0.4
1373	1	0.4
1487	1	0.4
2000	4	1.62
2400	1	0.4
2500	2	0.81
2560	1	0.4
2600	1	0.4
2800	1	0.4
3218	1	0.4
3228	1	0.4
3400	2	0.81
3480	2	0.81
3500	1	0.4
3600	1	0.4
3800	1	0.4
4000	2	0.81
4500	2	0.81
4524	1	0.4
4700	2	0.81

4800	2	0.81
4884	1	0.4
5000	6	2.43
5052	1	0.4
5100	1	0.4
5133	1	0.4
5240	1	0.4
5900	1	0.4
6000	3	1.21
6234	1	0.4
6400	1	0.4
6600	2	0.81
6700	1	0.4
7000	2	0.81
7500	2	0.81
7700	1	0.4
7800	1	0.4
7976	1	0.4
8000	3	1.21
8100	1	0.4
9000	6	2.43
9200	1	0.4
9500	2	0.81
9800	1	0.4
10000	5	2.02
10100	1	0.4
10200	1	0.4
10346	1	0.4
10500	1	0.4
11000	5	2.02
11555	1	0.4
11700	3	1.21
12000	4	1.62
12500	1	0.4
13000	2	0.81
13205	1	0.4
13300	1	0.4
13600	1	0.4
13850	1	0.4
14000	2	0.81
14110	1	0.4
14320	1	0.4

14500	2	0.81
14789	1	0.4
14900	1	0.4
15000	3	1.21
15840	1	0.4
16000	4	1.62
16378	1	0.4
16600	1	0.4
17000	3	1.21
17450	1	0.4
18000	3	1.21
18020	1	0.4
19000	3	1.21
19400	1	0.4
20000	4	1.62
21000	2	0.81
21100	1	0.4
21354	1	0.4
22000	7	2.83
22260	1	0.4
23000	5	2.02
23500	1	0.4
24000	5	2.02
24383	1	0.4
25000	1	0.4
25500	1	0.4
25600	1	0.4
26973	1	0.4
27000	1	0.4
28000	3	1.21
28500	1	0.4
28800	1	0.4
29000	1	0.4
29500	1	0.4
29750	1	0.4
30000	2	0.81
32000	1	0.4
33000	3	1.21
33768	1	0.4
34000	2	0.81
34500	1	0.4
35785	1	0.4

36000	2	0.81
38000	2	0.81
39000	2	0.81
40500	1	0.4
41000	1	0.4
42000	1	0.4
42400	1	0.4
42850	1	0.4
43500	1	0.4
43865	1	0.4
44000	1	0.4
45000	1	0.4
46000	1	0.4
51000	1	0.4
52000	1	0.4
52100	1	0.4
54721	1	0.4
56000	1	0.4
58000	1	0.4
61000	1	0.4
64000	1	0.4
65000	1	0.4
70000	1	0.4
71236	1	0.4
71285	1	0.4
72500	1	0.4
75000	3	1.21
93000	1	0.4
102567	1	0.4
103000	1	0.4
121000	1	0.4

Frequency Missing = 177

Category of odometer reading when first bike was purchased (if bought used)	Frequency	Percent
a: 0-999	20	4.72
b: 1000 - < 5000	40	9.43
c: 5000 - < 10000	40	9.43
d: 10000's	59	13.92
e: 20000's	41	9.67
f: 30000's	17	4.01
g: 40000's	10	2.36

h: 50000's	6	1.42
i: 60000's	3	0.71
j: 70000's	7	1.65
l: 90000's	1	0.24
m: 100000 or more	3	0.71
Unknown	177	41.75

When at home, where do you store this motorcycle?	Frequency	Percent
Driveway	19	4.51
Garage/house	352	83.61
Other: Carport	6	1.43
Other: Cycle Shell	1	0.24
Other: Gravel under trees - covered	1	0.24
Other: Parking garage	1	0.24
Other: Police Motor Garage	1	0.24
Other: Shed	6	1.43
Other: Shop	1	0.24
Other: Storage Unit	2	0.48
Other: Warehouse	1	0.24
Other: Yard	2	0.48
Parking lot	20	4.75
Street	8	1.9

Frequency Missing = 3

What type of internet access do you have at home?	Frequency	Percent
Dial-up	11	2.63
High speed with wireless	328	78.28
High speed without wireless	71	16.95
None	9	2.15

Frequency Missing = 5

Is there an electrical outlet near the motorcycle?	Frequency	Percent
No	56	13.37
Yes	363	86.63

Frequency Missing = 5

When at home, how often do you cover this motorcycle?	Frequency	Percent
A_Always	70	16.67

B_Almost Always	40	9.52
C_Sometimes	54	12.86
D_Rarely	74	17.62
E_Never	182	43.33

Frequency Missing = 4

On this motorcycle, how often do you use a windshield?	Frequency	Percent
A_Always	318	75.53
B_Almost Always	23	5.46
C_Sometimes	12	2.85
D_Rarely	4	0.95
E_Never	64	15.2

Frequency Missing = 3

On this motorcycle, how often do you use luggage carriers or saddle bags?	Frequency	Percent
A_Always	230	54.5
B_Almost Always	80	18.96
C_Sometimes	52	12.32
D_Rarely	18	4.27
E_Never	42	9.95

Frequency Missing = 2

What items do you carry in it? (Select all that apply)	Frequency	Percent
Books, Clothing	2	0.53
Books, Clothing, First Aid Kit	1	0.26
Books, Clothing, First Aid Kit, Food/Beverages	5	1.32
Books, Clothing, First Aid Kit, Food/Beverages, Other: food	1	0.26
Books, Clothing, First Aid Kit, Food/Beverages, Other: ride gear	1	0.26
Books, Clothing, First Aid Kit, Food/Beverages, Papers	3	0.79
Books, Clothing, First Aid Kit, Food/Beverages, Papers, Other: Groceries	1	0.26
Books, Clothing, First Aid Kit, Food/Beverages, Papers, Other: Tools	2	0.53
Books, Clothing, First Aid Kit, Food/Beverages, Papers, Other: Touring essentials	1	0.26

Books, Clothing, First Aid Kit, Food/Beverages, Papers, Other: tool kit, fire extinguisher,jumper cables	1	0.26
Books, Clothing, First Aid Kit, Food/Beverages, Papers, Other: tools	1	0.26
Books, Clothing, First Aid Kit, Other: Gym Cloths	1	0.26
Books, Clothing, First Aid Kit, Other: tools, oil	1	0.26
Books, Clothing, First Aid Kit, Papers	3	0.79
Books, Clothing, Food/Beverages	5	1.32
Books, Clothing, Food/Beverages, Other: Cargonet, Towel, Work related supplies	1	0.26
Books, Clothing, Food/Beverages, Other: misc(depending on trip)	1	0.26
Books, Clothing, Food/Beverages, Other: shoes	1	0.26
Books, Clothing, Food/Beverages, Papers	8	2.11
Books, Clothing, Food/Beverages, Papers, Other: Equipment, groceries	1	0.26
Books, Clothing, Food/Beverages, Papers, Other: Maintenance Items	1	0.26
Books, Clothing, Food/Beverages, Papers, Other: Rain Gear	1	0.26
Books, Clothing, Food/Beverages, Papers, Other: Suitcase	1	0.26
Books, Clothing, Food/Beverages, Papers, Other: Tools	1	0.26
Books, Clothing, Food/Beverages, Papers, Other: gas	1	0.26
Books, Clothing, Other: Small Purchases	1	0.26
Books, Clothing, Papers	1	0.26
Books, Computer, Clothing	2	0.53
Books, Computer, Clothing, First Aid Kit	1	0.26
Books, Computer, Clothing, First Aid Kit, Food/Beverages	7	1.84
Books, Computer, Clothing, First Aid Kit, Food/Beverages, Other: Tools	1	0.26
Books, Computer, Clothing, First Aid Kit, Food/Beverages, Other: tools	1	0.26
Books, Computer, Clothing, First Aid Kit, Food/Beverages, Other: tools air compressor plug kit helmet	1	0.26
Books, Computer, Clothing, First Aid Kit, Food/Beverages, Papers	19	5
Books, Computer, Clothing, First Aid Kit, Food/Beverages, Papers, Other: Clothes (touring)	1	0.26

Books, Computer, Clothing, First Aid Kit, Food/Beverages, Papers, Other: Kinda depends on the ride	1	0.26
Books, Computer, Clothing, First Aid Kit, Food/Beverages, Papers, Other: Luggage	1	0.26
Books, Computer, Clothing, First Aid Kit, Food/Beverages, Papers, Other: Stuff	1	0.26
Books, Computer, Clothing, First Aid Kit, Food/Beverages, Papers, Other: Tools	1	0.26
Books, Computer, Clothing, First Aid Kit, Food/Beverages, Papers, Other: Tools, Rain gear	1	0.26
Books, Computer, Clothing, First Aid Kit, Food/Beverages, Papers, Other: Tools, Spare Visor	1	0.26
Books, Computer, Clothing, First Aid Kit, Food/Beverages, Papers, Other: Tools, spare visor, tire repair kit	1	0.26
Books, Computer, Clothing, First Aid Kit, Food/Beverages, Papers, Other: Whatever I have to take with me	1	0.26
Books, Computer, Clothing, First Aid Kit, Food/Beverages, Papers, Other: briefcase, tools/touring gear	1	0.26
Books, Computer, Clothing, First Aid Kit, Food/Beverages, Papers, Other: camping gear	1	0.26
Books, Computer, Clothing, First Aid Kit, Food/Beverages, Papers, Other: groceries	1	0.26
Books, Computer, Clothing, First Aid Kit, Food/Beverages, Papers, Other: guns	1	0.26
Books, Computer, Clothing, First Aid Kit, Food/Beverages, Papers, Other: locks, rags, bungee cords	1	0.26
Books, Computer, Clothing, First Aid Kit, Food/Beverages, Papers, Other: tire pressure gauge, tools	1	0.26
Books, Computer, Clothing, First Aid Kit, Food/Beverages, Papers, Other: tools for work	1	0.26
Books, Computer, Clothing, First Aid Kit, Food/Beverages, Papers, Other: tools/parts	1	0.26
Books, Computer, Clothing, First Aid Kit, Food/Beverages, Papers, Other: tools, camping gear	1	0.26
Books, Computer, Clothing, First Aid Kit, Papers	4	1.05
Books, Computer, Clothing, Food/Beverages	6	1.58
Books, Computer, Clothing, Food/Beverages, Papers	6	1.58
Books, Computer, Clothing, Food/Beverages, Papers, Other: Whatever fits	1	0.26

Books, Computer, Clothing, Food/Beverages, Papers, Other: tools	1	0.26
Books, Computer, Clothing, Other: extra gear, gloves etc.	1	0.26
Books, Computer, Clothing, Papers	3	0.79
Books, Computer, Clothing, Papers, Other: Tools for work	1	0.26
Books, Computer, Food/Beverages	1	0.26
Books, Computer, Other: Laptop backpack for commuting	1	0.26
Books, Computer, Papers	1	0.26
Books, First Aid Kit, Food/Beverages	1	0.26
Books, First Aid Kit, Food/Beverages, Papers	1	0.26
Books, Food/Beverages	1	0.26
Books, Papers, Other: Rain Gear	1	0.26
Clothing	18	4.74
Clothing, First Aid Kit	12	3.16
Clothing, First Aid Kit, Food/Beverages	20	5.26
Clothing, First Aid Kit, Food/Beverages, Other: Camping gear, Tools	1	0.26
Clothing, First Aid Kit, Food/Beverages, Other: Cover, bungees, cleaning supplies	1	0.26
Clothing, First Aid Kit, Food/Beverages, Other: Items picked up while shopping	1	0.26
Clothing, First Aid Kit, Food/Beverages, Other: Tool Kit	1	0.26
Clothing, First Aid Kit, Food/Beverages, Other: Tool Kit extra fuses multi-tool	1	0.26
Clothing, First Aid Kit, Food/Beverages, Other: Tools	2	0.53
Clothing, First Aid Kit, Food/Beverages, Other: camera, tools	1	0.26
Clothing, First Aid Kit, Food/Beverages, Other: camping equipment	1	0.26
Clothing, First Aid Kit, Food/Beverages, Other: groceries	1	0.26
Clothing, First Aid Kit, Food/Beverages, Other: spare parts/emergency items	1	0.26
Clothing, First Aid Kit, Food/Beverages, Other: tool kit	1	0.26
Clothing, First Aid Kit, Food/Beverages, Other: tools	1	0.26
Clothing, First Aid Kit, Food/Beverages, Other: tools, maps, clean-up towels	1	0.26

Clothing, First Aid Kit, Food/Beverages, Papers	8	2.11
Clothing, First Aid Kit, Food/Beverages, Papers, Other: MSF Training material	1	0.26
Clothing, First Aid Kit, Food/Beverages, Papers, Other: Tent, sleeping bag, stove	1	0.26
Clothing, First Aid Kit, Food/Beverages, Papers, Other: Tools	2	0.53
Clothing, First Aid Kit, Food/Beverages, Papers, Other: Tools and Camping Gear	1	0.26
Clothing, First Aid Kit, Food/Beverages, Papers, Other: extra gloves, raingear, tools	1	0.26
Clothing, First Aid Kit, Food/Beverages, Papers, Other: gloves	1	0.26
Clothing, First Aid Kit, Food/Beverages, Papers, Other: tire plug kit, bungee straps	1	0.26
Clothing, First Aid Kit, Food/Beverages, Papers, Other: took kit, emergency beacon, bungee cords	1	0.26
Clothing, First Aid Kit, Food/Beverages, Papers, Other: tools	4	1.05
Clothing, First Aid Kit, Food/Beverages, Papers, Other: tools, music intruments	1	0.26
Clothing, First Aid Kit, Food/Beverages, Papers, Other: tools, tire kit	1	0.26
Clothing, First Aid Kit, Other: Riding gear	1	0.26
Clothing, First Aid Kit, Other: Tire Pump, Straps, Tire Repair Kit	1	0.26
Clothing, First Aid Kit, Other: Tools	1	0.26
Clothing, First Aid Kit, Other: air pump	1	0.26
Clothing, First Aid Kit, Other: rain gear	1	0.26
Clothing, First Aid Kit, Other: road-trip related - clothes, rain gear, etc	1	0.26
Clothing, First Aid Kit, Other: tools	3	0.79
Clothing, First Aid Kit, Papers	5	1.32
Clothing, First Aid Kit, Papers, Other: Tools	1	0.26
Clothing, First Aid Kit, Papers, Other: Tools,cargo net	1	0.26
Clothing, First Aid Kit, Papers, Other: tools	1	0.26
Clothing, First Aid Kit, Papers, Other: tools, maps, meds	1	0.26
Clothing, Food/Beverages	18	4.74

Clothing, Food/Beverages, Other (does not specify)	1	0.26
Clothing, Food/Beverages, Other: Tools, Camera	1	0.26
Clothing, Food/Beverages, Other: Tools, Patch Kit	1	0.26
Clothing, Food/Beverages, Other: straps, tools	1	0.26
Clothing, Food/Beverages, Other: tools	2	0.53
Clothing, Food/Beverages, Papers	11	2.89
Clothing, Food/Beverages, Papers, Other: camping gear	1	0.26
Clothing, Food/Beverages, Papers, Other: groceries	1	0.26
Clothing, Food/Beverages, Papers, Other: maps, tools	1	0.26
Clothing, Food/Beverages, Papers, Other: tire repair kit, rainsuit, helmet bag	1	0.26
Clothing, Food/Beverages, Papers, Other: tools	3	0.79
Clothing, Food/Beverages, Purse	1	0.26
Clothing, Other: Camera Equipment	1	0.26
Clothing, Other: Groceries	1	0.26
Clothing, Other: Rain Gear	1	0.26
Clothing, Other: Rally camping gear	1	0.26
Clothing, Other: Toolkit,rainsuit	1	0.26
Clothing, Other: camping gear	1	0.26
Clothing, Other: rain gear, gloves	1	0.26
Clothing, Other: spare helmet	1	0.26
Clothing, Other: tools	2	0.53
Clothing, Other: tools, spare parts	1	0.26
Clothing, Papers, Other: bike regis. &insurance, flashlight	1	0.26
Clothing, Papers, Other: tools, cables, bungee cords	1	0.26
Computer, Clothing	5	1.32
Computer, Clothing, First Aid Kit	4	1.05
Computer, Clothing, First Aid Kit, Food/Beverages	7	1.84
Computer, Clothing, First Aid Kit, Food/Beverages, Other: Camping equipment	1	0.26
Computer, Clothing, First Aid Kit, Food/Beverages, Other: Camping gear	1	0.26
Computer, Clothing, First Aid Kit, Food/Beverages, Other: camera	1	0.26
Computer, Clothing, First Aid Kit, Food/Beverages, Other: rain suit, first aid kit, tire gauge	1	0.26
Computer, Clothing, First Aid Kit, Food/Beverages, Papers	2	0.53

Computer, Clothing, First Aid Kit, Food/Beverages, Papers, Other: Groceries	1	0.26
Computer, Clothing, First Aid Kit, Food/Beverages, Papers, Other: Repair materials and tools	1	0.26
Computer, Clothing, First Aid Kit, Food/Beverages, Papers, Other: Tool Kit, groceries	1	0.26
Computer, Clothing, First Aid Kit, Food/Beverages, Papers, Other: Tool, spare parts, etc.	1	0.26
Computer, Clothing, First Aid Kit, Food/Beverages, Papers, Other: briefcase	1	0.26
Computer, Clothing, First Aid Kit, Food/Beverages, Papers, Other: camera, maps	1	0.26
Computer, Clothing, First Aid Kit, Food/Beverages, Papers, Other: riding gear	1	0.26
Computer, Clothing, First Aid Kit, Food/Beverages, Papers, Other: tools, maps	1	0.26
Computer, Clothing, First Aid Kit, Food/Beverages, Papers, Other: tools, tire repair, rain suit	1	0.26
Computer, Clothing, First Aid Kit, Food/Beverages, Papers, Other: tools,firearms,tire repair kit	1	0.26
Computer, Clothing, First Aid Kit, Other: Rain Gear and cold weather gear	1	0.26
Computer, Clothing, First Aid Kit, Other: tools, patch kit	1	0.26
Computer, Clothing, First Aid Kit, Other: Tools	1	0.26
Computer, Clothing, First Aid Kit, Other: camping gear	2	0.53
Computer, Clothing, First Aid Kit, Other: tools	1	0.26
Computer, Clothing, First Aid Kit, Other: tools, maintenance items, teaching materials, extra gear	1	0.26
Computer, Clothing, First Aid Kit, Papers	2	0.53
Computer, Clothing, First Aid Kit, Papers, Other: tools	1	0.26
Computer, Clothing, Food/Beverages	2	0.53
Computer, Clothing, Food/Beverages, Other: tools	1	0.26
Computer, Clothing, Food/Beverages, Papers	5	1.32
Computer, Clothing, Food/Beverages, Papers, Other: Gear	1	0.26
Computer, Clothing, Other: Book bag	1	0.26
Computer, Clothing, Other: Cover	1	0.26
Computer, Clothing, Other: briefcase	1	0.26
Computer, Clothing, Other: security chain	1	0.26

Computer, Clothing, Other: work tools	1	0.26
Computer, First Aid Kit, Food/Beverages, Other: maps	1	0.26
Computer, First Aid Kit, Food/Beverages, Other: tools, raingear, spare shield	1	0.26
Computer, First Aid Kit, Food/Beverages, Papers	1	0.26
Computer, Food/Beverages	2	0.53
Computer, Food/Beverages, Papers	2	0.53
Computer, Food/Beverages, Papers, Other: tools	1	0.26
First Aid Kit, Other: Warm Weather Gear	1	0.26
First Aid Kit, Papers	3	0.79
First Aid Kit, Papers, Other: gloves, ball caps, leather vest, cleaners, cover, clothes	1	0.26
Food/Beverages	6	1.58
Food/Beverages, Other: maps & rain gear	1	0.26
Food/Beverages, Papers	2	0.53
Food/Beverages, Papers, Other: Tools	1	0.26
Other: Extra Helmet, Water, shopping purchases	1	0.26
Other: Misc.	1	0.26
Other: Work related items (Computer Desktop Support)	1	0.26
Other: i use a back pack to carry clothes	1	0.26
Other: items for travelling	1	0.26
Other: parts, manual, cloths, tools, tent sleeping bag	1	0.26
Other: rain gear	1	0.26
Other: riding clothing	1	0.26
Other: tools, flashlight, sweatshirt	1	0.26
Papers	2	0.53
Papers, Other: ticket books, laser, weather wear	1	0.26

Frequency Missing = 44

How often is the storage (e.g., luggage carriers or saddle bags) more than half full?	Frequency	Percent
A_Always	19	4.76
B_Almost Always	88	22.06
C_Sometimes	224	56.14
D_Rarely	49	12.28
E_Never	19	4.76

Frequency Missing = 25

Do you use any of the following aftermarket accessories on	Frequency	Percent

this motorcycle? (Select all that apply)		
Back rest	41	9.76
Back rest, Chain guard, Engine control chips or jets, Exhaust/muffler modification	1	0.24
Back rest, Chain guard, Engine control chips or jets, Exhaust/muffler modification, Fly Screen (smaller than a wind screen that protects clocks and offers some wind protection)	1	0.24
Back rest, Chain guard, Engine control chips or jets, Exhaust/muffler modification, Gas tank bib	2	0.48
Back rest, Chain guard, Engine control chips or jets, Exhaust/muffler modification, Gas tank bib, Motorcycle trailer	1	0.24
Back rest, Chain guard, Engine control chips or jets, Exhaust/muffler modification, Motorcycle trailer	1	0.24
Back rest, Chain guard, Engine control chips or jets, Front mudguards, Tinted windshield	1	0.24
Back rest, Chain guard, Exhaust/muffler modification	1	0.24
Back rest, Chain guard, Exhaust/muffler modification, Front mudguards, Suspension modification	1	0.24
Back rest, Chain guard, Exhaust/muffler modification, Gas tank bib	1	0.24
Back rest, Chain guard, Exhaust/muffler modification, Saddle bag guards (providing extra support to your saddle bags)	1	0.24
Back rest, Chain guard, Exhaust/muffler modification, Suspension modification	1	0.24
Back rest, Chain guard, Exhaust/muffler modification, Suspension modification, Tinted windshield	1	0.24
Back rest, Chain guard, Front mudguards, Saddle bag guards (providing extra support to your saddle bags)	1	0.24
Back rest, Chain guard, Suspension modification	1	0.24
Back rest, Engine control chips or jets, Exhaust/muffler modification	2	0.48
Back rest, Engine control chips or jets, Exhaust/muffler modification, Fly Screen (smaller than a wind screen that protects clocks and offers some wind protection)	1	0.24

Back rest, Engine control chips or jets, Exhaust/muffler modification, Gas tank bib, Motorcycle trailer	1	0.24
Back rest, Engine control chips or jets, Exhaust/muffler modification, Motorcycle trailer, Suspension modification	1	0.24
Back rest, Engine control chips or jets, Exhaust/muffler modification, Saddle bag guards (providing extra support to your saddle bags)	3	0.71
Back rest, Engine control chips or jets, Exhaust/muffler modification, Suspension modification	1	0.24
Back rest, Engine control chips or jets, Exhaust/muffler modification, Tinted windshield	1	0.24
Back rest, Engine control chips or jets, Gas tank bib, Motorcycle trailer, Saddle bag guards (providing extra support to your saddle bags)	1	0.24
Back rest, Exhaust/muffler modification	9	2.14
Back rest, Exhaust/muffler modification, Front mudguards	1	0.24
Back rest, Exhaust/muffler modification, Front mudguards, Motorcycle trailer, Suspension modification	1	0.24
Back rest, Exhaust/muffler modification, Gas tank bib	1	0.24
Back rest, Exhaust/muffler modification, Gas tank bib, Motorcycle trailer	1	0.24
Back rest, Exhaust/muffler modification, Gas tank bib, Motorcycle trailer, Saddle bag guards (providing extra support to your saddle bags)	1	0.24
Back rest, Exhaust/muffler modification, Gas tank bib, Saddle bag guards (providing extra support to your saddle bags)	2	0.48
Back rest, Exhaust/muffler modification, Gas tank bib, Suspension modification	1	0.24
Back rest, Exhaust/muffler modification, Motorcycle trailer	1	0.24
Back rest, Exhaust/muffler modification, Motorcycle trailer, Saddle bag guards (providing extra support to your saddle bags)	1	0.24
Back rest, Exhaust/muffler modification, Saddle bag guards (providing extra support to your saddle bags)	4	0.95
Back rest, Exhaust/muffler modification, Suspension modification	1	0.24
Back rest, Fly Screen (smaller than a wind screen that protects clocks and offers some wind protection)	5	1.19

Back rest, Front mudguards	3	0.71
Back rest, Front mudguards, Gas tank bib, Motorcycle trailer, Suspension modification	1	0.24
Back rest, Front mudguards, Motorcycle trailer	1	0.24
Back rest, Gas tank bib	6	1.43
Back rest, Gas tank bib, Motorcycle trailer	1	0.24
Back rest, Gas tank bib, Motorcycle trailer, Saddle bag guards (providing extra support to your saddle bags)	1	0.24
Back rest, Gas tank bib, Motorcycle trailer, Suspension modification	1	0.24
Back rest, Gas tank bib, Saddle bag guards (providing extra support to your saddle bags)	2	0.48
Back rest, Gas tank bib, Saddle bag guards (providing extra support to your saddle bags), Tinted windshield	1	0.24
Back rest, Gas tank bib, Tinted windshield	2	0.48
Back rest, Motorcycle trailer	7	1.67
Back rest, Rear hugger (keeps the undertail from getting damaged from debris), Front mudguards	1	0.24
Back rest, Rear hugger (keeps the undertail from getting damaged from debris), Front mudguards, Motorcycle trailer	1	0.24
Back rest, Saddle bag guards (providing extra support to your saddle bags)	3	0.71
Back rest, Saddle bag guards (providing extra support to your saddle bags), Suspension modification	1	0.24
Back rest, Suspension modification, Tinted windshield	1	0.24
Back rest, Tinted windshield	1	0.24
Chain guard	2	0.48
Chain guard, Do not use any of these	1	0.24
Chain guard, Engine control chips or jets	1	0.24
Chain guard, Engine control chips or jets, Exhaust/muffler modification	1	0.24
Chain guard, Engine control chips or jets, Exhaust/muffler modification, Fly Screen (smaller than a wind screen that protects clocks and offers some wind protection	1	0.24
Chain guard, Engine control chips or jets, Exhaust/muffler modification, Front mudguards, Motorcycle trailer	1	0.24

Chain guard, Engine control chips or jets, Exhaust/muffler modification, Motorcycle trailer, Suspension modification	1	0.24
Chain guard, Engine control chips or jets, Motorcycle trailer, Suspension modification	1	0.24
Chain guard, Exhaust/muffler modification	1	0.24
Chain guard, Exhaust/muffler modification, Gas tank bib	1	0.24
Chain guard, Exhaust/muffler modification, Tinted windshield	1	0.24
Chain guard, Fly Screen (smaller than a wind screen that protects clocks and offers some wind protection	2	0.48
Chain guard, Fly Screen, Front mudguards, Gas tank bib	1	0.24
Chain guard, Front mudguards	1	0.24
Chain guard, Gas tank bib	1	0.24
Chain guard, Gas tank bib, Tinted windshield	1	0.24
Chain guard, Motorcycle trailer, Saddle bag guards (providing extra support to your saddle bags)	1	0.24
Chain guard, Rear hugger (keeps the undertail from getting damaged from debris)	1	0.24
Chain guard, Rear hugger (keeps the undertail from getting damaged from debris), Engine control chips or jets	5	1.19
Chain guard, Rear hugger (keeps the undertail from getting damaged from debris), Exhaust/muffler modification	5	1.19
Chain guard, Rear hugger (keeps the undertail from getting damaged from debris), Front mudguards, Motorcycle trailer	1	0.24
Chain guard, Rear hugger (keeps the undertail from getting damaged from debris), Suspension modification	1	0.24
Do not use any of these	119	28.33
Engine control chips or jets	1	0.24
Engine control chips or jets, Exhaust/muffler modification	5	1.19
Engine control chips or jets, Exhaust/muffler modification, Fly Screen (smaller than a wind screen that protects clocks and offers some wind protection)	1	0.24
Engine control chips or jets, Exhaust/muffler modification, Front mudguards, Tinted windshield	1	0.24
Engine control chips or jets, Exhaust/muffler modification, Gas tank bib, Suspension modification	1	0.24
Engine control chips or jets, Exhaust/muffler modification, Gas tank bib, Suspension modification, Tinted windshield	1	0.24

Engine control chips or jets, Exhaust/muffler modification, Motorcycle trailer, Suspension modification	1	0.24
Engine control chips or jets, Exhaust/muffler modification, Suspension modification	4	0.95
Engine control chips or jets, Exhaust/muffler modification, Suspension modification, Tinted windshield	3	0.71
Engine control chips or jets, Exhaust/muffler modification, Tinted windshield	1	0.24
Engine control chips or jets, Front mudguards, Gas tank bib	1	0.24
Engine control chips or jets, Motorcycle trailer	1	0.24
Engine control chips or jets, Motorcycle trailer, Tinted windshield	1	0.24
Exhaust/muffler modification	22	5.24
Exhaust/muffler modification, Fly Screen (smaller than a wind screen that protects clocks and offers some wind protection)	1	0.24
Exhaust/muffler modification, Front mudguards, Gas tank bib, Suspension modification	1	0.24
Exhaust/muffler modification, Front mudguards, Tinted windshield	1	0.24
Exhaust/muffler modification, Gas tank bib	2	0.48
Exhaust/muffler modification, Gas tank bib, Saddle bag guards (providing extra support to your saddle bags)	1	0.24
Exhaust/muffler modification, Motorcycle trailer, Tinted windshield	1	0.24
Exhaust/muffler modification, Saddle bag guards (providing extra support to your saddle bags), Tinted windshield	1	0.24
Exhaust/muffler modification, Suspension modification	4	0.95
Exhaust/muffler modification, Suspension modification, Tinted windshield	1	0.24
Exhaust/muffler modification, Tinted windshield	3	0.71
Fly Screen (smaller than a wind screen that protects clocks and offers some wind protection)	7	1.67
Fly Screen (smaller than a wind screen that protects clocks and offers some wind protection), Gas tank bib	1	0.24
Fly Screen (smaller than a wind screen that protects clocks and offers some wind protection), Suspension modification	1	0.24

Front mudguards	3	0.71
Front mudguards, Gas tank bib, Tinted windshield	1	0.24
Front mudguards, Motorcycle trailer	1	0.24
Front mudguards, Motorcycle trailer, Suspension modification	1	0.24
Front mudguards, Saddle bag guards (providing extra support to your saddle bags)	1	0.24
Front mudguards, Suspension modification	2	0.48
Front mudguards, Suspension modification, Tail skirts	1	0.24
Front mudguards, Suspension modification, Tinted windshield	1	0.24
Front mudguards, Tail skirts	1	0.24
Gas tank bib	11	2.62
Gas tank bib, Motorcycle trailer	1	0.24
Gas tank bib, Saddle bag guards (providing extra support to your saddle bags)	1	0.24
Gas tank bib, Tinted windshield	3	0.71
Motorcycle trailer	7	1.67
Rear hugger (keeps the undertail from getting damaged from debris)	1	0.24
Rear hugger (keeps the undertail from getting damaged from debris), Engine control chips or jets, Exhaust/muffler modification	4	0.95
Rear hugger (keeps the undertail from getting damaged from debris), Exhaust/muffler modification	2	0.48
Rear hugger (keeps the undertail from getting damaged from debris), Exhaust/muffler modification, Front mudguards	1	0.24
Rear hugger (keeps the undertail from getting damaged from debris), Exhaust/muffler modification, Tinted windshield	1	0.24
Rear hugger (keeps the undertail from getting damaged from debris), Front mudguards	1	0.24
Rear hugger (keeps the undertail from getting damaged from debris), Gas tank bib, Motorcycle trailer	1	0.24
Rear hugger (keeps the undertail from getting damaged from debris), Suspension modification	1	0.24
Saddle bag guards (providing extra support to your saddle bags)	4	0.95

Saddle bag guards (providing extra support to your saddle bags), Suspension modification	2	0.48
Suspension modification	13	3.1
Suspension modification, Tinted windshield	1	0.24
Tinted windshield	3	0.71

Frequency Missing = 4

Do you use any of the following bike-to-bike radio systems on this motorcycle? (Select all that apply)	Frequency	Percent
CB	21	5.22
CB, FRS Radio	1	0.25
FRS Radio	11	2.74
Intercom	18	4.48
Intercom, CB	34	8.46
Intercom, CB, FRS Radio	8	1.99
Intercom, CB, Other: GPS, XM radio	1	0.25
Intercom, FRS Radio	9	2.24
Intercom, FRS Radio, Other: Ham	1	0.25
Intercom, Other: Portable intercom sometimes, MixIt2 always	1	0.25
Intercom, Other: Rider to Passenger	1	0.25
None	283	70.4
Other: AM/FM Radio	1	0.25
Other: Autocom	1	0.25
Other: Bluetooth	1	0.25
Other: Bluetooth Intercom from Blue Ant	1	0.25
Other: GMRS/FRS	1	0.25
Other: GPS	1	0.25
Other: GPS, XM radio	1	0.25
Other: Ham radio	2	0.5
Other: Scala Rider	2	0.5
Other: police portable radio	1	0.25
Other: radar detector	1	0.25

Frequency Missing = 22

Do you use a GPS on this motorcycle?	Frequency	Percent
No	221	52.74
Yes	198	47.26

Frequency Missing = 5

Do you use a cell phone while riding this motorcycle?	Frequency	Percent
No	371	87.91
Yes	51	12.09

Frequency Missing = 2

How often do you ride this motorcycle? (days, see next question for unit)	Frequency	Percent
0	1	0.24
1	24	5.8
2	50	12.08
3	60	14.49
4	54	13.04
5	63	15.22
6	36	8.7
7	35	8.45
9	1	0.24
10	18	4.35
12	1	0.24
13	2	0.48
14	2	0.48
15	13	3.14
17	1	0.24
20	11	2.66
23	1	0.24
24	1	0.24
25	2	0.48
28	1	0.24
30	4	0.97
40	1	0.24
45	1	0.24
50	4	0.97
60	3	0.72
70	1	0.24
75	1	0.24
95	1	0.24
100	5	1.21
150	1	0.24
200	4	0.97
220	1	0.24
225	1	0.24
240	1	0.24

270	1	0.24
300	4	0.97
350	1	0.24
355	1	0.24
365	1	0.24

Frequency Missing = 10

Per (week, month, or year)--from last question	Frequency	Percent
week	283	70.05
month	74	18.32
year	47	11.63

Frequency Missing = 20

Yearly value for how often ride	Frequency	Percent
0	1	0.25
2	1	0.25
3	1	0.25
4	1	0.25
10	2	0.5
12	1	0.25
13	1	0.25
18	1	0.25
20	4	1
24	2	0.5
26	1	0.25
30	5	1.25
34	2	0.5
35	1	0.25
36	4	1
39	8	2.01
40	3	0.75
43	3	0.75
45	1	0.25
48	6	1.5
49	1	0.25
50	4	1
52	12	3.01
55	1	0.25
60	15	3.76
69	3	0.75

70	1	0.25
72	1	0.25
75	1	0.25
77	6	1.5
80	6	1.5
86	7	1.75
90	3	0.75
95	2	0.5
100	6	1.5
103	31	7.77
104	1	0.25
108	1	0.25
116	6	1.5
120	13	3.26
129	6	1.5
135	1	0.25
138	6	1.5
140	1	0.25
142	1	0.25
144	1	0.25
150	2	0.5
151	2	0.5
155	31	7.77
160	1	0.25
168	2	0.5
172	8	2.01
180	9	2.26
181	1	0.25
187	1	0.25
192	1	0.25
194	6	1.5
200	4	1
206	31	7.77
215	4	1
220	1	0.25
225	2	0.5
232	3	0.75
237	1	0.25
240	4	1
241	1	0.25
258	35	8.77
270	1	0.25

271	5	1.25
276	1	0.25
300	5	1.25
301	2	0.5
310	22	5.51
331	1	0.25
336	1	0.25
350	1	0.25
355	1	0.25
361	22	5.51
365	1	0.25

Frequency Missing = 25

Category of average days ridden over last year	Frequency	Percent
Less than 100	112	26.42
100-199	138	32.55
200-299	93	21.93
300 or more	56	13.21
Unknown	25	5.9

Category of miles ridden over last year	Frequency	Percent
Less than 2000	64	15.09
2000-3999	81	19.1
4000-5999	67	15.8
6000-7999	46	10.85
8000-9999	43	10.14
10000-11999	35	8.25
12000-13999	25	5.9
14000-15999	20	4.72
16000-17999	4	0.94
18000-19999	10	2.36
20000 or more	19	4.48
Unknown	10	2.36

Approximately how many miles did you ride this motorcycle on road in the last 12 months?	Frequency	Percent
0	3	0.72
3	1	0.24
8	1	0.24
12	1	0.24

50	2	0.48
100	1	0.24
150	2	0.48
200	1	0.24
250	1	0.24
300	3	0.72
500	6	1.45
650	1	0.24
700	3	0.72
713	1	0.24
1000	19	4.59
1100	2	0.48
1200	3	0.72
1500	10	2.42
1600	1	0.24
1700	1	0.24
1800	1	0.24
2000	27	6.52
2100	1	0.24
2200	1	0.24
2300	2	0.48
2400	1	0.24
2500	9	2.17
2600	2	0.48
2710	1	0.24
2750	1	0.24
2800	1	0.24
2830	1	0.24
3000	21	5.07
3400	1	0.24
3500	12	2.9
4000	22	5.31
4100	1	0.24
4500	8	1.93
4600	2	0.48
4900	1	0.24
5000	29	7
5500	2	0.48
5600	1	0.24
5700	1	0.24
6000	17	4.11
6500	3	0.72

6700	1	0.24
7000	12	2.9
7150	1	0.24
7456	1	0.24
7500	9	2.17
7600	1	0.24
7800	1	0.24
8000	25	6.04
8228	1	0.24
8400	1	0.24
8500	2	0.48
8750	1	0.24
9000	11	2.66
9800	1	0.24
9950	1	0.24
10000	26	6.28
10318	1	0.24
10500	1	0.24
11000	6	1.45
11500	1	0.24
12000	19	4.59
12500	1	0.24
12700	1	0.24
13000	4	0.97
14000	2	0.48
14463	1	0.24
14800	1	0.24
15000	16	3.86
16000	1	0.24
17000	2	0.48
17500	1	0.24
18000	7	1.69
18700	1	0.24
19000	1	0.24
19400	1	0.24
20000	7	1.69
21000	1	0.24
22000	2	0.48
25000	4	0.97
26000	1	0.24
30000	1	0.24
36000	1	0.24

40000	2	0.48

Frequency Missing = 10

Approximately how many miles did you drive a car in the last 12 months?	Frequency	Percent
0	9	2.18
2	1	0.24
50	2	0.49
100	1	0.24
150	3	0.73
200	2	0.49
300	1	0.24
500	4	0.97
700	1	0.24
900	1	0.24
1000	9	2.18
1200	1	0.24
1300	1	0.24
1500	6	1.46
1600	1	0.24
2000	11	2.67
2500	3	0.73
3000	21	5.1
3200	1	0.24
3500	1	0.24
3900	1	0.24
4000	18	4.37
4500	2	0.49
4800	1	0.24
5000	25	6.07
5300	1	0.24
6000	23	5.58
7000	4	0.97
7456	1	0.24
7500	1	0.24
8000	18	4.37
9000	7	1.7
9600	1	0.24
10000	50	12.14
11000	8	1.94
12000	35	8.5
12427	1	0.24

13000	3	0.73
14000	8	1.94
15000	48	11.65
16000	5	1.21
17000	1	0.24
18000	4	0.97
20000	25	6.07
20500	1	0.24
22000	2	0.49
24000	2	0.49
25000	7	1.7
26000	2	0.49
27000	1	0.24
30000	15	3.64
31069	1	0.24
32000	1	0.24
35000	3	0.73
40000	3	0.73
45000	2	0.49
60000	1	0.24

Frequency Missing = 12

Do you have a riding season?	Frequency	Percent
No, I ride all year.	241	57.52
Yes	178	42.48

Frequency Missing = 5

Approximately what month do you begin your riding season, if any?	Frequency	Percent
February	9	5.03
March	83	46.37
April	66	36.87
May	18	10.06
June	1	0.56
November	2	1.12

Frequency Missing = 245

Approximately what month do you end your riding season, if any?	Frequency	Percent
January	5	2.81
September	7	3.93

October	42	23.6
November	90	50.56
December	34	19.1

Frequency Missing = 246

Number of beg month of riding season (Jan=1, etc.)	Frequency	Percent
2	9	5.03
3	83	46.37
4	66	36.87
5	18	10.06
6	1	0.56
11	2	1.12

Frequency Missing = 245

Number of end month of riding season (Jan=1, etc.)	Frequency	Percent
1	5	2.81
9	7	3.93
10	42	23.6
11	90	50.56
12	34	19.1

Frequency Missing = 246

Total number of months in riding season	Frequency	Percent
2	2	0.48
5	4	0.95
6	12	2.86
7	25	5.97
8	51	12.17
9	46	10.98
10	31	7.4
11	7	1.67
12	241	57.52

Frequency Missing = 5

Do you spend more time riding on weekdays or weekends?	Frequency	Percent
I ride on weekends and weekdays equally.	225	53.44
Weekdays	77	18.29
Weekends	119	28.27

Frequency Missing = 3

Which of the following best describes your riding?	Frequency	Percent
I commute on a motorcycle at least once a week during my riding season; I also ride for pleasure.	219	52.14
I commute on a motorcycle at least once a week during my riding season; I do not ride specifically for pleasure.	12	2.86
I sometimes ride to commute, but not consistently. I also ride sometimes for pleasure.	72	17.14
I ride mostly for pleasure; I rarely commute on a motorcycle.	117	27.86

Frequency Missing = 4

How often do you ride after dark?	Frequency	Percent
A_Very frequently	54	12.86
B_Frequently	112	26.67
C_Sometimes	157	37.38
D_Rarely	91	21.67
E_Never	6	1.43

Frequency Missing = 4

Which of the following describes most of the miles in which you typically ride?	Frequency	Percent
Mostly rural (generally one lane in each direction, infrequent stop lights, some stop signs, other traffic occasionally)	155	36.99
Mostly urban (frequent stop lights, turn lanes, traffic entering from side streets, interacting with other traffic while riding)	74	17.66
Suburban (miles are a roughly equal mix of urban and rural)	190	45.35

Frequency Missing = 5

What type of roads do you ride most frequently?	Frequency	Percent
2-way roads (one lane in each direction)	274	65.87
Multilane roads (multiple lanes in each direction)	142	34.13

Frequency Missing = 8

During your last riding season (or last year if you ride all year),	Frequency	Percent

how many of your rides were for commuting to and from work, running errands, etc?		
A_All	3	0.72
B_Most	170	40.67
C_Some	144	34.45
D_Few	75	17.94
E_None	26	6.22

Frequency Missing = 6

During your last riding season (or last year if you ride all year), how many of your rides were for pleasure only?	Frequency	Percent
A_All	29	6.94
B_Most	153	36.6
C_Some	179	42.82
D_Few	56	13.4
E_None	1	0.24

Frequency Missing = 6

How many days a week do you commute on your motorcycle? (If you select “0”, please skip next 4 questions)	Frequency	Percent
0	103	25.31
1	53	13.02
2	41	10.07
3	57	14
4	57	14
5	87	21.38
6	5	1.23
7	4	0.98

Frequency Missing = 17

How many minutes is your commute (one way)?	Frequency	Percent
1	1	0.32
2	2	0.64
4	1	0.32
5	8	2.57
6	3	0.96
7	4	1.29
8	2	0.64
9	1	0.32

10	23	7.4
11	2	0.64
12	3	0.96
13	2	0.64
14	1	0.32
15	59	18.97
16	2	0.64
18	1	0.32
19	1	0.32
20	35	11.25
25	20	6.43
30	41	13.18
35	22	7.07
40	18	5.79
42	1	0.32
45	27	8.68
50	9	2.89
52	1	0.32
53	1	0.32
55	2	0.64
60	8	2.57
65	1	0.32
70	1	0.32
75	2	0.64
80	2	0.64
90	2	0.64
95	1	0.32
120	1	0.32

Frequency Missing = 113

How many miles is your commute (one way)?	Frequency	Percent
0	2	0.65
1	5	1.61
2	12	3.87
3	10	3.23
4	4	1.29
5	22	7.1
6	12	3.87
7	8	2.58
8	17	5.48
9	3	0.97

10	25	8.06
11	8	2.58
12	12	3.87
13	7	2.26
14	2	0.65
15	13	4.19
16	3	0.97
17	5	1.61
18	10	3.23
19	3	0.97
20	21	6.77
21	1	0.32
22	6	1.94
23	5	1.61
24	1	0.32
25	14	4.52
26	7	2.26
27	5	1.61
28	2	0.65
29	1	0.32
30	18	5.81
31	2	0.65
32	3	0.97
33	1	0.32
35	9	2.9
37	2	0.65
40	6	1.94
42	2	0.65
45	4	1.29
46	2	0.65
47	1	0.32
50	5	1.61
52	1	0.32
53	1	0.32
55	1	0.32
70	1	0.32
75	1	0.32
85	1	0.32
87	1	0.32
90	1	0.32
100	1	0.32

Frequency Missing = 114

Where do you park your motorcycle at work?	Frequency	Percent
Garage	29	9.32
Ground level parking lot	197	63.34
Other: Back of the building under the covered load	1	0.32
Other: Covered parking area	1	0.32
Other: In my classroom	1	0.32
Other: anywhere	1	0.32
Other: bike rack area	1	0.32
Other: concrete PAD FOR MOTORCYCLES	1	0.32
Other: concrete pad by building	1	0.32
Other: in the woods, i'm a forester	1	0.32
Other: inside Defence facility	1	0.32
Other: job premises	1	0.32
Other: next to building	1	0.32
Other: next to front door at work under large awning	1	0.32
Other: off street parking lot	1	0.32
Other: parking lot	3	0.96
Other: secure internal parking	1	0.32
Other: shipping yard	1	0.32
Other: sometimes street, sometimes parking lot	1	0.32
Parking structure/deck	29	9.32
Street parking	37	11.9

Frequency Missing = 113

Do you cover your bike at work?	Frequency	Percent
No	287	91.11
Yes	28	8.89

Frequency Missing = 109

For the trips you take most frequently, how long does it take you to get to your destination?	Frequency	Percent
Less than ½ day	182	44.17
½ day to 1 full day	180	43.69
Multiple days	50	12.14

Frequency Missing = 12

For a common trip you took for pleasure, how many miles do you ride?	Frequency	Percent
0	1	0.24

1	1	0.24
10	1	0.24
15	3	0.72
20	7	1.67
25	4	0.96
30	10	2.39
35	1	0.24
40	5	1.2
45	2	0.48
50	23	5.5
60	6	1.44
65	1	0.24
70	5	1.2
75	8	1.91
80	7	1.67
88	1	0.24
90	1	0.24
95	1	0.24
100	47	11.24
120	10	2.39
123	1	0.24
125	2	0.48
135	1	0.24
140	3	0.72
150	33	7.89
160	2	0.48
175	1	0.24
180	2	0.48
186	1	0.24
190	2	0.48
200	59	14.11
225	2	0.48
236	1	0.24
250	16	3.83
275	1	0.24
280	1	0.24
300	40	9.57
330	1	0.24
350	9	2.15
375	1	0.24
400	11	2.63
450	2	0.48

500	19	4.55
571	1	0.24
600	5	1.2
621	1	0.24
650	1	0.24
700	1	0.24
800	4	0.96
1000	8	1.91
1133	1	0.24
1200	4	0.96
1400	1	0.24
1500	6	1.44
1600	1	0.24
2000	10	2.39
2300	1	0.24
2500	3	0.72
3000	6	1.44
3500	3	0.72
4000	2	0.48
4200	1	0.24
4500	1	0.24
5300	1	0.24

Frequency Missing = 6

On average, how many miles did you ride each day?	Frequency	Percent
0	3	0.74
1	2	0.5
4	1	0.25
5	1	0.25
6	1	0.25
9	1	0.25
10	6	1.49
15	7	1.73
19	1	0.25
20	9	2.23
25	8	1.98
28	1	0.25
30	8	1.98
38	1	0.25
40	3	0.74
45	1	0.25

50	19	4.7
55	2	0.5
60	12	2.97
65	2	0.5
70	5	1.24
75	6	1.49
80	2	0.5
92	1	0.25
100	20	4.95
120	4	0.99
125	1	0.25
133	1	0.25
140	2	0.5
150	17	4.21
160	1	0.25
175	1	0.25
200	37	9.16
220	2	0.5
225	3	0.74
240	1	0.25
249	1	0.25
250	23	5.69
260	1	0.25
275	5	1.24
300	35	8.66
303	1	0.25
320	1	0.25
350	25	6.19
370	1	0.25
375	2	0.5
380	2	0.5
400	30	7.43
420	1	0.25
450	8	1.98
500	39	9.65
550	3	0.74
600	14	3.47
621	1	0.25
650	1	0.25
700	6	1.49
750	2	0.5
800	3	0.74

900	4	0.99
1000	2	0.5

Frequency Missing = 20

How many miles is the most you rode in one day?	Frequency	Percent
1	1	0.25
20	1	0.25
25	1	0.25
30	1	0.25
45	1	0.25
50	3	0.74
60	3	0.74
65	1	0.25
75	2	0.49
85	1	0.25
100	5	1.23
120	6	1.47
125	3	0.74
140	4	0.98
150	10	2.46
175	1	0.25
180	1	0.25
200	20	4.91
210	1	0.25
220	3	0.74
240	3	0.74
250	18	4.42
270	1	0.25
275	2	0.49
300	26	6.39
325	3	0.74
330	2	0.49
348	1	0.25
350	12	2.95
360	2	0.49
375	2	0.49
380	2	0.49
400	16	3.93
406	1	0.25
415	1	0.25
422	1	0.25

425	3	0.74
450	16	3.93
458	1	0.25
460	1	0.25
470	1	0.25
472	1	0.25
480	1	0.25
490	1	0.25
500	29	7.13
520	1	0.25
550	11	2.7
560	2	0.49
575	1	0.25
580	1	0.25
585	1	0.25
590	1	0.25
600	25	6.14
625	1	0.25
650	11	2.7
663	1	0.25
675	3	0.74
680	3	0.74
700	15	3.69
710	2	0.49
712	1	0.25
720	1	0.25
746	1	0.25
750	11	2.7
800	13	3.19
801	1	0.25
850	6	1.47
860	3	0.74
870	1	0.25
875	1	0.25
900	11	2.7
910	1	0.25
935	1	0.25
950	2	0.49
960	1	0.25
983	1	0.25
990	1	0.25
1000	11	2.7

1004	1	0.25
1007	1	0.25
1009	1	0.25
1012	1	0.25
1028	1	0.25
1035	1	0.25
1050	3	0.74
1052	1	0.25
1067	1	0.25
1070	1	0.25
1090	1	0.25
1100	14	3.44
1142	1	0.25
1150	1	0.25
1176	1	0.25
1200	5	1.23
1250	1	0.25
1300	2	0.49
1500	4	0.98
1525	1	0.25
1535	1	0.25

Frequency Missing = 17

What is the longest ride you expect to do in the next year? (days)	Frequency	Percent
0	3	0.79
1	59	15.49
2	54	14.17
3	35	9.19
4	41	10.76
5	40	10.5
6	16	4.2
7	33	8.66
8	14	3.67
9	3	0.79
10	25	6.56
11	1	0.26
12	1	0.26
14	23	6.04
15	5	1.31
16	2	0.52
18	2	0.52

20	4	1.05
21	7	1.84
25	1	0.26
28	1	0.26
30	5	1.31
31	1	0.26
35	1	0.26
60	2	0.52
150	1	0.26
180	1	0.26

Frequency Missing = 43

What is the longest ride you expect to do in the next year? (miles)	Frequency	Percent
0	1	0.27
10	1	0.27
50	2	0.53
70	1	0.27
75	1	0.27
78	1	0.27
80	1	0.27
100	6	1.6
150	5	1.33
160	2	0.53
200	16	4.26
240	1	0.27
250	7	1.86
300	18	4.79
350	2	0.53
360	1	0.27
380	1	0.27
400	9	2.39
450	3	0.8
480	1	0.27
500	15	3.99
550	1	0.27
600	12	3.19
650	1	0.27
700	2	0.53
750	4	1.06
800	9	2.39
900	4	1.06

1000	31	8.24
1100	1	0.27
1200	16	4.26
1300	2	0.53
1400	2	0.53
1500	25	6.65
1600	7	1.86
1700	1	0.27
1800	5	1.33
1900	1	0.27
2000	33	8.78
2100	3	0.8
2200	1	0.27
2300	1	0.27
2400	3	0.8
2500	15	3.99
2700	1	0.27
2800	1	0.27
3000	16	4.26
3500	13	3.46
4000	15	3.99
4300	1	0.27
4500	2	0.53
4971	1	0.27
5000	22	5.85
5500	2	0.53
6000	8	2.13
7000	5	1.33
7500	3	0.8
8000	3	0.8
10000	3	0.8
10266	1	0.27
11000	2	0.53
12000	1	0.27
20000	1	0.27

Frequency Missing = 48

How long do you normally ride for before taking a break (hours)?	Frequency	Percent
0.5	2	0.48
1	58	13.91
1.5	109	26.14

2	122	29.26
2.5	66	15.83
3	40	9.59
3.5	6	1.44
4	11	2.64
4.5	1	0.24
5	2	0.48

Frequency Missing = 7

How often do you have a passenger on your motorcycle when taking trips for pleasure?	Frequency	Percent
A_Always	10	2.39
B_Almost Always	48	11.48
C_Sometimes	94	22.49
D_Rarely	146	34.93
E_Never	120	28.71

Frequency Missing = 6

How did you learn to ride? (Select all that apply)	Frequency	Percent
Other: all of the above	1	0.24
Taught by family member/friend	40	9.55
Taught by family member/friend, Training course	16	3.82
Taught by family member/friend, Training course, Other: Books such as Proficient Motorcycling	1	0.24
Taught self	137	32.7
Taught self, Other: ERC	1	0.24
Taught self, Other: Racing school	1	0.24
Taught self, Other: Roadcraft in UK	1	0.24
Taught self, Other: also MSF courses over the years	1	0.24
Taught self, Other: rode bicycles heavily since 10 yrs old	1	0.24
Taught self, Taught by family member/friend	14	3.34
Taught self, Taught by family member/friend, Training course	21	5.01
Taught self, Taught by family member/friend, Training course, Other: good books	1	0.24
Taught self, Taught by family member/friend, Training course, Other: many books in my library, David	1	0.24

Taught self, Taught by family member/friend, Training course, Other: rider safety	1	0.24
Taught self, Training course	68	16.23
Taught self, Training course, Other: ERC	1	0.24
Taught self, Training course, Other: ERC twice	1	0.24
Taught self, Training course, Other: First self-taught, then later, course-taught	1	0.24
Taught self, Training course, Other: MSF Experienced Rider Course	1	0.24
Taught self, Training course, Other: racing	1	0.24
Taught self, Training course, Other: track days	1	0.24
Training course	105	25.06
Training course, Other: DVD Pointers	1	0.24
Training course, Other: Illinois MSF	1	0.24

Frequency Missing = 5

Have you taken a motorcycle training course (e.g., Motorcycle Safety Foundation)?	Frequency	Percent
No	115	27.58
Yes	302	72.42

Frequency Missing = 7

Level of certification (0=lowest), based on motorcycle related certifications in addition to rider's license/permit/endorsement	Frequency	Percent
0	104	24.53
1	132	31.13
2	55	12.97
3	51	12.03
4	45	10.61
5	13	3.07
6	17	4.01
7	7	1.65

Estimate how many separate occasions in the last year you practiced hard braking or swerving on your street bike (e.g., going to a parking lot and practicing hard braking)?	Frequency	Percent
0	85	20.33
1	26	6.22
2	45	10.77

3	37	8.85
4	22	5.26
5	29	6.94
6	15	3.59
7	4	0.96
8	8	1.91
9	1	0.24
10	45	10.77
11	1	0.24
12	7	1.67
14	2	0.48
15	8	1.91
18	1	0.24
20	82	19.62

Frequency Missing = 6

Estimate how many stunt type maneuvers you did in the last year (e.g., wheelies, stoppies, burnouts) on your street bike?	Frequency	Percent
0	364	86.67
1	15	3.57
2	10	2.38
3	4	0.95
4	3	0.71
5	7	1.67
10	1	0.24
12	1	0.24
13	1	0.24
15	1	0.24
16	1	0.24
20	12	2.86

Frequency Missing = 4

Which of the following best describes your motorcycle maintenance?	Frequency	Percent
A_I perform all the maintenance on my motorcycle.	124	29.59
B_I perform the maintenance up to my ability and bring my motorcycle to a shop when necessary.	249	59.43
C_I always bring my motorcycle to the shop for maintenance.	46	10.98

Frequency Missing = 5

How often do you charge your motorcycle battery?	Frequency	Percent
A_During long breaks (e.g., winter)	214	51.44
B_Occasionally for other reasons (e.g., trouble starting, left lights/ignition on)	109	26.2
C_Never	92	22.12
D_On a Battery tender	1	0.24

Frequency Missing = 8

How often do you examine the braking system before you ride?	Frequency	Percent
A_Always	78	18.62
B_Almost Always	115	27.45
C_Sometimes	134	31.98
D_Rarely	77	18.38
E_Never	15	3.58

Frequency Missing = 5

How often do you examine the tire condition before you ride?	Frequency	Percent
A_Always	135	32.3
B_Almost Always	165	39.47
C_Sometimes	99	23.68
D_Rarely	18	4.31
E_Never	1	0.24

Frequency Missing = 6

How often do you examine the function of the headlight, turning signal, and braking light before you ride?	Frequency	Percent
A_Always	106	25.42
B_Almost Always	126	30.22
C_Sometimes	131	31.41
D_Rarely	44	10.55
E_Never	10	2.4

Frequency Missing = 7

What type of protective gear do you wear on a regular basis?(Select all that apply)	Frequency	Percent
Goggles, Gloves, Jacket, Pants	1	0.24

Helmet	2	0.48
Helmet, Face shield	2	0.48
Helmet, Face shield, Gloves	2	0.48
Helmet, Face shield, Gloves, Jacket	54	12.86
Helmet, Face shield, Gloves, Jacket, Pants	153	36.43
Helmet, Face shield, Gloves, Jacket, Pants, Riding suit	51	12.14
Helmet, Face shield, Gloves, Jacket, Riding suit	3	0.71
Helmet, Face shield, Gloves, Pants	3	0.71
Helmet, Face shield, Gloves, Riding suit	22	5.24
Helmet, Face shield, Goggles	1	0.24
Helmet, Face shield, Goggles, Gloves, Jacket	4	0.95
Helmet, Face shield, Goggles, Gloves, Jacket, Pants	17	4.05
Helmet, Face shield, Goggles, Gloves, Jacket, Pants, Riding suit	7	1.67
Helmet, Face shield, Goggles, Gloves, Riding suit	1	0.24
Helmet, Face shield, Goggles, Jacket, Pants	1	0.24
Helmet, Face shield, Jacket	1	0.24
Helmet, Face shield, Jacket, Pants	1	0.24
Helmet, Face shield, gloves, Jacket	1	0.24
Helmet, Face shield, gloves, jacket, pants	1	0.24
Helmet, Face shield, gloves, pants, riding suit	1	0.24
Helmet, Face shield, goggles, gloves, jacket, pants	1	0.24
Helmet, Gloves	4	0.95
Helmet, Gloves, Jacket	17	4.05
Helmet, Gloves, Jacket, Pants	14	3.33
Helmet, Gloves, Jacket, Pants, Riding suit	5	1.19
Helmet, Gloves, Jacket, Riding suit	2	0.48
Helmet, Gloves, Pants	2	0.48
Helmet, Goggles	2	0.48
Helmet, Goggles, Gloves	5	1.19
Helmet, Goggles, Gloves, Jacket	10	2.38
Helmet, Goggles, Gloves, Jacket, Pants	13	3.1
Helmet, Goggles, Gloves, Pants	1	0.24
Helmet, Goggles, Jacket	2	0.48
Helmet, Goggles, Jacket, Pants	1	0.24
Helmet, Goggles, Pants	4	0.95
Helmet, Jacket	3	0.71
Helmet, Jacket, Pants	1	0.24
Helmet, Pants	1	0.24
Hemet, Face shield, Gloves, Jacket, Pants, Riding suit	1	0.24

Pants	1	0.24
Riding Suit	1	0.24

Frequency Missing = 4

How often do you wear bright/colorful clothing?	Frequency	Percent
A_Always	101	24.28
B_Almost Always	83	19.95
C_Sometimes	92	22.12
D_Rarely	90	21.63
E_Never	50	12.02

Frequency Missing = 8

How often do you wear reflective clothing?	Frequency	Percent
A_Always	166	39.81
B_Almost Always	86	20.62
C_Sometimes	80	19.18
D_Rarely	41	9.83
E_Never	44	10.55

Frequency Missing = 7

How often do you wear boots?	Frequency	Percent
A_Always	279	66.59
B_Almost Always	83	19.81
C_Sometimes	33	7.88
D_Rarely	15	3.58
E_Never	9	2.15

Frequency Missing = 5

How often do you wear a helmet?	Frequency	Percent
A_Always	396	94.51
B_Almost Always	20	4.77
C_Sometimes	2	0.48
E_Never	1	0.24

Frequency Missing = 5

How many helmets do you own?	Frequency	Percent
1	75	17.9

2	128	30.55
3	112	26.73
4	53	12.65
5	23	5.49
6	10	2.39
7	5	1.19
8	9	2.15
9	1	0.24
14	1	0.24
15	1	0.24
20	1	0.24

Frequency Missing = 5

What type of helmet do you wear most often while riding?	Frequency	Percent
Do not wear a helmet	1	0.24
Half shell	34	8.15
Three quarter shell	39	9.35
Full-face	343	82.25

Frequency Missing = 7

Do you wear a helmet when riding in states which don't require helmet use?	Frequency	Percent
N/A	1	0.24
No	8	1.92
Yes	407	97.84

Frequency Missing = 8

Have you ever crashed (i.e., any type of crash -- accidently laid your bike down while moving or ran into something or struck by another vehicle/animal)? (Please skip the next 7 questions if you answer "No.")	Frequency	Percent
No	115	27.38
Yes	305	72.62

Frequency Missing = 4

If so, how many times have you crashed?	Frequency	Percent
0	115	28.82
1	117	29.32

2	67	16.79
3	50	12.53
4	18	4.51
5	13	3.26
6	4	1
7	5	1.25
8	2	0.5
10	6	1.5
12	1	0.25
20	1	0.25

Frequency Missing = 25

How many vehicles, besides your own, were involved?	Frequency	Percent
0	188	62.88
1	95	31.77
2	16	5.35

Frequency Missing = 125

Did it involve a pedestrian?	Frequency	Percent
No	301	98.69
Yes	4	1.31

Frequency Missing = 119

If so, how many?	Frequency	Percent
1	4	100

Frequency Missing = 420

Who was at fault?	Frequency	Percent
No-fault crash	26	8.58
Other driver	72	23.76
Pedestrian	3	0.99
Road condition (includes wet, gravel, potholes)	66	21.78
You, as the motorcycle rider (i.e., motorcycle driver)	136	44.88

Frequency Missing = 121

Where did it take place?	Frequency	Percent
Curve/bend	89	30.48

Curve/bend/Other: Field	1	0.34
Gas Station	1	0.34
Intersection	84	28.77
Other: 6" of mud on a dirt road in OK	1	0.34
Other: at the track	1	0.34
Other: back alley - gate	1	0.34
Other: back road	1	0.34
Other: back street	1	0.34
Other: bike Course	1	0.34
Other: bridge	1	0.34
Other: city street	3	1.03
Other: country road	1	0.34
Other: country road Farm Dog	1	0.34
Other: curve around top of hill	1	0.34
Other: deep sand, forest road	1	0.34
Other: deer's head	1	0.34
Other: divided roadway median	1	0.34
Other: driveway	6	2.05
Other: entrance to business	1	0.34
Other: expansion joint on San Francisco Bay bridge	1	0.34
Other: expressway	2	0.68
Other: freeway	1	0.34
Other: garage	2	0.68
Other: grass	1	0.34
Other: gravel road	1	0.34
Other: heavy commuting traffic	1	0.34
Other: highway	3	1.03
Other: highway entering town	1	0.34
Other: hit a deer	1	0.34
Other: home	1	0.34
Other: in front of my house	1	0.34
Other: in line	1	0.34
Other: interstate	4	1.37
Other: interstate on ramp	2	0.68
Other: just past an intersection	1	0.34
Other: leaf covered culvert at trail/road interface	1	0.34
Other: leaving a parking lot	1	0.34
Other: mountain side dirt trail	1	0.34
Other: muddy driveway	1	0.34
Other: multi-lane commuter route (straight)	1	0.34
Other: my front drive	1	0.34
Other: my yard	1	0.34

Other: near driveway	1	0.34
Other: off ramp	1	0.34
Other: off road	3	1.03
Other: off road or on MX track	1	0.34
Other: over a hill	1	0.34
Other: parked car	1	0.34
Other: parking area	1	0.34
Other: parking lot	11	3.77
Other: parking lot or off-road	1	0.34
Other: parking lot practicing the MSF course	1	0.34
Other: parking lot/motorcycle range	1	0.34
Other: parking lot,wet yard	1	0.34
Other: practice course at the DMV	1	0.34
Other: private driveway	1	0.34
Other: pull out from gas station	1	0.34
Other: race track	4	1.37
Other: race track and street	1	0.34
Other: red light	1	0.34
Other: rural	1	0.34
Other: school zone	1	0.34
Other: shoulder	1	0.34
Other: sidewalk	1	0.34
Other: steep rocky slope, covered with scorpions, in the campground of the damned	1	0.34
Other: stop sign	1	0.34
Other: straight	2	0.68
Other: straight dirt road	1	0.34
Other: straight freeway	1	0.34
Other: straight line by traffic light	1	0.34
Other: straight line riding	1	0.34
Other: straight road	4	1.37
Other: straight road, car turned left in front of me.	1	0.34
Other: straight stretch of road	1	0.34
Other: straightaway	1	0.34
Other: straight, flat, rural road	1	0.34
Other: tight u-turn in empty street	1	0.34
Other: training facility	1	0.34
Other: two-lane blacktop	1	0.34
Other: two-lane highway	1	0.34
Other: two-lane road	1	0.34
Other: two-lane road at acrosswalk	1	0.34

Other: two-lane street	1	0.34
Other: u-turn on lane road	1	0.34
Other: unpaved/gravel Forest Service Road	1	0.34
Other: widening of the road/new lane	1	0.34

Frequency Missing = 132

Were you speeding?	Frequency	Percent
No	263	88.26
Yes	35	11.74

Frequency Missing = 126

What is your level of interest in participating in an on-road study exploring motorcycle riding behaviors and rider performance?	Frequency	Percent
0	7	1.69
1	13	3.13
2	14	3.37
3	36	8.67
4	45	10.84
5	300	72.29

Frequency Missing = 9

What is your willingness to let a research institute temporarily install small sensors and cameras on your motorcycle for a period of time (e.g., weeks or months)?	Frequency	Percent
0	23	5.52
1	18	4.32
2	22	5.28
3	41	9.83
4	51	12.23
5	262	62.83

Frequency Missing = 7

Would you be willing to wear a helmet provided by a research institute?	Frequency	Percent
0	13	3.12
1	25	6
2	13	3.12
3	53	12.71

4	58	13.91
5	255	61.15

Frequency Missing = 7

Would you be willing to allow a research institute to temporarily attach small sensors or cameras to your helmet?	Frequency	Percent
0	17	4.09
1	21	5.05
2	15	3.61
3	52	12.5
4	50	12.02
5	261	62.74

Frequency Missing = 8

Would you be willing to have a detachable cable from your helmet to your motorcycle similar to what is used for motorcycle intercoms?	Frequency	Percent
0	20	4.81
1	27	6.49
2	25	6.01
3	43	10.34
4	40	9.62
5	261	62.74

Frequency Missing = 8

What pay would be acceptable per month to attain your participation in research in which small data acquisition hardware was mounted on your motorcycle for one riding season?	Frequency	Percent
0	82	24.4
1	10	2.98
5	3	0.89
10	8	2.38
20	6	1.79
25	6	1.79
30	5	1.49
35	1	0.3
40	1	0.3
45	2	0.6
50	26	7.74

50, make offer	1	0.3
50-100	1	0.3
75	5	1.49
100	56	16.67
150	5	1.49
1-200	1	0.3
200	14	4.17
250	5	1.49
300	6	1.79
400	1	0.3
500	13	3.87
800	2	0.6
1000	4	1.19
1500	1	0.3
5050	1	0.3
1,000,000	2	0.6
1.00E+28	1	0.3
Depends on how much non-riding time is required.	1	0.3
Depends on what is needed	1	0.3
anything	8	2.38
anything, 0	3	0.89
depends	1	0.3
depends, perhaps 0	1	0.3
fair rate	1	0.3
gas	1	0.3
negotiable	12	3.57
reasonable	1	0.3
small	1	0.3
unknown	35	10.42
what you think is fair	1	0.3

Frequency Missing = 88

Where did you hear about this survey?	Frequency	Percent
I read about it on a website.	60	17.09
I received it in an e-mail from a group.	162	46.15
It was forwarded to me by an individual.	95	27.07
other: Club site	1	0.28
other: Ducati forum	1	0.28
other: Ducati.ms	2	0.57
other: IBMWR.ORG	1	0.28
other: MSF	8	2.28

other: MSF Communications	1	0.28
other: MSF Forwarded the announcment	1	0.28
other: MSF e-mail	2	0.57
other: MSF email forum	1	0.28
other: MSF instructor website	1	0.28
other: MSF staff member	1	0.28
other: SABMAG	1	0.28
other: SABMAG list group	1	0.28
other: SABMAG.Org	1	0.28
other: Ventureriderorg	5	1.42
other: forum	1	0.28
other: forwarded by wife	1	0.28
other: moto club member	1	0.28
other: racers forum	1	0.28
other: saw it in a thread on Beginnerbikers.org	1	0.28
other: www.motociclism.ro	1	0.28

Frequency Missing = 73

This research institute is considering conducting an on-road study exploring motorcycle riding behaviors and rider performance. If you are possibly interested in participating, would it be okay to contact you?	Frequency	Percent
NA	2	0.48
No	58	13.94
Yes	356	85.58

Frequency Missing = 8