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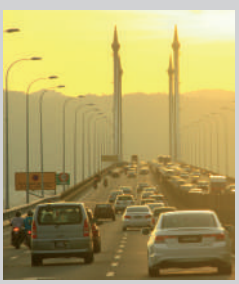

Research Report

Online Survey on Attitude among Car Drivers towards Motorcyclists in Klang Valley

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Low Suet Fin
Khairil Anwar Abu Kassim

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Abstract

With the millions of vehicles travelling on Malaysian road adding up each year, conflicts that cause road crashes and casualties among vehicles and the victims are inevitable. Statistics revealed that almost one (1) million vehicles are involved in road accident each year. Unfortunately, this leads to the high involvement of vulnerable road users specifically the motorcyclists in road crash. Cars involvement in road crash come in the second spot but far lesser than motorcycles. In order to properly understand the interaction between car drivers and motorcyclist, the study probes on how drivers think of the motorcyclists through the experience while they drive. More than 400 drivers in Klang Valley were engaged to answer self-administered questionnaire through online survey. The study found that among car drivers there exist certain attitudes towards motorcyclist which can be categorized as negative attitude, emphatic attitude and awareness of perceptual problems. Findings suggest that drivers have a certain degree of consideration and understanding of motorcyclists. It is also evidenced that significant differences in the attitude among car drivers to motorcyclists are available between drivers only and dual drivers (driver and rider). With the findings, it is suggested that drivers can be further nurtured to be respectful and understanding of riders through campaigns and media exposures. Meanwhile, riders should also increase their visibility to other drivers by wearing and avoiding inappropriate manoeuvers that can compromise their visibility. Training curriculum for new drivers and riders should also highlight the importance of conspicuity problems and enhance understanding of the vulnerability of riders.

1. Introduction

It is a known fact that motorcycle and cars are the largest type of vehicles on Malaysian road. Factually, the total count of registered vehicles in 2016 is 27.6 million in which motorcycles and motorcars dominate a humongous portion of all registered vehicles in Malaysia as indicated from Table 1. With the significantly large populations on the road, conflicts between the two (2) type of vehicles are inevitable and have contributed tremendously to road accident problems in the country.

Table 1 Registered vehicle in Malaysia (Royal Malaysian Police, 2016)

Year	Motorcycle	Car	Other vehicles
Until 2012	10, 554, 578	10, 294, 024	1, 757, 245
Until 2013	10, 926, 125	10, 355, 037	2, 188, 104
Until 2014	11, 629, 265	11, 199, 910	2, 272, 017
Until 2015	12, 094, 790	11, 871, 696	2, 335, 466
Until 2016	12, 677, 041	12, 997, 839	1, 963, 187

In 2018, the Ministry of Transport has issued statement that the efforts towards road safety for the year will focus on motorcycle safety (Utusan Online, 2018). This is in relation to the unchanged trend in a large number of crashes and casualty involving motorcyclists. For many years, the Malaysian police road accident statistics showed that 60% of road fatality was populated by motorcyclist. Table 2 clearly shows that motorcycle is over populated in the crash involvement compared to car or another type of vehicles.

Table 2 Vehicles involved in road crash in Malaysia (Royal Malaysian Police, 2016)

Year	Motorcycle	Car	Other vehicles	Total
2012	655, 813	130, 080	135, 339	921, 232
2013	632, 602	121, 700	147, 521	901, 823

2014	617, 578	125, 712	143, 053	886, 343
2015	625, 758	123, 408	145, 108	894, 274
2016	670, 935	135, 181	154, 453	960, 569

It has been widely believed that accident involving cars and motorcycle were mostly caused by car drivers with quite many studies available to substantiate this fact. However, among the driver community, there is also concern about motorcyclist's lack of self-awareness on their safety by exhibiting behaviours such as weaving in and out of traffic and lacking conspicuity. In addition, motorcyclists are not shy to speeding and using the right side of the lanes instead of their rightful left side. In some locations where motorcycle lanes are available, there are cases where motorcyclist may refuse to ride on the separated lanes or the other drivers abusing the lane for overtaking. Thus, it is of interest of how drivers in Malaysia perceive their fellow road users specifically the motorcyclists. The knowledge is hoped to shed light on understanding any prevalent issues about motorcycle safety from driver's perspective.

This study attempts to understand the attitude among car drivers towards motorcyclist in order to enhance current knowledge and understanding of motorcycle accident and casualty. Findings from this study are expected to help strengthening the current road safety measures for the betterment in intervention approach directed to the motorcyclist as the biggest group of vulnerable road users in the country. In specific, the study aims to:

i. Understand the general attitude among car drivers towards motorcyclist
ii. Determine the difference in the attitude among people who are only car drivers and those who are both car drivers and motorcyclists

2. Literature Review

Previous researches had explored the topics of attitude among motorcyclists and car drivers exclusively. South Australian study by Weissenfeld, Baldock and Hutchinson (2013) found that motorcyclist regarded other type of road users as one of their greatest threat on the road. Another study in Australia (Beanland, Pammer, Sledziowska, & Stone, 2015) suggested that two-thirds of drivers do not agree to the legality of lane filtering practice among motorcyclist and cited safety as the main reason.

A study by de Craen, Doumen, Bos and Norden (2011) on conspicuity related road crash between car and motorcycle suggested distance and speed of motorcycles are harder to be recognized by other drivers, especially with the incoming ones. Drivers were found to have better judgement about motorcycle appearing in the side compared to from opposite direction during a turning manoeuvre. On the other hand, drivers were also exercising more caution with motorcyclists around. De Craen et al. also noted that dual drivers didn't necessarily practice safer driving because they care about rider safety more than regular drivers but rather because they have a better understanding on riding problems and behaviour.

Attitude, skill and knowledge among riders and drivers can be related to whether driver put effort to look, take notice and manoeuvre accordingly around motorcycle riders (Crundall, Clarke, Ward & Bartle, 2008). Crundall et al. (2008) found that dual drivers have a better understanding towards riders in the way that they have higher agreement on performing visual checks when driving and agreed more strongly than other drivers that motorcyclists take greater precautions in wet weather compared to car drivers. The same study also found that drivers without any riding experience agreed that motorcyclist should ride closer to the gutter and that riders usually perform inappropriate manoeuvres.

In studying the crash pattern in Malaysian setting, Zainal Abidin, Abdul Jalil, Wong and Tan (2018) found that most crashes between motorcycle and passenger car occurred while both were travelling in the same direction with one (1) of the vehicles in turning manoeuvre. Plus, the same study also indicated that more than half of such crash was faulted by the passenger cars.

3. Methodology

The study makes use of an online survey as the tool to survey drivers in Klang Valley and areas in immediate proximities. The chosen location is based on the fact that road networks are the most extensive in coverage in addition to the high crash rates around Klang Valley areas. Questions are probed using Bahasa Malaysia as it is the national language in Malaysia.

3.1 Survey and Sampling

A total of 482 respondents in Klang Valley was targeted for the samples. Frequent car drivers (who may or may not be motorcyclists) will be approached using an online survey form with official emails. Google Form is utilized as the medium for online survey since the application is fairly easy and user friendly. Social media and direct contact through private and government agencies were utilized in the dissemination of the online questionnaire to potential respondents. The duration of online survey was from August 2018 to October 2018.

To preserve the eligibility of the respondents, instructions were made to specifically instruct potential respondent on the eligibility as samples in addition to questions probing on the respondent to choose whether they frequently drive cars or ride motorcycles or both. Instruction also stressed that the questions be answered from the perspective of drivers. Before the analysis stage, filters are applied during the data cleaning process in which only respondents frequently driving in Klang Valley and surrounding areas (Kuala Lumpur, Putrajaya, Selangor and Negeri Sembilan) are included as samples.

3.2 Instrumentation

The questionnaire is adapted and modified from a study entitled 'Car drivers' attitudes towards motorcyclists: A survey' conducted in the United Kingdom by Crundall et al. (2008). Taking into account that simplicity and comprehension are necessary to the online survey, the final questionnaire consists of parts as stated below:

I. Demographic profile
- Age
- Gender
- Education
- Marital

II. Licensing and driving details
- License
- Frequent offences

III. Attitude among car drivers towards motorcyclist
- Likert scale (1 – 10) from strongly disagree (1) to strongly agree (10)
- A total of 23 items adopted from Crundall et al. (2008)

As stated by Crundall et al. (2008), the attitude items fall under three (3) domains which are negative attitude towards motorcyclist, emphatic attitude toward motorcyclist and awareness of perceptual problems. The full list of items in attitude section is listed in the following Table 3.

Table 3 Items for attitude towards motorcyclists

Q1.	I find driving car enjoyable and rewarding.
Q2.	I perform all appropriate visual checks when driving or riding, e.g. mirror use, blind-spot checks, etc.
Q3.	When driving in interweaving streams of fast-moving traffic with many other drivers often changing lanes I am constantly aware that motorcycles can be more difficult to spot than under normal driving conditions.

Q4. It is easier for motorcyclists to make sudden swerves to avoid an accident than car drivers.
Q5. Motorcyclists are allowed to filter past stationary or slow-moving traffic.
Q6. It is difficult to estimate the speed of approaching motorcycles while waiting to turn at a junction onto a main carriageway.
Q7. I do (or expect that I would) find riding a motorcycle is enjoyable and rewarding.
Q8. When waiting to turn at a junction onto a main carriageway I find that approaching motorcycles are as easy to spot as approaching cars.
Q9. When riding a motorcycle, taking risks is part of the thrill.
Q10. Motorcycles are as easy to see at night as cars.
Q11. Motorcyclists tend to have headlights on more often than car drivers in the daytime to increase visibility.
Q12. Other motorists should take extra care to look for motorcyclists.
Q13. The average motorcyclist takes greater precautions than the average car driver in wet weather conditions.
Q14. Motorcyclists often perform maneuvers that are inappropriate.
Q15. When a car and a motorcycle collide it is typically the fault of the motorcyclist.
Q16. On the open road you can be suddenly surprised by the appearance of a motorcycle coming from behind you.
Q17. Motorcycles are easily hidden from view by parked vehicles and other parts of the road environment, e.g. buildings or overgrown vegetation.
Q18. It is easier to pass the current motorcycle test than the current car driving test
Q19. I have similar personal characteristics to the average motorcyclist. This is regardless of whether you actually ride a motorcycle yourself.
Q20. Motorcycles are usually easy to spot even against a ‘cluttered’ background (containing road signs, adverts, etc.)
Q21. It costs less to repair the average motorcycle after a minor accident, compared with an average car.
Q22. Car drivers are typically more law-abiding than motorcyclists.
Q23. When in slow-moving traffic I am often surprised by motorcyclists filtering through the traffic.

3.3 Analysis Method

Data collected is coded and analyzed using SPSS statistical software. Descriptive statistics using frequency analysis is performed to analyze the demographic profile of the samples. Mean analysis are used to observe the attitude of car drivers towards motorcyclist following the first objective of the study. This is performed by observing items with the highest (strongly agree) and the lowest average (strongly disagree) means. To simplify the findings, only items with means more than eight ($\mu > 8$) are presented as strongly agreed on items while items with mean less than three ($\mu < 3$) presented as strongly disagreed items.

The second objective of the study which is to determine if there are differences in the attitude among driver only with dual driver (respondent who drive and ride) is accomplished by using the Independent T-test. The test is run to compare the mean for each of the 23 items. Only items that have a significant difference in means are listed in the findings section. To observe the differences more closely, only items with significant mean differences more than one ($|\mu_{ci} - \mu_{di}| > 1$; where *i* refers to the item, *c* refers to the driver only and *d* refers to the dual driver) are listed in the separate table than the T-test results.

4. Analysis and Results

4.1 Demographic and Driving Profile

A total of 482 respondents filled in the online survey. After filtering out responses for the type of driving/riding, frequent driving areas and incomplete response, the remaining 321 samples are included in the analysis. Table 4 and Table 5 tabulate the frequency for selected demographic profiles of the samples. Majority of the respondents are found among those aged 26 to 45 year old, Bumiputera ethnics and married. Male samples are slightly more than that of the females.

Table 4 Frequency for age, gender, ethnicity and marital status among respondents

Variable	Frequency	%
Age (year old)		
16 – 25	14	4.4
26 – 35	119	37.1
36 – 45	121	37.7
46 – 55	61	19.0
56 and above	6	1.9
Total	**321**	**100.0**
Gender		
Male	183	57.0
Female	138	43.0
Total	**321**	**100.0**
Ethnicity		
Bumiputera	306	95.3
Chinese	5	1.6
Indian	8	2.5

Others	2	0.6
Total	**321**	**100.0**
Marital status		
Widow	9	2.8
Married	263	81.9
Single	49	15.3
Total	**321**	**100.0**

In the following Table 5, most respondents have at least STPM or Diploma level as their highest level of education. Almost all samples are of working group while more than 60% have a monthly income in the range of RM1000 to RM5000. Almost half of the respondent only drive while the rest half drives and rides.

Table 5 Education, working status, income level and driving frequency

Variable	Frequency	%
Education level		
Bachelor/Master/PHD	160	49.8
STPM/Diploma	120	37.4
SPM	37	11.5
UPSR/PMR	1	0.3
Others	3	0.9
Total	**321**	**100.0**
Working status		
Working	304	94.7
Student	2	0.6
Not working	7	2.2
Others	8	2.5
Total	**321**	**100.0**
Income		
RM1000 and below	7	2.2
RM1001 – RM3000	97	30.2
RM3001 – RM5000	109	34.0
Above RM5000	103	32.1

No income	5	1.6
Total	**321**	**100.0**
Driving frequency		
Only drive car	152	47.4
Frequently drive and ride	122	38.0
Drive and sometimes ride	47	14.6
Total	**321**	**100.0**

4.2 Attitude among Car Drivers towards Motorcyclist

For simplicity, only the question number is used in the analysis. The full item list can be referred to Table 3 in the methodology section. The means should be in the range of 1 – 10 in which higher means indicate more agreement for each item. From Table 6, the four (4) items that have a high agreement with means more than 8 are on:

Q2. I perform all appropriate visual checks when driving or riding
Q3. When driving in interweaving streams of fast-moving traffic with many other drivers often changing lanes I am constantly aware that motorcycles can be more difficult to spot than under normal driving conditions.
Q12. Other motorists should take extra care to look for motorcyclists.
Q17. Motorcycles are easily hidden from view by parked vehicles and other parts of the road environment, e.g. road signs or overgrown vegetation.

Meanwhile, two (2) items have the lowest agreement with means less than 3 which are on:

Q9. When riding a motorcycle, taking risks is part of the thrill.
Q10. Motorcycles are as easy to see at night as cars.

Table 6 Means for each item in attitude to motorcyclist

Items	Mean	Std. deviation	N
Q1	6.98	2.114	321
Q2	**8.39**	1.647	321

Q3	**8.93**	1.431	321
Q4	6.12	2.971	321
Q5	4.96	3.189	321
Q6	7.15	2.275	321
Q7	5.75	2.821	321
Q8	4.69	2.433	321
Q9	**2.48**	2.101	321
Q10	**2.68**	2.036	321
Q11	7.07	2.668	321
Q12	**8.88**	1.760	321
Q13	7.12	2.825	321
Q14	6.35	2.526	321
Q15	5.50	2.697	321
Q16	7.71	2.247	321
Q17	**8.17**	1.712	321
Q18	5.94	2.517	321
Q19	4.99	2.672	321
Q20	3.93	2.399	321
Q21	7.32	2.429	321
Q22	5.95	2.721	321
Q23	7.15	2.461	321

4.3 Attitude Difference among People Who are Only Car Drivers with Those Dual Drivers

Table 7 lists the results of Independent T-test for mean comparison for attitude among drivers only and dual drivers where only the significant items are listed out. Interestingly, 17 out of 23 items are found to have significant differences in the mean between driver only with those who drives and rides. In general, the items with positive mean differences have higher agreement among drivers who only drive car while negative

ones indicate lower agreement drivers only compared to dual drivers. The items with mean differences in bold are those with considerable difference in the magnitude.

Table 7 Significantly different items under independent T-test

Items	t	df	Sig. (2-tailed)	Mean difference	Std. error difference
Q1	3.210	319	0.001	0.748	0.233
Q5	-6.408	319	0.000	**-2.153**	0.336
Q6	3.051	317.488	0.002	0.759	0.249
Q7	-10.430	319	0.000	**-2.845**	0.273
Q8	-3.174	319	0.002	-0.851	0.268
Q10	-3.073	319	0.002	-0.690	0.225
Q11	-7.651	297.708	0.000	**-2.116**	0.277
Q12	-2.835	256.790	0.005	-0.563	0.199
Q13	-7.939	276.129	0.000	**-2.324**	0.293
Q14	6.837	319	0.000	**1.806**	0.264
Q15	7.747	319	0.000	**2.146**	0.277
Q16	4.674	319	0.000	**1.138**	0.243
Q19	-4.758	319	0.000	**-1.375**	0.289
Q20	-2.732	319	0.007	-0.725	0.266
Q21	2.282	316.280	0.023	0.609	0.267
Q22	6.805	319	0.000	**1.938**	0.285
Q23	7.574	314.928	0.000	**1.903**	0.251

To observe the mean differences among significantly different items, Table 8 lists all items with the absolute value of mean difference more than 1 ($|\mu_{1i} - \mu_{2i}| > 1$). Ten items fall into the list. The bold means are the highest mean among the two driver groups. Interestingly, the drivers only group has highest agreement on two (2) similar items about being surprised by the sudden appearance of motorcycle while driving through traffic (Q16 and Q23) with mean more than eight ($\mu > 8$). The most agreed items among the dual drivers are on motorcycle having a headlight on to increase visibility and motorcyclist taking greater precaution than car driver in wet weather. The less agreed items which are quite moderate ($\mu < 5$) among drivers only are on allowing motorcycle

filtering, finding the ride enjoyable and having similar characteristics with most motorcyclists while the dual drivers disagree most on blaming motorcyclist in car-motorcycle collision.

Table 8 Means for selected items according to driver only or dual driver

Item		Type of sample	*N*	Mean	Std. Deviation
Q5.	Motorcyclists are allowed to filter past stationary or slow-moving traffic.	Driver only	*152*	3.83	2.906
		Driver and rider	*169*	**5.98**	3.093
Q7.	I do (or expect that I would) find riding a motorcycle is enjoyable and rewarding.	Driver only	*152*	4.25	2.551
		Driver and rider	*169*	**7.09**	2.336
Q11.	Motorcyclists tend to have headlights on more often than car drivers in the daytime to increase visibility.	Driver only	*152*	5.96	2.657
		Driver and rider	*169*	**8.08**	2.255
Q13.	The average motorcyclist takes greater precautions than the average car driver in wet weather conditions.	Driver only	*152*	5.89	2.955
		Driver and rider	*169*	**8.22**	2.186
Q14.	Motorcyclists often perform manoeuvres that are inappropriate.	Driver only	*152*	**7.30**	2.267
		Driver and rider	*169*	5.50	2.445
Q15.	When a car and a motorcycle collide it is typically the fault of the motorcyclist.	Driver only	*152*	**6.63**	2.344
		Driver and rider	*169*	4.49	2.594
Q16.	On the open road you can be suddenly surprised by the appearance of a motorcycle coming from behind you.	Driver only	*152*	**8.31**	1.846
		Driver and rider	*169*	7.17	2.437
Q19.	I have similar personal characteristics to the average motorcyclist (regardless of whether you actually ride a motorcycle yourself)	Driver only	*152*	4.27	2.482
		Driver and rider	*169*	**5.64**	2.676

Q22.	Car drivers are typically more law-abiding than motorcyclists.	Driver only	*152*	**6.97**	2.351
		Driver and rider	*169*	5.03	2.711
Q23.	When in slow-moving traffic I am often surprised by motorcyclists filtering through the traffic.	Driver only	*152*	**8.15**	1.999
		Driver and rider	*169*	6.25	2.495

4.4 Discussion

According to Crundall et al. (2008), the items fall under three (3) categories of attitude which are negative attitude towards motorcyclist, emphatic attitude toward motorcyclist and awareness of perceptual problems. The strongly agreed items fall under emphatic attitude and awareness of the perceptual problem which suggest that the respondents regardless of which driver groups have considerable consideration and understanding of the problems faced by the motorcycle riders. The two (2) items that are strongly disagreed also support the above notions since respondents don't find the thrill in taking risk while riding and understand the issue of motorcycle detectability at night. Items on negative attitude domain don't make it to the top list which is a good indicator that drivers in Malaysia may not have such ruthless perception towards the riders. In regards to this, a study by Musselwhite, Avineri, Susilo, and Bhattachary (2012) has found evidence that car drivers may consider that not all riders are practically bad or dangerous.

What makes top items finding interesting is that none of these strongly agreed/disagreed items has significant differences between driver only and dual drivers except for items on 'motorcycles are as easy to see at night as cars' and on 'other motorists should take extra care to look for motorcyclists'. Closer observation revealed that the magnitudes of mean difference, however, are considerably small. The mild difference between the driver groups still reflects that both groups agreed that rider conspicuity is an issue and that drivers should always be expectance of rider presence on the road. This concurs with a study by Zainal Abidin et al. (2018) which also suggests that most car-motorcycle collisions occurred while both car and motorcycle are travelling in the same instead of opposite direction.

Differences of attitude on the different driver groups suggest that people who are dual driver have higher ability to perceive and feel compassion towards the rider's vulnerability (Musselwhite et al., 2012). This is evidenced in that driver only group has negative attitude items with stronger agreement on rider performing inappropriate manoeuvres, putting the blame on riders in car-motorcycle collision and believing that car drivers are more law-abiding compared to motorcycle riders. In a glance, drivers who don't ride do think more negatively about the motorcyclists. As the drivers only group doesn't have sufficient understanding about riding, they may prefer riders to ride closer to road side as found by Crundall et al. (2008). Such perception may influence the level of respect and understanding towards the vulnerability of riders which can be amplified by the sentiment of ownership rather than sharing towards the use of the road (Musselwhite et al., 2012). On another note, driver only group also agreed more about the difficulties to detect the presence of motorcyclist filtering in traffic. This agrees with Beanland et al. (2015) findings of drivers opting against legalizing lane filtering for safety concern.

Dual drivers have stronger agreements in statements about allowing rider filtering through traffic, finding their riding as enjoyable and the tendency among rider to put up headlight during daytime in the effort to increase visibility. This coincides with a study by Wessenfeld et al. (2013) that found motorcyclist to have high attention to their risk related to road in general and other road users. Notably, it is not rare in the country to observe motorcyclists riding with their headlight switched on during clear daylight. The dual driver group also believed that riders have more effort compared to car drivers in exercising more caution during wet weather conditions which are also found in Crundall et al. (2008). According to Wessenfeld et al. (2013), these also suggest higher hazard perception among dual drivers with regards to rider safety. They also agreed more on having similar characteristics to riders which are expected since they are also motorcycle riders. These are in agreement with de Craen et al. (2011) that suggest that dual-driver have more knowledge on the rider's situation rather than driver only group.

Conspicuity of riders seems to be the prominent issue from looking at the top items and the difference in attitude between the driver groups. This is also observed from the

responses left by the respondents on the last question where they were asked if they have any additional comments after administering the compulsory parts of the question. Among the popular suggestions or complaints include the use of proper attire while riding, blind spot treatment, the danger of lane filtering, driver awareness, exclusive lane and the use of the signal indicator. This shows that perception toward riders is dependable on the conspicuity of rider and motorcycle in addition to driver's expectation and knowledge about riding and riders (de Craen et al., 2011). In addition, a study by Musselwhite et al. (2012) also suggests that there is a possible competitive tendency among the car drivers and motorcycle riders with regards to the appropriate use of space on the road.

On another note, the number of respondents filtered out of the analysis is quite high. More than a hundred samples have to be discarded due to eligibility issues including the location where drivers frequently drive. This downside from the online survey is expected since the snowball approach was allowed by encouraging respondent to share the online survey to others. Thus, the form can reach a wider population including potential respondents out of targeted location. The control for this problem can be performed by posing proper questions to filter out improper samples while instructions and the overall questions must be phrased accurately but simple enough for respondents to understand.

5. Conclusion

The study found that among car drivers there exist certain attitudes towards motorcyclist which can be categorized as a negative attitude, emphatic attitude and awareness of perceptual problems. Both driver only and dual drivers show evidence that they exhibit considerate and understanding nature towards their fellow motorcycle riders. It is also evidenced that significant differences in the attitude among car drivers to motorcyclists are available between drivers only and dual drivers (driver and rider) in the way that dual drivers are found to be more considerate and empathetic to riders.

5.1 Recommendation

Drivers must have more understanding and compassion towards the motorcyclist. Continuous campaigns and media exposures can help create and increase the knowledge and awareness among drivers about rider's vulnerability. Taking into consideration that the majority of car-motorcycle collisions are faulted by cars (Zainal Abidin et al., 2018), motorcycle presence and lack of conspicuity compared to other vehicles should always be expected and considered by all drivers.

Due to the agreements on the difficulty among drivers to notice the presence of motorcycles, riders must make efforts to make their motorcycle or themselves more visible in the traffic. One way is to avoid riding behaviours that can compromise their visibility on the road like wearing improper attire, weaving in and out of traffic and not using signals. They should also learn about the danger of blind spot in larger vehicles and use the separate motorcycle lanes whenever possible or available. These can be further aided by enforcement activities.

On the other hand, driver training curriculum can include the aspect of attitude difference to create more awareness in complimentary to safe and defensive training. Drivers should be exposed to expect, look, notice and manoeuvres their vehicles appropriately considering the presence of motorcycles sharing the same road.

Reference

Beanland, V., Pammer, K., Sledziowska, M., & Stone, A. (2015). Drivers' attitudes and knowledge regarding motorcycle lane filtering practices. *Proceedings of the 2015 Australasian Road Safety Conference.*

Crundal, D., Bibby, P., Clarke, D., Ward, P., & Bartle, C. (2008). Car driver's Attitude towards motorcyclists: a survey. *Accident Analysis and Prevention*, *40*, 983 – 993.

Crundall, D., Clarke, D., Ward, P., & Bartle, C. (2008). Car drivers' skills and attitudes to motorcycle safety: A review. *Road Safety Research Report No. 85*. Department for Transport London.

De Craen, S., Doumen, M., Bos, N., & van Norden, Y. (2011). *The roles of motorcyclists and car drivers in conspicuity-related motorcycle crashes*. SWOV, Leidschendam.

Musselwhite, C. B. A., Avineri, E., Susilo, Y. O., & Bhattachary, D. (2012). Public attitudes towards motorcyclists' safety: A qualitative study from the United Kingdom. *Accident Analysis and Prevention*, *45,* 105 – 113.

Nasuruden, M. I. (2018). *Fokus aspek keselamatan penunggang motosikal*. Retrieved on 12 Dec 2018 from http://www.utusan.com.my/berita/nasional/fokus-aspek-keselamatan-penunggang-motosikal-1.607653

Royal Malaysian Police. (2016). *Statistical report on road accident Malaysia 2016*. Traffic Enforcement and Investigation Department, Bukit Aman Police Headquarters, Kuala Lumpur.

Weissenfeld, A., Baldock, M., & Hutchinson, T. P. (2013). Motorcyclist perceptions of risk when riding. *A proceeding paper in 2013 Australasian College of Road Safety Conference.*

Zainal Abidin A. N. S., Abdul Jalil N. A., Wong S. V., & Tan C. Y. (2018). Evaluating risk factors in motorcycle-passenger car crashes through real-world investigation. *Journal of the Society of Automotive Engineers Malaysia*, *Volume 2, Issue 1*, pp. 92 – 105.

Research Report

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