

## Road Safety and Motorcyclists' Behavior and Offences by Gender

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**Abstract:** This paper discusses motorcyclists' behavior and their compliance to road safety (MBCRS) and examines the types of offences by gender. A qualitative method was adopted by using behavior mapping technique and the units of analysis were investigated at a busy intersection during working days from morning until night. The result turned out to coincide with previous studies that revealed males committed the offences most often, where total male offences amounted to 427 (88.4%), while total female offences were 56 (11.6%). Offences committed by male motorists were dominant in all categories such as beating red-light, wrong-way direction and riding without helmet. It can be argued that male motorcyclists are found to have more tendency to disobey traffic laws at intersections and T-junctions. The study proposes that regular patrolling and strict enforcement need to be intensified to reduce traffic offences and increase road safety.

**Key words:** Road safety • Motorcyclists' behavior • Offences • Gender

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### INTRODUCTION

The evaluation of motorists' behavior and their role in road safety is particularly complex. The focus of behavioral factors in road safety research was initially approached by evaluating their abilities and expertise in relation to the age of motorists. Among demographic factors, age and gender are predictors of risky driving behavior. It has been well established by studies and accident databases from various countries that young novice motorists are more frequently involved in traffic accidents than motorists in other age groups. In general, a variety of factors, such as inadequate skills and/or a greater propensity to assume more risk, have frequently been indicated as the main causes of accidents in this age group.

Differences in driving behavior between male and female drivers have also been the focus of several previous investigations. Most of the findings have supported the notion of different driving characteristics. Significant differences in driving characteristics were found between the two sexes with regard to speed, skill and attitude. This led to the discovery on the impact of gender on human behavior and social interaction, such as gender influences on the involvement of physical activity

[1], teenager development [2] and performance evaluation [3]. It was argued that specific drivers' characteristics may affect certain types of road accidents [4].

As affirmed by previous studies, MBCRS were highly influenced by gender factors. Thus, this study investigates motorcyclists' behavior and their compliance to road safety (MBCRS) and examines the types of offences by gender. This finding would serve as a reference for relevant authorities in designing a more efficient traffic management system [5] and equally help them improve road safety [6].

**Literature Review:** According to the past research, attitudes toward traffic safety are proven to correlate with aggressive driving behavior and self-reported accident involvement [7-9]. The act of driving is closely related with driver's behavioral factors. Some of these factors need to be discussed in a broader study. Demographic characteristics of age and gender are said to have strong influence on driving [10-14]. In this study, the researchers focused on which gender is mostly involved in committing offences at traffic light T-junctions. In several studies related to gender across various countries, they showed the prevalence of men motorcyclists of getting involved in more MBCRS. For

instance, one research paper from Western Australia has clarified that young men are more involved in MBCRS than other demographic groups [15-17]. Similarly, based on Turkey's annual statistics [18], it stated that male drivers are more involved in MBCRS than female drivers. [18] have equally stated that many male drivers have become commonly involved in MBCRS [19]. Whereas, female in Finland are observed to show a more positive attitude towards their safety and regulations, compared to male drivers. Female drivers were less involved in accidents and they committed less traffic offenses than males and female drivers showed a more positive attitude toward traffic safety and rules than males [20]. According to [21], problem behavior concept on driving and young drivers' life style [22] are usually attributed to both sexes, although authors generally agree that problem behavior or risky lifestyles are more common among males. In Finland, attitudes and behaviors between males and females in 1978 compared to 2001 remained the same or even increase [20]. Hence, male has more tendency to get involved in MBCRS. On his characteristic comparison of crash-involved red light running drivers with those of non-violating drivers in traffic light crashes, Lawson [23] found that red light runners were more likely to be male and under 35 years of age. Wrong way direction (WWD) fatal crashes are higher for male drivers

versus female drivers at ratio then 2:1 [24]. With regards to riding without helmet, various researchers found this kind of offences dominated by males, in studies in Washington DC [25], Greece [26] and Malaysia [27]. Therefore, gender is perceived to be a strong predictor of accidents [28] and involvement in MBCRS. Most aforementioned researches were executed in urban context and this study highlights motorcyclists' behavior in suburban context, which is not well documented.

## MATERIALS AND METHODS

This research used a qualitative approach through behavioral mapping methods. The behavior mapping is carried out by using direct observation technique at traffic light T-junctions. The observation technique was focused on single motorcyclists only. Figure 1.0 below shows the sketch of one observation site.

During the field study, observations were conducted for a period of 11 hours, starting from 8 am to 7pm. 15-minute time intervals were used to record the number of MBCRS cases of male and female motorists; similar method was adopted by previous researchers [29], [30]. Subsequently, the MBCRS offences were classified into several categories: beating red-light, wrong-way direction and riding without helmet.

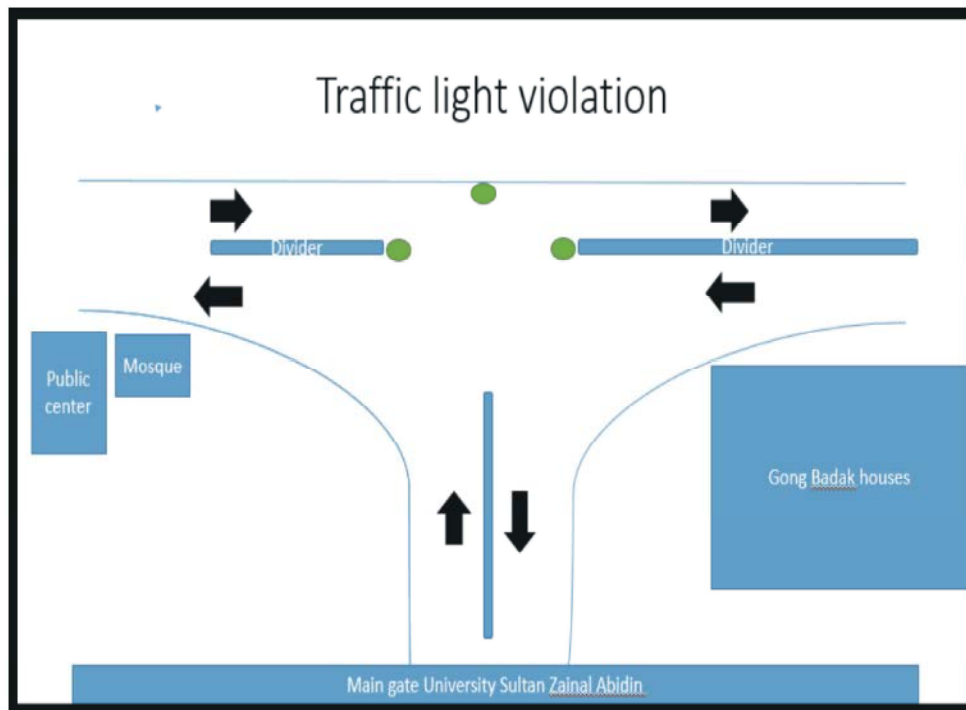


Fig. 1: A picture showing the sketch of the observation site in front of the main gate of Universiti Sultan Zainal Abidin

**RESULTS AND DISCUSSION**

The study focused on the relationship between gender and types of MBCRS offences only. Figure 2.0 below shows the number of MBCRS offences committed by different gender.

The study found several types of MBCRS being committed at the observed site. The total number of MBCRS cases recorded on a single working day were 483, out of which male MBCRS offences amounted to 427 cases, while female MBCRS were just 56 cases.

As stated earlier, MBCRS had been categorized into three types: beating red-light, wrong-way direction and riding without helmet. In the first type of MBCRS offence - beating red-light, it was observed that majority of the cases were committed by male motorcyclists. From the above figure, 146 cases of MBCRS were committed by male motorcyclists, whereas female motorcyclists had only 14 cases of MBCRS. This finding was corroborated with studies in United States which stated that 86% of MBCRS offenses were common among 20-year-old male youths [31]. The same researchers found that older males

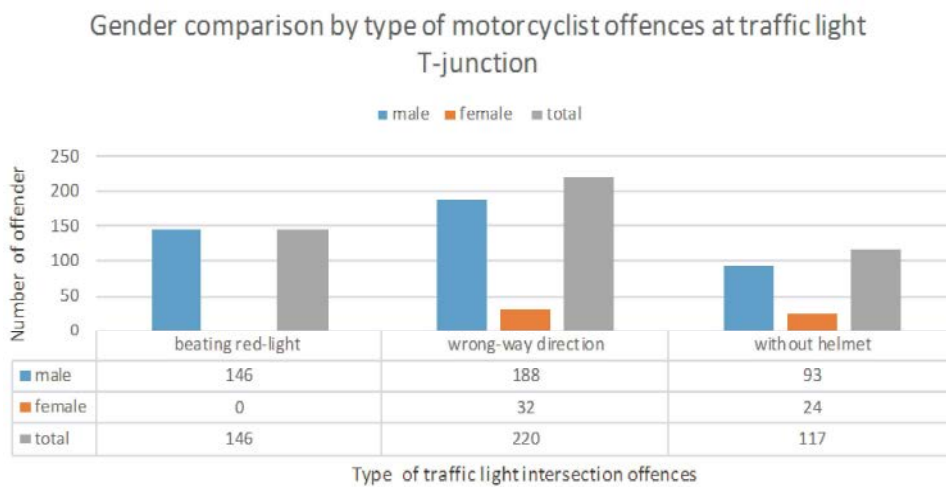


Fig. 2: Bar chart shows the types of MBCRS offences committed by male and female motorcyclists



Fig. 3: Pictures showing the three types of MBCRS offences at the observation site: wrong-way direction (upper left), not wearing helmet (upper right), beating red-light (lower left and lower right)

committed MBCRS in the evenings than during the days [31]. Studies in China also observed that male motorcyclists were caught more in MBCRS offences than females [32]. Another research conducted in Israel stated that MBCRS perpetrated by men was slightly higher than women's MBCRS [33]. One study finding from Singapore revealed that women were more susceptible to MBCRS than men [34].

The second MBCRS offence is wrong-way direction. From the same figure, 188 male motorcyclists were involved in this type of offence as opposed to 32 female motorcyclists. This comes as no surprise as previous studies revealed similar findings: many teenagers and inexperienced male motorcyclists were involved in wrong-way direction [35]. Equally, in the United States, it was found that wrong-way direction offences were dominated by male motorcyclists with a ratio of 2:1 female motorcyclists [24]. Based on statistics from 2004 to 2009 in Illinois, USA, it showed that 60 percent of wrong-way direction offenders consisted of old drivers and male drivers [24].

The third MBCRS offence is riding without helmet. From the observation, it was found that 93 male motorcyclists were caught involved in riding without wearing helmet, as opposed to 24 female motorcyclists. The finding coincided with that in the United States which stated that about 45 percent of motorcyclists were not wearing helmets, from which 64 percent of them were males [36]. In Vietnam, the conformity to wearing helmet among motorcyclists was 29.94%, but male motorcyclists were more likely to wear them as compared to female counterparts [37]. Males were more likely to wear helmets compared to females on all road types [37]. Figure 3 shows images of the types of MBCRS offenses at the observation site.

### CONCLUSION

The study found that male motorcyclists committed higher MBCRS in all types of offences. The findings are compatible with the current literature as the study reached similar conclusions, although other studies had opposite or different conclusions. Some of the differences in results may be attributed to cultural and social variations. Future studies suggest additional MBCRS variables to be considered such as time interval, other demographic factors and drivers' background profiles.

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