Insights into Motorcycle Riders' Training, Behaviors, and Road Safety Practices: A Survey Study among Motorcycle Enthusiasts

Sahid A. KAMID[a], Glenn Simon D. LATONERO[b], Sandy Mae A. GASPAY[c], Cheryl M. BRIDES[d]

[a,b,d] *National Center for Transportation Studies, University of the Philippines Diliman 1101, Quezon City, Philippines*
[c] *Institute of Civil Engineering, College of Engineering, University of the Philippines Diliman, Quezon City, Philippines*
[a] *E-mail: sakamid@up.edu.ph*
[b] *E-mail: gdlatonero@up.edu.ph*
[c] *E-mail: sagaspay1@up.edu.ph*
[d] *E-mail: cmbrides@up.edu.ph*

Abstract: This study explores the motorcycle riding scene in the Philippines, focusing on the habits, training, and safety measures of riders. A survey was administered at a road safety summit to collect information from participating members. The results show a variety of frequent riders who mostly use motorcycles for daily travel. Despite an increase in professional training, many riders learn informally. While helmet laws and alcohol limits are well-known, there are still misunderstandings about distracted driving and passenger safety for children. Most reported motorcycle crashes were minor, but a significant number went unreported due to privacy worries. The study highlights challenges like poor road conditions, risky driving, and inadequate safety education. To improve motorcycle safety, the study suggests a comprehensive approach focusing on enhanced training, stricter safety rules, upgraded roads, and targeted enforcement.

Keywords: Motorcycle, Motorcycle Safety, Motorcycle Rider Behavior, Road Safety Policies

1. INTRODUCTION

In developing countries like the Philippines and much of Asia, motorcycles reign supreme due to affordability, maneuverability in congested cities, and their ability to serve multiple purposes – from personal transportation to deliveries and public transport (Jannat et al., 2023). This dominance, however, comes with challenges like traffic congestion and safety concerns (Savolainen & Mannering, 2007)[1].

Motorcycles offer a dynamic and fuel-efficient mode of transportation; however, their riders are unevenly represented in traffic-related fatalities[2], and while existing research highlights the importance of understanding motorcycle rider behavior for effective road safety interventions (Uy & Regidor, 2011; Savolainen & Mannering, 2007), there remains a knowledge gap specific to the Philippines and, particularly, passionate motorcycle enthusiasts. This dedicated group likely possesses unique perspectives on riding challenges and safety practices within their communities. This invites the critical need to understand motorcycle rider behavior for effective road safety interventions.

In the Philippines, motorcycles emerged as the leading mode of transportation in 2022,

[1] Effectiveness of Motorcycle Training and Motorcyclists' Risk-Taking Behavior (Savolainen and Mannering, 2007)
[2] Metro Manila Accident Reporting and Analysis System (MMARAS) database

surpassing jeepneys and now constituting more than two-thirds of the total motor vehicle population (Santiago et al., 2023). Meanwhile, in Metro Manila, motorcycle usage has surged, mirroring trends across Southeast Asia and globally. According to the Asian Development Bank, the Philippines saw a significant increase in registered motorcycles, outpacing other vehicle types from 2013 to 2016[3]. This rise is driven by socio-economic factors, including the need for affordable and flexible transportation in congested urban areas. Figure 1 shows the trend in motorcycle registration, including those intended to be used as tricycles, for the years 2017 to 2022[4].

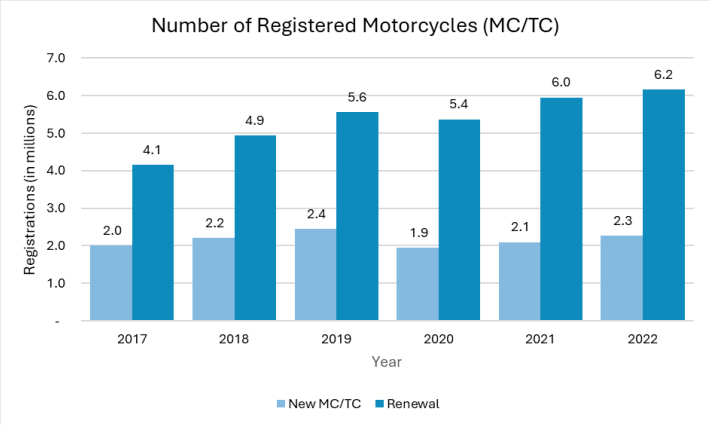

Figure 1. Motorcycle Registration (LTO, 2017-2022)

While Uy & Regidor (2011) emphasized assessing rider behavior, habits, and physiological data, such as age and crash experience, including anger and aggression tests, Gumasing (2018) recommended the conduct of proper training and seminars, safe driving campaigns, imposition of stricter penalties for drunk driving, and continuous education of riders on the importance of protective gear as crucial keys for minimizing injuries during crashes.

This study utilizes a survey to explore the behaviors, training backgrounds, and road safety practices of motorcycle enthusiasts. By focusing on this passionate group with valuable insights into riding challenges, the study aims to provide a clearer understanding of motorcycle safety in the Philippines. Analyzing these factors will help identify areas for targeted interventions that improve safety outcomes for both group riders and the broader motorcycling community.

2. OBJECTIVES OF THE STUDY

This study has the following objectives:

1. To describe the demographic profiles and motorcycle usage patterns of the participating riders.
2. To examine compliance with road safety policies, including helmet laws, anti-drunk driving measures, use of headlights, rules on back riders, speed limits, and anti-distracted driving regulations.

[3] Growth of motorcycle use in Metro Manila Impact on Road Safety (Asian Development Bank, 2020)
[4] Philippine's Land Transportation Office (LTO, 2022)

3. To explore the experiences of motorcycle riders related to road crashes, including involvement, settlements, police reports, hit-and-runs, and the outcomes of crashes and injuries.
4. To identify the biggest issues, common challenges, and concerns faced by motorcycle riders within the enthusiast community.
5. To propose evidence-based recommendations for improving road safety policies, training programs, and awareness campaigns aimed at enhancing safety outcomes for motorcycle riders.

3. SIGNIFICANCE OF THE STUDY

This study explores the dynamics of motorcycle riders' behaviors, training backgrounds, and road safety awareness, compliance, and practices within the enthusiast community, presenting significant implications for policy, training, and advocacy initiatives. The perceived significance of this undertaking includes:

1. This study investigates motorcycle rider behavior, training, and road safety practices among enthusiasts in the Philippines. The resulting insights can inform the development of effective road safety policies and programs tailored to Filipino riders' unique needs.
2. Additionally, the research can help identify areas for improvement in training programs and key rider challenges, ultimately informing evidence-based interventions.
3. This study can significantly contribute to expanding knowledge on motorcycle riding practices and road safety, benefiting policymakers, researchers, and advocacy groups working towards a safer road environment for all.

4. LITERATURE REVIEW

This section explores the existing research on motorcycle rider training, behaviors, and safety practices in the Philippines. It explores how these factors influence crash rates and overall safety, comparing findings with studies conducted in other countries. This review serves as a springboard for a subsequent survey-based study that investigates these same topics among motorcycle enthusiasts in the Philippines.

Building on this foundation, the current study expands the conversation by exploring key factors that influence motorcycle safety. It examines how demographics, insufficient safety practices, and inadequate training and behavior management contribute to rider risk. Additionally, the research highlights a critical gap in rider awareness and education, further contributing to these safety concerns. Authors, themes, and key issues from some similar academic works are summarized in Table 1.

Table 1. Summary of key studies on motorcycle safety and related issues

Author/s	Themes	Key Issues
Jannat et al., 2023	Key areas of motorcycle road safety evaluation and improvement in Bangladesh	• Insufficient road safety knowledge and lack of adequate safety practices • Demographic influences • Need for enhanced safety measures
Radzuan et al., 2023	Analyzing and improving	• High number of motorcycle crashes

	motorcycle safety in Malaysia	• Ineffectiveness of protective headgear (counterfeit helmets or improper usage) • Need for a motorcycle safety rating program
Gumasing & Magbitang, 2020	Assessing factors influencing the severity of motorcycle accidents in Metro Manila	• High risk posed by traffic conditions • Impact of weather conditions on crash severity • Influence of alcohol intoxication on crashes
Savolainen & Mannering, 2007	Motorcycle crash patterns and safety measures (Indiana, USA)	• Consistent number of motorcycle crashes yearly • High incidence of head injuries among fatal victims • Need for improved motorcycle safety measures and programs
Uy & Regidor, 2011	Motorcycle rider characteristics/behaviors and factors influencing road crash in Metro Manila	• Increasing motorcycle registrations and road crashes • Younger riders (ages 22 to 37) involvement in crashes • High aggression levels contributing to crash frequency • Lack of formal training among many riders • Poor rider visibility and protection measures

5. METHODOLOGY

This study employed a survey research design to investigate the training backgrounds, behaviors, and road safety practices of motorcycle enthusiasts in the Philippines. Data collection occurred during a road safety summit organized by the Motorcycle Development Program Participants Association (MDPPA) in the Philippines.

5.1 Data Collection

A paper questionnaire was designed specifically for the motorcycle riders' summit, following the survey structure of Napalang et al., 2017[5]. The questionnaire addressed demographics, motorcycle usage patterns, training experiences, road safety knowledge, rules and regulations awareness, riding behaviors, and experiences with road crashes.

A convenience sampling approach was employed. The 276 participants at the road safety summit, representing 60 motorcycle clubs and federations, were invited to complete the survey.

5.2 Data Processing and Analysis

Following data collection and processing, descriptive statistics were generated to analyze the survey data. This included calculating frequencies, percentages, measures of central tendency (mean, median), and measures of dispersion (standard deviation) for relevant variables.

[5] Napalang, M.S.G., et al. (2017) Addressing motorcycle safety through regulations: challenges and issues in the Philippines. Proceedings of the 24th Annual Conference of the Transportation Science Society of the Philippines.

Depending on the nature of the data, inferential statistics were also employed to generate relevant interpretations of the relationships between variables. Figure 2 illustrates the methodology of the study.

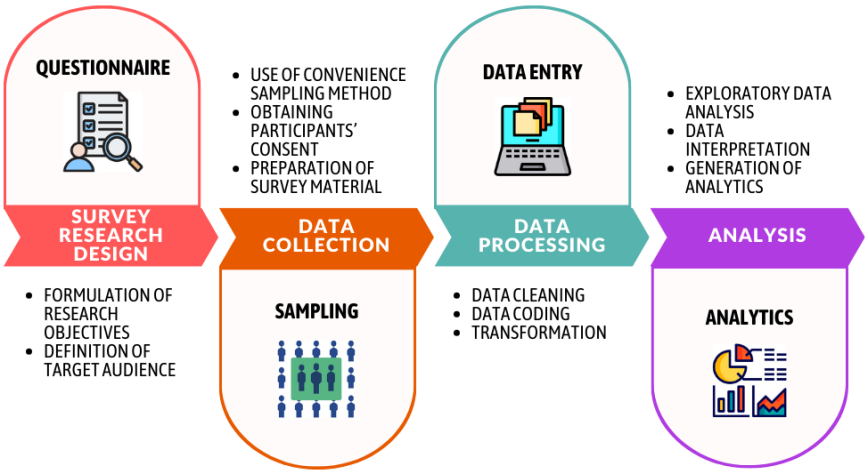

Figure 2. Methodology of the Study

6. RESULTS, DISCUSSION, AND ANALYSIS

6.1 Demographic Profile and Patterns of Motorcycle and Other Vehicles Usage

6.1.1 Age distribution

Figure 1 shows the age distribution of the respondents. The data indicates a distinct tendency toward a middle-aged population, with the 40–44 age group being the largest proportion of respondents (22% of the total) and the 45–49 age group (18%). When taken as a whole, these groups account for a notable 40% of the population, underscoring the prevalence of people in their forties. With 15% and 11%, respectively, age groups 35–39 and 30-34 follow closely behind, suggesting a significant proportion of people in their thirties. A lesser percentage is contributed by younger age groups, such as 20–24 and 25–29, at 4% and 8%, respectively. The percentages for the older age categories, 55–59 and 60–63, are 7% and 3%, respectively, indicating a progressive drop in representation after age fifty-five.

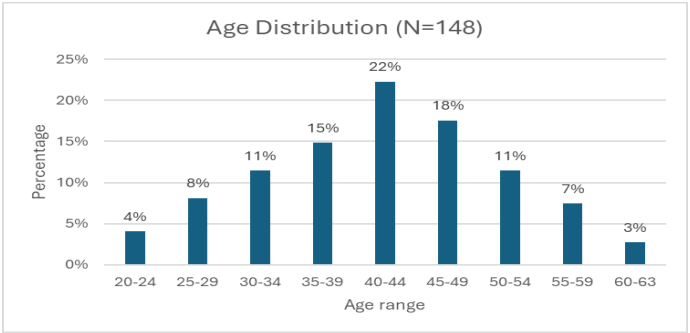

Figure 3. Age distribution of respondents

6.1.2 Monthly income

Figure 4 illustrates that most individuals fall within lower to mid-income ranges. The largest group (37.1%) earns 10,000-19,999 monthly, followed by 26.5% earning 20,000-29,999. Higher-income brackets are less frequent.

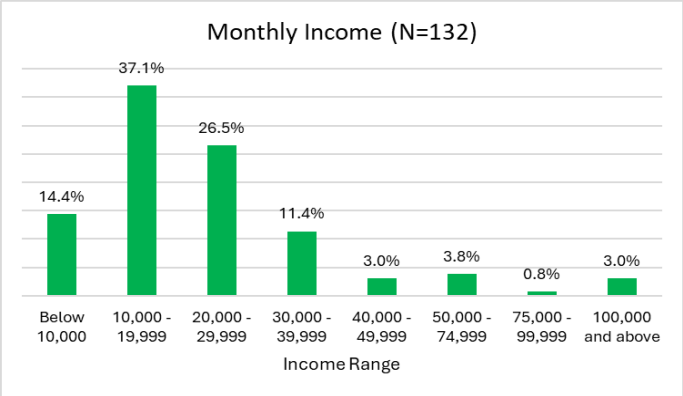

Figure 4. Monthly income distribution

6.1.2 Number of years using/riding motorcycle

Figure 5 shows the distribution of years of experience using motorcycles. Most of the riders (24%) who completed the survey are relatively new to motorcycling, having been riding for only 1-5 years. Experienced riders with 16-20 years of experience make up 18% of the total, followed by those with 6-10 years at 17%. The percentage of riders with longer experience gradually declines, with only 7% having been riding for over 32 years. This suggests a broad spectrum of experience levels among motorcycle riders, with a noticeable concentration in the early stages of riding.

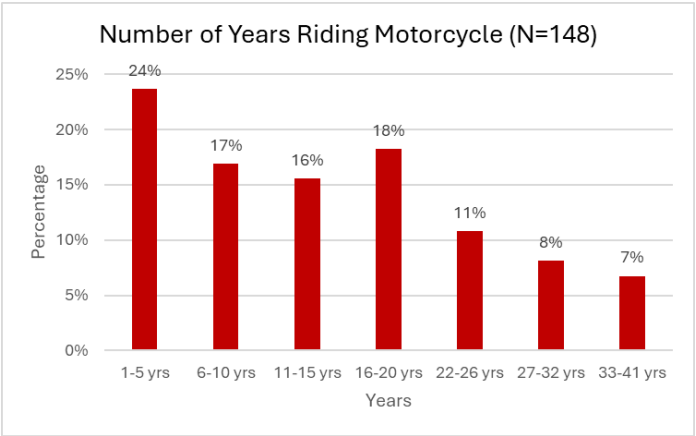

Figure 5. Years of experience using motorcycles

6.1.3 Frequency of using a motorcycle in a day

Figure 6 shows that about 81 percent (80.9%) of the participants engage in this activity frequently. The breakdown reveals a significant portion performing it multiple times a day (43.5% more than 5 times, 37.4% 2-5 times). This high frequency highlights the activity's potential importance or routine integration into their daily lives.

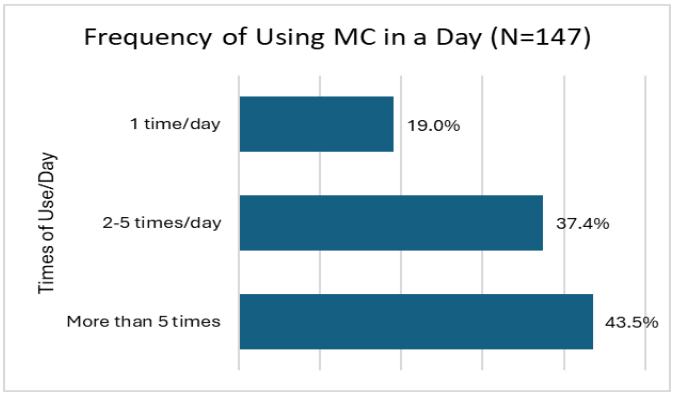

Figure 6. Frequency of motorcycle use per day

6.1.4 How riders learned to drive

Figure 7 outlines the distribution of driving learning methods, with the majority (49.3%) opting for learning from relatives and friends. Self-learning represents a significant portion at 29.7%, while professional courses combined with social sources and driving institutions account for 12.8%. Other methods, including solely from driving schools or a mix of sources, make up the remaining percentages. This observed heterogeneity reflects a reliance on informal channels like relatives and friends for driving education.

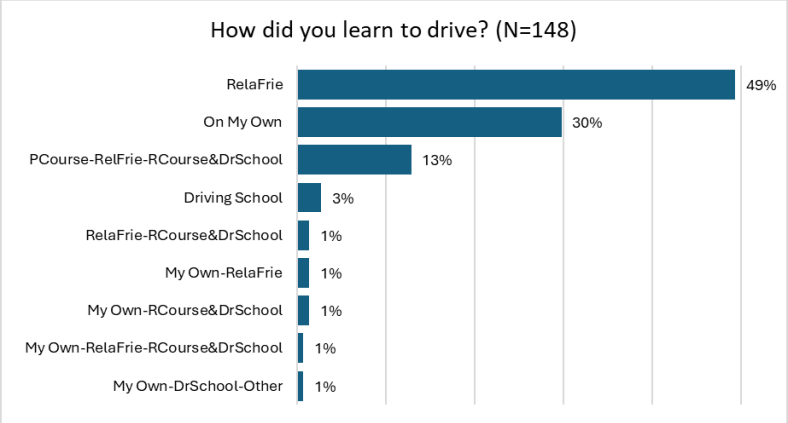

Figure 7. How riders learned to drive

6.1.5 Use of other vehicles aside from motorcycle

Over half (57.1%) of the surveyed motorcycle riders revealed they do drive other vehicles. This suggests a significant portion of the respondents possess diverse driving skills beyond motorcycles. This overlap in exposure to different road rules and behaviors might influence their overall motorcycle safety awareness and practices.

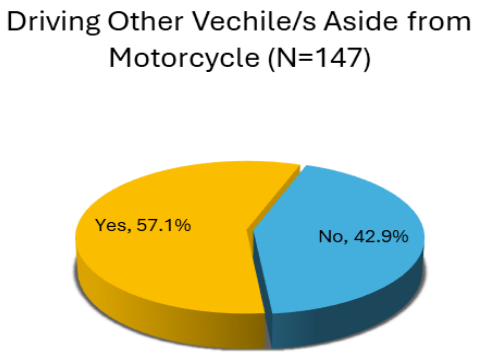

Figure 8. Driving other vehicles aside from motorcycles

6.2 Professional Motorcycle Riders Training

6.2.1 Participation in professional motorcycle riders training

Figure 9 reveals that 59% of respondents did not take professional motorcycle rider training, while 41% did. This indicates a majority opting out of formal training, suggesting that many riders might be relying on informal methods or self-learning to develop their riding skills. The significant proportion who did receive professional training highlights the importance placed by a substantial minority on structured, expert-led instruction for motorcycle riding.

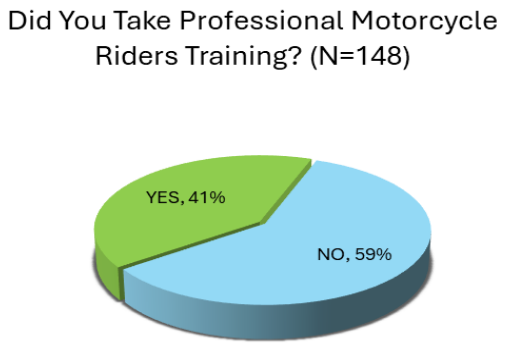

Figure 9. Professional motorcycle riders' training

6.2.2 Recent motorcycle rider training attended

Enrollment information reveals a surge in recent motorcycle rider training. Nearly 60% reported enrolling in the past two years (2022 & 2023) compared to a progressive decline in prior years (11.6% in 2021, dropping further back to 2016). This suggests a potential shift towards prioritizing formal safety training among riders.

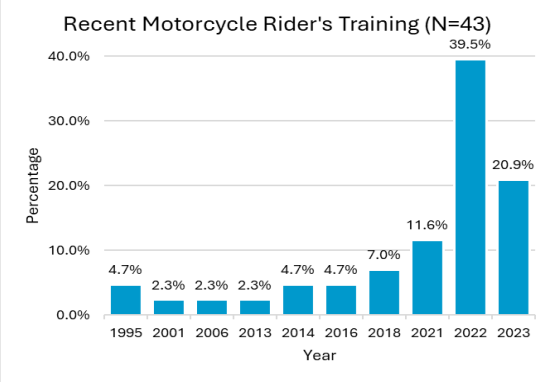

Figure 10. Year respondents enrolled in motorcycle rider training

6.3 Regulatory Knowledge Assessment

6.3.1 Wearing of helmet

Almost all (99%) of the respondents correctly identified that both motorcycle drivers and back riders need standard protective helmets. This suggests a strong level of awareness and adherence to helmet laws among the population surveyed. However, a small but noteworthy 1% held the misconception that only drivers require helmets. This finding underscores the value of continued public education efforts, as even a small number of misunderstandings regarding helmet use could have significant safety implications on the road.

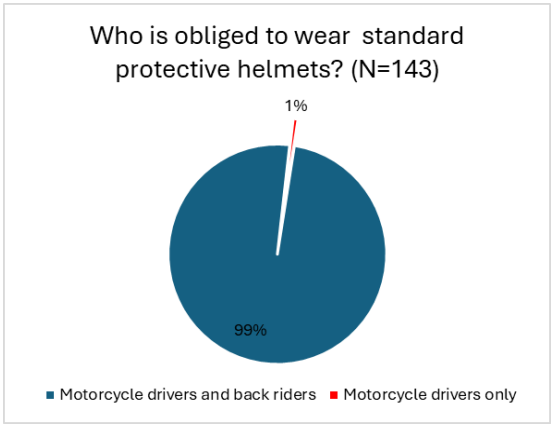

Figure 11. Who should wear a helmet

When asked when a motorcycle rider is required to wear a helmet, 94% of the respondents answered, "*all the time*," regardless of trip length or road classification. The remaining 6% declined to answer.

6.3.2 Misinformation check on Distracted Driving

To identify knowledge gaps or misconceptions about distracted driving among respondents, this study employed psychometrics. Respondents were presented with a question item with incorrect options, also known as "distractors." A neutral option, "*Not mentioned in the list*," was included to help gauge how many respondents were unsure rather than simply choosing an incorrect option.

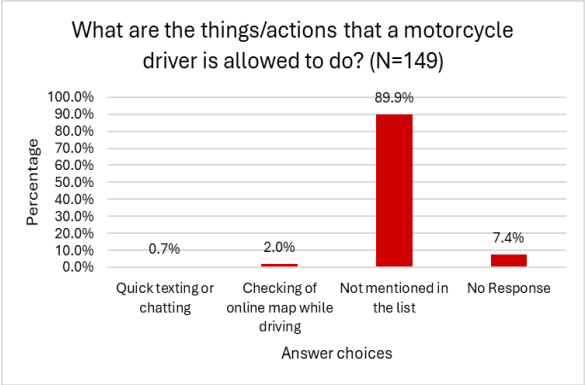

Figure 11. Actions motorcycle riders are allowed to do

Data shows that small percentages (0.7% and 2.0%) of respondents believe that quick texting or chatting and checking an online map while driving are acceptable actions for motorcycle drivers. On the other hand, the vast majority (89.9%) believe that acceptable actions are not included in the provided options. Possibly, they might have other activities in mind that are deemed acceptable, suggesting the provided list might be incomplete or not comprehensive enough. Another possibility is that these respondents are unsure about the legality of texting or looking at maps while driving. So, they would rather choose this neutral option to avoid selecting an incorrect answer. Additionally, they might be hesitant to admit they engage in distracted driving behaviors, so they choose the neutral option to avoid appearing reckless.

A small portion (7.4%) did not provide a response, which could indicate uncertainty or indifference regarding what actions motorcycle drivers can take.

6.3.3 Allowable blood alcohol content

Figure 12 shows that among respondents, 64.7% know that the allowable Blood Alcohol Concentration (BAC) for motorcycle drivers is 0.00 pct (zero tolerance policy), while 12.0% specified 0.01 pct, and 23.3% mentioned 0.05 pct. This analysis underscores a prevailing awareness of stricter BAC limits for motorcycle drivers.

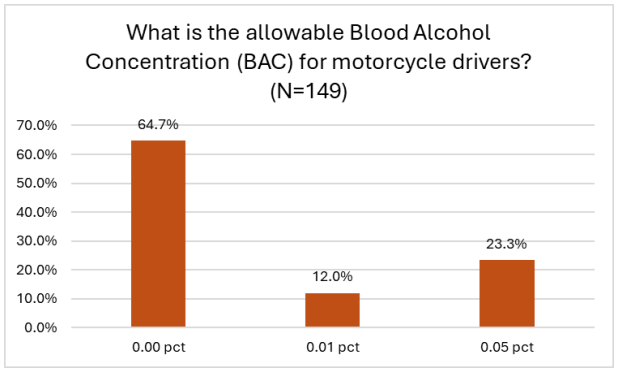

Figure 12. Blood alcohol content (BAC) for motorcycle driver

6.3.4 Meaning of a continuous yellow line

The chart below (Figure 13) shows that 91.1% correctly understand a continuous yellow line means no overtaking. However, 5.9% think overtaking is allowed if safe, 2.2% confuse it with a pedestrian crossing, and 0.7% see it as a suggestion. These findings emphasize the need for

continued traffic safety education. Even a small number of misunderstandings can have serious consequences, so reinforcing knowledge of traffic regulations remains crucial for safe driving.

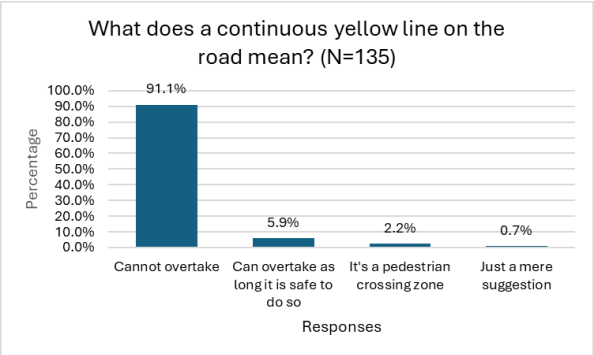

Figure 13. Understanding of continuous yellow line

6.3.5 Rules when having a child as a back rider

The most common response, "*As long as accompanied by a parent providing support*" (67.6%), which is prohibited by Republic Act 10666, initially suggests a good understanding of the law as it aligns with the survey question about which situations are prohibited when a child is a backrider. However, it is also possible that respondents mistakenly believed a parent assisting a child in this manner is acceptable. Similarly, they might have applied the same reasoning to the following conditions: the child's arms can reach and hold onto the driver's waist (12.5%), the child can step smoothly onto the motorcycle foot peg (14.7%), and the child is wearing a standard protective helmet (5.1%). The way these responses emerged, future surveys need stricter supervision to ensure that proper context and flow are understood.

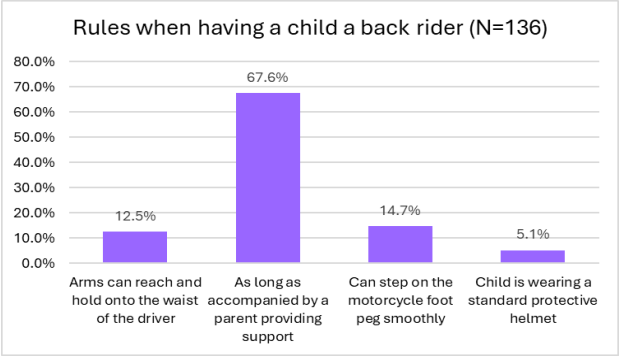

Figure 14. Knowledge of rules when having a child as a back rider

6.4 Road Crash Experiences and Outcomes

6.4.1 Involvement in road crashes, outcomes, and settlements

An analysis of road crash outcomes shows that 47% of crashes result in "Small damage," indicating frequent low-impact collisions. Severe accidents are less common, with "Big damage" reported in 22% of cases. The remaining outcomes include "Damage to property" (13%) and "No damage" (18%), representing incidents with minimal or no visible harm.

This data demonstrates a picture of varying crash severity, with a clear emphasis on the prevalence of minor collisions.

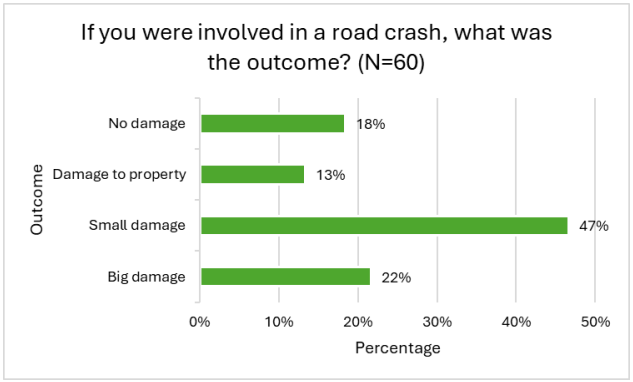

Figure 15. Outcomes of road crash

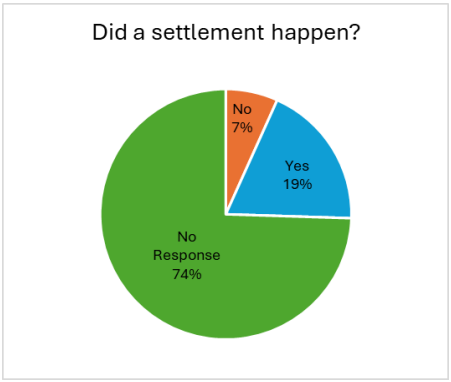

Figure 16. Settlement after the crash

Most respondents (74%) withheld information on post-crash settlements, potentially due to privacy concerns or lack of crash involvement themselves. However, of those who answered, settlements were relatively frequent (19%) compared to those saying no settlement (7%). This suggests settlements are common when information is provided. Further investigation is needed to understand the reasons behind the high non-response rate and gain a more complete picture of post-crash settlements.

6.4.2 Involvement in Hit and Run

A concerningly high number of respondents (88.6%) did not answer the question regarding hit-and-run involvement. This lack of response could stem from several factors, including:

- *Fear of legal repercussions*: Individuals might be hesitant to disclose their involvement in a hit-and-run accident.
- *Social stigma*: Hit-and-run incidents carry a negative social stigma, potentially discouraging disclosure.
- *Privacy concerns*: Respondents might be wary of sharing sensitive information about a crash incident.
- *Memory repression*: Psychological defense mechanisms could lead some to deny or repress memories of such incidents.

Only 2.0% of respondents reported involvement in a hit-and-run incident. This low percentage might indicate that hit-and-run cases are relatively rare among the respondents or that there is underreporting due to fear of legal consequences or stigma. A small proportion (9.4%) reported that they were not involved in a hit-and-run situation. This response indicates that some respondents felt comfortable enough to disclose their non-involvement.

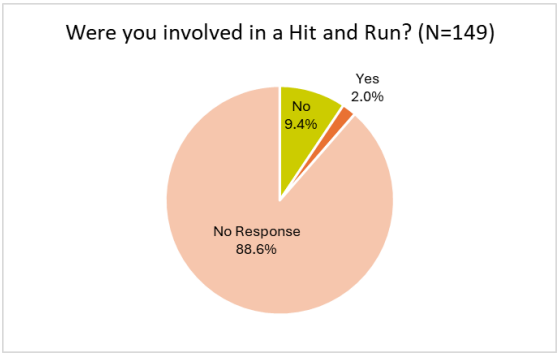

Figure 17. Involvement in Hit and Run incident

6.4.3 Incident reporting

Around 80% of respondents chose not to answer the question about official crash reports, likely due to privacy concerns or perceived irrelevance. Meanwhile, 14.8% reported filing a report, and 5.4% did not, possibly handling incidents informally. This disparity suggests the need to investigate why many avoid reporting, which is crucial for understanding how people respond to crashes.

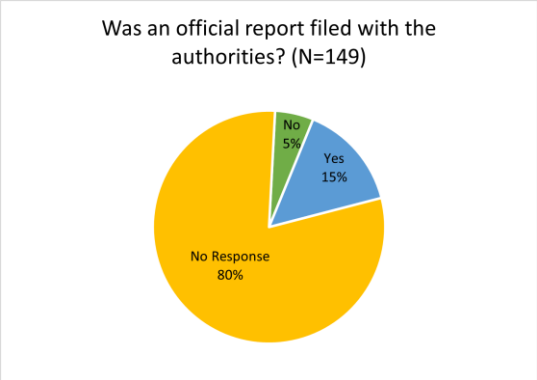

Figure 18. Reporting of the crash incident

6.5 Perceived Level of Understanding of Laws

Participants completed a survey that measured their understanding of eight motorcycle-related regulations. They rated their knowledge using a Likert Scale of 1 to 5 (1 = "*I do not understand*, 2 = *I understand a little* 3 = *I understand, with a little hesitation* 4 = *Just enough knowledge* " 5 = "*I understand thoroughly*"). The regulations covered included: 1. Helmet Law 2. Anti-Drunk Driving Act 3. Backrider Requirements 4. Headlight Use 5. Speed Limit 6. Footwear 7. Anti-Distracted Driving 8. Regulations on Top Boxes/Saddle Bags. Following is the summary of analytics generated for each regulation.

1. **Helmet Law**[6]: 97.3% demonstrated a thorough grasp of the Helmet Law, reflecting a strong level of understanding and familiarity with its requirements.
2. **Anti-Drunk Driving Act**[7]: 93.1% possess a comprehensive understanding of the Anti-Drunk Driving Act, while 6.3% have a limited grasp of its provisions.
3. **Back Rider Requirements**[8]: While the vast majority (89%) exhibit a comprehensive understanding of Back Rider Requirements, a small number still exhibit gaps in their knowledge.
4. **Headlight Use**[9]: 93% of the respondents have a thorough grasp of the Headlight Use law. Others have varying levels of understanding, but these percentages are minimal.
5. **Speed Limit**[10]: 83.7% fully grasp the Speed Limit regulation, but a significant minority (12.2%) only have a fundamental understanding.
6. **Footwear**[11]: 89.7% have a thorough understanding of the Footwear regulation, while a small minority (8.2%) possess a minimal level of knowledge.
7. **Anti-Distracted Driving**[12]: 82.9% have a good understanding of the Anti-Distracted

[6] Republic Act (RA) 10054 - Motorcycle Helmet Act of 2009
[7] Republic Act (RA) 10586 - Anti-Drunk and Drugged Driving Act of 2013
[8] Republic Act (RA) 10666 - Children's Safety on Motorcycles Act of 2015
[9] Land Transportation Office (LTO) Administrative Order No. AHS-2008-015, May 15, 2008
[10] Republic Act (RA) 4136 - Land Transportation and Traffic Code
[11] Land Transportation Office (LTO) Administrative Order (AO) No. AHS-2008-015 (Motorcycle Dress Code)
[12] Republic Act (RA) 10913 - Anti-Distracted Driving Act of 2016

Driving regulation, while a notable portion (13%) have a basic level of knowledge about it.

8. **Top Boxes/Saddle Bags**[13]: Although a substantial portion of respondents (67.6%) fully comprehend the rules for Top Boxes and Saddle Bags, a significant group (24.8%) possesses only partial knowledge.

Table 2. Level of understanding of key motorcycle regulations (Likert Scale)

Law	I do not understand **(1)**	I understand a little **(2)**	I understand, with a little hesitation **(3)**	Just enough knowledge **(4)**	I understand completely **(5)**	Total Responses
Helmet Law			1 (0.7%)	3 (2.1%)	142 (97.3%)	146
Anti-Drunk Driving Act			1 (0.7%)	9 (6.3%)	134 (93.1%)	144
Back rider Requirements	1 (0.7%)		1 (0.7%)	14 (9.6%)	130 (89%)	146
Headlight Use		1 (0.7%)	2 (1.4%)	8 (5.4%)	136 (93%)	147
Speed Limit	1 (0.7%)		5 (3.4%)	18 (12.2%)	123 (83.7%)	147
Footwear		1 (0.7%)	2 (1.4%)	12 (8.2%)	131 (89.7%)	146
Anti-Distracted Driving	1 (0.7%)	1 (0.7%)	4 (2.7%)	19 (13%)	121 (82.9%)	146
Top Boxes/Saddle Bags		4 (2.8%)	7 (4.8%)	36 (24.8%)	98 (67.6%)	145

Table 2 reveals that most motorcycle riders have a high level of understanding of key regulations, particularly Helmet Law and Anti-Drunk Driving Act. However, there are areas like Speed Limit, Anti-Distracted Driving, and Top Boxes/Saddle Bags where a significant portion of riders only have just enough knowledge or less, highlighting the need for enhanced educational efforts in these areas.

6.6 Issues and Concerns Faced by Motorcycle Riders

Identifying motorcycle rider issues is vital for understanding their road risks, enabling a systematic examination and categorization of factors affecting safety and rider experiences. This supports informed decision-making and strategic planning to improve motorcycle safety and rider well-being. The following tables present the key themes from participants' responses.

Table 3 highlights the key issues under the theme “Road User Behavior”. Inattentive and aggressive drivers, like those who tailgate or swerve, along with inexperienced or reckless motorcyclists, create a dangerous road environment. Disrespectful interactions with authorities further exacerbate this tension.

[13] Land Transportation Office (LTO) Memorandum - Guidelines on Inspection and Apprehension Relative to Motorcycle Top Boxes and Saddle Bags (March 2016)

Table 3. Issues and concerns faced by motorcycle riders

Theme 1	Key Issues
Road User Behavior	• Driver's aggressive behavior, impatience, frequent swerving, and tailgating (inc. chaotic and disorderly driving) • Reckless riding and not following signs • Driving under the influence of intoxicants • Inexperienced motorcyclists • Disrespect from enforcers/government employees

Table 4 lists the key issues under the theme "Road and Traffic Conditions". Traffic congestion and poor road maintenance, including potholes, significantly hinder safe travel. Designated motorcycle lanes often face additional challenges: congestion, encroachment by other vehicles, and the presence of unauthorized vehicles like tricycles and e-bikes on highways. This combination creates a dangerous environment for all road users.

Table 4. Issues and concerns faced by motorcycle riders

Theme 2	Key Issues
Road and Traffic Conditions	• Heavy traffic • Hazardous road conditions, including potholes and inadequate designated lanes for motorcycles • Presence of tricycles and e-bikes on highways • Other vehicles occupying motorcycle lanes

Table 5 summarizes the key issues related to enforcement and discriminatory treatment. Ineffective enforcement, profiling at checkpoints, potential systemic bias, and even corruption among enforcement officers create a situation where riders experience unfair treatment, ultimately undermining overall road safety efforts.

Table 5. Issues and concerns faced by motorcycle riders

Theme 3	Key Issues
Enforcement and Discriminatory Treatment	• Ineffective law enforcement • Discrimination at checkpoints • Systemic and institutional discrimination • Corruption among enforcers

Table 6 indicates that, somehow riders are exposed to greater risk due to inadequate road safety education. This includes a lack of comprehensive training and poor knowledge of safety rules, resulting in poor road discipline.

Table 6. Issues and concerns faced by motorcycle riders

Theme 4	Key Issues
Road Safety Education and Awareness	• Lack of comprehensive road safety training • Poor knowledge of road safety • Lack of self-discipline due to poor safety awareness

Theme 5 in Table 7 highlights inadequate road signage, particularly a lack of early warnings and poorly visible nighttime signage. This hinders safe navigation and increases risk, especially at night due to the absence of early warning devices.

Table 7. Issues and concerns faced by motorcycle riders

Theme 5	Key Issues
Road Signage and Visibility	• Insufficient road signage and early warning signs • Poor road visibility at night and lack of early warning devices

Table 8 (Theme 6) identifies compromised motorcycle safety due to riders neglecting basic measures: improper footwear for back riders, lack of proper attire, and outdated/missing plates from registration delays.

Table 8. Issues and concerns faced by motorcycle riders

Theme 6	Key Issues
Equipment, Attire, and Licensing	• Improper footwear and attire for back riders • Absence of proper motorcycle plates and delayed vehicle registration

Table 9 outlines the challenges riders face: road hazards, inattentive drivers (drowsy, reckless e-bike riders), and their own vulnerability (inexperience). Hit-and-run risks and delays add pressure, potentially impacting road safety decisions.

Table 9. Issues and concerns faced by motorcycle riders

Theme 7	Key Issues
Motorcycle Rider Safety Challenges	• Hit-and-run incidents • Sleepiness while driving • Abusive e-bike drivers • Inexperienced riders • Travel delays • Dangers on the road

Table 10 stresses a critical infrastructure issue: missing or misused designated lanes on expressways, leading to congestion and increased risks for motorcycle riders.

Table 10. Issues and concerns faced by motorcycle riders

Theme 8	Key Issues
Motorcycle Lane Infrastructure and Regulations	• Lack of special lanes for motorcycles on expressways • Poor implementation of motorcycle lane rules • Misuse of motorcycle lanes by other vehicles

7. KEY FINDINGS

This section presents the key findings on motorcycle usage patterns, training, regulatory knowledge, and crash experiences. The data unveils details on the demographics of motorcycle riders, their daily routines, and how they acquired their riding skills. Also explored is the prevalence of professional training and riders' grasp of key regulations.

7.1 Demographic Profile and Motorcycle Usage Patterns

Age Distribution: The respondents' ages ranged from 20 to 63 years, with a mean age of 41.79 years. Peaks were observed at ages 32, 40, 43, and 46.
Income Levels: 37.1% had a monthly income between PHP 10,000 and PHP 19,999,

followed by 26.5% earning PHP 20,000 to PHP 29,999.
Years of Driving Motorcycle: Riders' experience ranged from 1 to 40 years, with peaks at 5, 7, 15, 20, and 25 years. Most riders (24%) are relatively new, with 1-5 years of experience, followed by 16-20 years (18%) and 6-10 years (17%). Only 7% have over 32 years of experience.
Daily Usage: 80.9% use motorcycles frequently, with 43.5% using them more than five times daily.
Learning Methods: 49.3% learned to drive from relatives and friends, while 29.7% are self-taught.
Other Vehicles: Over half (57.1%) also drive other types of vehicles.

7.2 Professional Motorcycle Riders Training

Participation: 59% of respondents did not undergo professional training, while 41% did.
Recent Training: There was a notable increase in training enrollment in the past two years (2022-2023).

7.3 Regulatory Knowledge Assessment

Helmet Law:
Rating-Based Knowledge: Nearly 99% of respondents indicated that they understand that both drivers and back riders must wear helmets.
Situational Knowledge: Despite this, 1% incorrectly believed that only drivers are required to wear helmets, indicating a gap when applying this knowledge in specific scenarios.

Distracted Driving:
Rating-Based Knowledge: Most respondents indicated an understanding of distracted driving laws, with 82.9% claiming thorough knowledge of the Anti-Distracted Driving Law.
Situational Knowledge: However, 0.7% and 2.0% of respondents incorrectly believed that texting or checking a map while driving is acceptable, revealing inconsistencies when these behaviors are examined in specific contexts.

Blood Alcohol Content (BAC):
Rating-Based Knowledge: 93.1% of respondents demonstrated a comprehensive understanding of the Anti-Drunk Driving Act, indicating awareness of alcohol restrictions.
Situational Knowledge: Despite this, 23.3% of respondents incorrectly stated that the BAC limit for motorcycle drivers is 0.05%, showing a misunderstanding of the zero-tolerance policy when asked directly.

Yellow Line Interpretation:
Rating-Based Knowledge: 91.1% of respondents correctly stated that a continuous yellow line prohibits overtaking, showing strong theoretical understanding.
Situational Knowledge: However, 5.9% believed overtaking is allowed if safe, suggesting inconsistency when the rule is applied to real-world driving decisions.

Child Back Rider Rules:
Rating-Based Knowledge: Many respondents believed they understood the rules governing back riders, as 89% expressed knowledge of these regulations.

Situational Knowledge: Yet, 67.6% hinted at a possible misconception that "*As long as accompanied by a parent providing support*", albeit aligning with the question item, is acceptable under the law. Similarly, respondents might have incorrectly indicated other conditions as prohibited: *the child's arms can reach and hold onto the driver's waist* (12.5%), *the child can step smoothly onto the motorcycle foot peg* (14.7%), and *the child is wearing a standard protective helmet* (5.1%).

7.4 Road Crash Experiences and Outcomes

Crash Severity: Minor incidents were prevalent, with nearly half (47%) resulting in small damages.
Settlements: 74% of respondents did not disclose settlement details; among those who did, settlements were common (19%).
Hit-and-Run: A high non-response rate (88.6%) suggests a reluctance to disclose involvement, with only 2.0% admitting to involvement.
Incident Reporting: 80% did not answer about official crash reports, indicating possible privacy concerns or other reasons for non-disclosure.

8. CONCLUSIONS

This study provides a comprehensive analysis of the training, behaviors, and safety practices of motorcycle riders in the Philippines, particularly focusing on motorcycle enthusiasts. The findings demonstrate a significant awareness of key traffic regulations, such as helmet use and zero-tolerance for alcohol, but also reveal critical gaps between theoretical knowledge and practical application, especially concerning distracted driving, child back-riding rules, and road crash reporting.

While 99% of respondents know helmets are required for both drivers and back-riders, 1% still incorrectly believe only drivers need helmets, showing a gap between self-reported knowledge and real-world application. Similarly, though 82.9% expressed strong knowledge of the Anti-Distracted Driving Law, a small but notable portion (0.7% and 2%) mistakenly considered texting or checking a map acceptable, highlighting inconsistencies between theoretical understanding and actual behavior.

For Blood Alcohol Content (BAC) laws, 93.1% of respondents demonstrated a comprehensive understanding of the Anti-Drunk Driving Act, but 23.3% still incorrectly believed that the allowable BAC limit for motorcycle riders is 0.05%, despite the zero-tolerance policy. This misunderstanding points to a need for more targeted public education regarding alcohol-related road safety.

The yellow line interpretation also reveals a gap between theoretical knowledge and situational application: while 91.1% of respondents correctly pointed out that overtaking on a continuous yellow line is prohibited, 5.9% believed overtaking is allowed if deemed safe, again revealing inconsistencies in understanding how traffic laws apply to real-world driving decisions.

A big area of confusion surrounds child back-riding rules. While 89% of respondents claimed knowledge of these regulations, 67.6% made mixed judgments regarding the answers to the

question item and might have incorrectly believed that a child could legally ride if a parent is present to provide support. This confusion points out the importance of addressing legal misconceptions regarding child passenger safety.

Moreover, the study marks the prevalence of underreporting crashes, with only 14.8% of respondents filing official reports. This finding is consistent with previous studies that identify privacy concerns and enforcement gaps as barriers to accurate reporting, limiting a full understanding of road crash outcomes and safety risks.

Considering these findings, the study emphasizes the need for improved road safety interventions that bridge the gap between awareness and correct legal interpretation. Key recommendations include enhancing public education on specific regulations, such as distracted driving and child back-riding laws, expanding access to professional rider training, and strengthening law enforcement efforts to ensure compliance with existing laws. In addition, addressing infrastructure challenges, such as the development of dedicated motorcycle lanes and upgrading road conditions, will further improve rider safety. By tackling these challenges, policymakers and advocacy groups can create more effective strategies to enhance motorcycle safety, reduce crash risks, and develop a safer road environment for both riders and the public.

Furthermore, the findings of this study align with previous research, such as Napalang et al. (2017) and Uy & Regidor (2011), which emphasize the importance of understanding rider behavior, environmental factors, and the gaps in regulatory enforcement. Like Napalang et al., this study identifies underreporting of crashes and misunderstandings of key safety regulations as persistent issues. The positive trend in training enrollment aligns with Sigua's (2010) call for structured training programs to reduce the risks posed by inexperienced riders. Additionally, the study reiterates Gumasing & Magbitang (2018) in stressing the need for stricter enforcement of riding behaviors. Lastly, it affirms Bathan et al. (2018) by drawing attention to the role of personality and risk-taking behavior in influencing crash risk. Overall, these findings support the importance of targeted interventions, including enhanced rider education, infrastructure improvements, and more consistent law enforcement to create a safer environment for motorcycle users in the Philippines.

To illustrate further how demography, training, regulatory knowledge, road crash experiences, and road practices impact the vulnerability of motorcycle riders, the following summary is provided:

Table 11. Summary of motorcycle rider demographics, training, regulatory knowledge, and road crash experiences

Category	Subcategory	Data Summary
Demographic Profile and Motorcycle Usage Patterns	Age Distribution	Ages range from 20 to 63 years; mean age is 41.79 years; peaks at 32, 40, 43, and 46 years.
	Income Distribution	Most earn 10,000 - 19,999 PHP; 14.4% earn below 10,000 PHP.
	Riding Experience	Ranges from 1 to 40 years; significant peaks at 5, 7, 15, 20, and 25 years.
	Motorcycle Usage Frequency	80.9% use motorcycles frequently; 43.5% rely on them for more than five

		daily trips.
	Learning Methods	49.3% learned from relatives/friends; 29.7% are self-taught.
	Other Vehicles	57.1% also drive other types of vehicles.
Professional Motorcycle Riders Training	Training Participation	59% did not undergo professional training; 41% did.
	Recent Training	Increase in training enrollment in the past two years (2022-2023).
Regulatory Knowledge Assessment	Helmet Laws	99% aware that both drivers and back riders need to wear helmets.
	Distracted Driving	0.7% and 2.0% incorrectly believe quick texting or checking maps is acceptable.
	Blood Alcohol Content	64.7% know zero-tolerance policy; 23.3% think the limit is 0.05%.
	Yellow Line Interpretation	91.1% correctly identify a continuous yellow line as prohibiting overtaking.
	Child Back Rider Rules	67.6% of respondents may have mixed judgments about the permissibility of children as backriders, as long as parents are present to assist them.
Road Crash Experiences and Outcomes	Crash Severity	Nearly 47% of incidents resulted in minor damages.
	Settlements	74% did not disclose settlement details; 19% who did report settlements.
	Hit-and-Run	88.6% did not disclose involvement; 2.0% admitted to involvement.
	Incident Reporting	80% did not answer about official crash reports, indicating possible privacy concerns.

9. RECOMMENDATIONS

9.1 Enhance Training Programs

To address the significant reliance on informal learning methods:

- Expand Access to Professional Training -- Develop subsidized or free training programs to encourage more riders to undergo formal training.
- Update Training Curriculum -- Ensure training programs include modules on the latest road safety regulations, defensive driving techniques, and the use of protective gear.

9.2 Strengthen Road Safety Policies

To improve compliance with road safety regulations:

- Increase Awareness Campaigns -- Conduct regular public education campaigns focusing on helmet use, zero-tolerance for alcohol, and the dangers of distracted driving.
- Promote Child Safety -- Raise awareness about the legal requirements and safety practices for having children as back riders.

9.3 Improve Road Infrastructure

To mitigate the impact of poor road conditions:

- Upgrade Road Maintenance -- Prioritize the repair of potholes and other road hazards, especially in high-traffic areas frequented by motorcycles.
- Consider Designating Motorcycle Lanes -- Explore the possibility of having dedicated motorcycle lanes on major thoroughfares to reduce congestion and improve safety.

9.4 Address Enforcement and Discriminatory Practices

To ensure fair treatment and effective law enforcement:

- Training for Traffic Enforcers -- Provide comprehensive training for traffic enforcers on non-discriminatory practices and effective enforcement of motorcycle-related laws.
- Anti-Corruption Measures -- Implement strict anti-corruption measures and establish clear reporting mechanisms for riders to report unfair treatment.

9.5 Enhance Road Safety Education

To address gaps in knowledge and improve safety practices:

- School-Based Programs -- Integrate road safety education into school curricula to instill good practices from a young age.
- Community Workshops -- Conduct regular workshops within communities, especially targeting areas with high motorcycle usage.

9.6 Improve Signage and Visibility

To enhance navigation and safety:

- Upgrade Road Signage -- Ensure that road signs are clear and visible at night, and provide early warnings of road conditions and changes.
- Install Early Warning Devices -- Place early warning devices at strategic locations to alert riders of potential hazards.

9.7 Encourage Proper Equipment Use

To promote the use of proper safety equipment:

- Helmet and Gear Subsidies -- Provide subsidies or discounts on helmets and other protective gear to make them more accessible.
- Campaigns for Proper Attire -- Run campaigns emphasizing the importance of proper riding attire, including the use of appropriate footwear and protective gear.

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