

## Studies pertaining to Illegal Street Racers' Behaviour: Literature Review

Mohd Roslan Mohd Tahir

Department of Social Science, Open University Malaysia

Email: jantanamel@yahoo.com

Haziah Sa'ari

Faculty of Information Management, UiTM Shah Alam, Malaysia

Email: aziecrystal2@gmail.com; r.johare@yahoo.com

Rusnah Johare

Faculty of Information Management, UiTM Shah Alam, Malaysia

Email: r.johare@yahoo.com

DOI Link: <http://dx.doi.org/10.6007/IJARBSS/v7-i6/2965>

Published Date: 12 June 2017

### Abstract

Street racing has long been identified as a threat to civil society with significant social and economic impact. In Malaysia, the high fatal accidents rate involving motorcyclists performing illegal street racing has dominated the news in the local newspapers and social media and have caused legislators, regulators and the public to question factors that contribute to these issues. This paper is an attempt to gain greater insight into the factors influencing the risky behaviours associated to violating traffic regulations among the illegal motorcycle racers termed "Mat Rempit" in Malaysia identified in the literature. The findings of this review not only could be used as reference for future research but also as reference by the various authorities to understand the issues more closely.

**Keywords:** Illegal Street Racing, "Mat Rempit", Violating Traffic Regulations, Risky Behaviour.

### 1.0 Introduction

Road traffic accidents have become a major public health concern in both developed and developing countries alike as they constitute a major cause of fatalities globally. The World Health Organization (WHO, ) estimated that without the effective implementation of efficient counter measures, an 80% increase in road traffic accidents should be expected in low-and middle-income countries during the period 2000 to 2020 of which Malaysia is a part (Peden et.al., 2004). Traffic crashes represent a significant cost for the Malaysian society. Based on the willingness-to-pay estimation, traffic crashes cost each year around 1.6% of the

national gross domestic product. The statistical value of life in Malaysia is RM1.3 million, around EUR330,000.00 (OECD, Road Safety Annual Report, 2015).

The above statistics make the traffic accidents a major issue in Malaysia as they are among the leading causes of death and injuries. Based on provisional data by the Royal Malaysian Police, there were 6,674 road deaths in 2014. Motorcyclists' riders are the most affected by road crashes. They represented 62% of all fatalities by comparison to car drivers and passengers represent 20% fatalities (OECD, Road Safety Annual Report, 2015). These motorcycle fatalities statistics may well include the illegal street racing as it has long been identified as a threat to civil society with significant social and economic impact (Vingilis & Smart, 2009; Levant et al., 2009) and it threatens the lives of other road users and causes unnecessary nuisance to the public as it involves extreme speeding on open roadways. The Malaysian Highway Authority (LLM) reported that racing as a determining factor in 2015 in order to more accurately address fatal crashes involving illegal street racing (Wan Shahrazad et al., 2012; Syarizal et al., 2017).

The Malaysian Institute of Road Safety (MIROS) concluded that, compared with all deadly crashes, street racing fatal accidents were more likely to occur on urban roadways and with risky behavior with numerous incidents reported in the media (Wan Shahrazad et al., 2012; Syarizal et al., 2017). Taking one of the incidents on July 2006, the Malaysia-Singapore Second Link in Johor became a popular place of illegal racing in the State of Johor. The Johor police authority and the Road Transport Department, with the highway operation PLUS Expressway, have launched major operations to crack down on illegal racing; more than 600 people have been arrested in these operations. The seriousness of the problems of illegal motorcycle racing in the State of Johor is evident which may be associated to the statistics of road accidents involving motorcycle riders and pillion riders in five areas of Wilayah Iskandar namely Johor Bahru Selatan; Seri Alam; Johor Bahru Utara; Kulai; and Iskandar Puteri (Published Report of Johor Contingent Police Headquarters, 2015).

## **2.0 Literature Review**

### **2.1 Past Studies on Illegal Street Racing**

It is evident that there are many factors can be associated with motorcycles fatalities namely the movement of the characteristics of the motorcycles, drivers' behaviour, present times perspective and risky-related behaviour that may be associated to illegal motorcycles street racing. Nevertheless speeding is a contributing factor in almost a third of these crashes (Annual Report 2015). As the travel speed of a motorcycle increases so does the risk for a crash as well as the risk of a fatality (Kloeden et al., 1997).

One of the early studies was the one carried out by Leigh (1995) on illegal street car racing in Sydney, Australia. The findings of the study suggest that the street racing is one of the manifestations of the norms of masculinity of a car-oriented culture. Another study by Leigh (1996) suggests that street racing was seen as a youthful activity and strongly associated with rebellion against parents, society, and authorities.

Majority of illegal street racers were involved in traffic violation, road rage, as well as violation of social norms and values were the findings of a study carried out by Parker and Stradling (2001). On the other hand, speeding, driving recklessly and aggressive behaviours were the findings of a study conducted by Vaaranen and Wieloch (2002). Studies carried out by Tranter and Warn (2008) and Leal and Watson (2011) on Australian street racing offenders,

found that majority of them had reported having bad driving records in the last three years prior to their involvement in illegal street racing.

Among all human factors, several researchers have intensively studied and considered psychological traits as significantly affecting risky driving behaviour (Ulleberg and Rundmo, 2003; Dahlen et.al., 2005; Kim & Yamashita, 2007). The result of their studies demonstrated that personality may indirectly influence risky driving behaviours via attitude. While studies by Ryb et.al., (2006), Harre and Sibley (2007), and Vanlaar et.al. (2008) showed that risk perception significantly affects risky or unsafe driving behaviours which may include illegal street racing. While a study carried out by Clarke et.al. (2005) found that overconfidence as one of the primary reasons why young motorcyclists express risky riding behaviours.

In Taiwan, Wong et.al (2009) studied the determinants behind young motorcyclists' risky behaviour that may lead to illegal street motorcycle racing. The results of their study concluded that three primary personality traits of young motorcyclists, namely sensation seeking, amiability and impatience as predictors of young motorcyclists' risky behaviour.

Akaateba and Amoh-Gyimah (2013) investigated the relationship between age and genre attitude towards traffic violations and the motivations influencing the violation of traffic laws in Ghana. The study showed that gender and age have significant influence on attitudes towards traffic violations. The perceived gains associated with traffic violations also to a large extent influence driver attitude towards traffic violation.

In New Zealand, a study carried out by Fergusson et.al. (2003) found that street racing was associated with deviant peer affiliations, substance abuse, and criminal activities among the youngsters' samples of 18 to 21 year old. In New Zealand, a study conducted by Warn et.al. (2004) found that sensation seeking of male students aged between 15 and 24 years was directly associated with illegal street racing, risky driving, and positive attitude towards speeding.

Whereas in Europe studies have found that young people who reported involved in street racing were also reported engaging in other risky behaviours and criminal activity, such as drinking, drug use, and risky driving (Vaaranen & Weiloeh, 2002). In Italy, Bina et.al. (2006) studied adolescents and found that young Italian males who were involved in street racing and other risky driving activities were more likely to engage in anti-social behaviours.

Male drivers were typically identified as frequently involved in racing and tended to violate traffic regulation were the findings of a study conducted by Kinght et.al. (2004). While studies by Baeirness (1993) and Deefenbacher et.al. (2001) identified that illegal racing activities were related to personality traits such as impulsivity, aggression and hostility. But West et.al. (1993) findings were associated to social deviance. However, sensation seeking was a significant determinant of the choice of risky activities such as motorcycling racing, parachuting, skydiving, adventuresome travel and cigarette smoking (Calhoon, 1988; Conolly, 1981; Rossi & Cereatti, 1992; Zuckerman et.al., 1990).

## **2.2 Past Studies on Illegal Motorcycles Street Racing in Malaysia**

In Malaysia, the literature suggests very limited research focusing on the behavioural reasons of *Mat Rempit's* involvement in illegal motorcycle street racing and related activities, despite the alarming issues and problems related to their activities and threats. Studies by Ismail (2006), Ismail and Ibrahim (2007) focused on socio-demographic and the characteristic profiles of youth involved in illegal motorcycles street racing based on quantitative data.

A study by Norudin and Azman (2011) explored the issues of illegal racing in the State of Perak. Among the factors found to be related to illegal racers' behaviours include elements of stress, attractiveness of rewards, role of peers and psychological development among the youths. Wong (2011) studied 2,022 self-identified illegal motorcycle street racers *Mat Rempit* from 11 States and the Federal Territory of Kuala Lumpur using survey self-administered questionnaires. The study showed that variables of ethnicity, participant education attainment, occupation, parents' marital status, household income, maternal education attainment and parental strictness were statistically significant predictors of illegal street racing behaviours.

Identifying the social, economic and psychological factors in street racing in Malaysia was the objective of a study carried out by Nurullah et.al. (2012). The study assessed gender differences in terms of the causes of participation in street racing, and the street racers' personality in terms of spiritual well-being, self-efficacy and self-esteem. The study found that demographical factors (age, gender, educational attainment); familial factors (parenting style, relationship with family members, family violence, parental conflict), social factors (social contact with the street racers, peers influence, mass media, social pressure, social labelling, social isolation, opportunities to join illegal racing, limited surveillance of authority, limited recreational and sports facilities), psychological factors (self-image, desire for recognition and attention, escape from social-psychological stress, self-actualization, spiritual well-being, self-efficacy, self-esteem) among the motivating factors towards committing illegal motorcycles street racing.

On the other hand a study by Wan Shahrazad et.al. (2012) examined the differences of self-esteem, resilience and leadership among illegal motorbike racers and normal adolescents. Whereas a study carried out by Rozmi et.al. (2015) aimed at examining the relationship between impulsive traits, sensation seeking, aggression and risk taking behaviours among illegal motorcycle street racers in Malaysia. Another study by Noh Amit et.al. (2016) aimed at examining the age, educational and selected psychological characteristics of *Mat Rempit* in Malaysia. The correlation analysis showed that there was a strong positive correlation between sensation seeking and illegal motorcycles street racing behaviours.

Table 2.0:

The synthesis of the literature survey on the variables identified by the various studies investigating illegal street racing *Mat Rempit* in Malaysia.

Researcher	Focus of the study	Key concept / issues	Research Method	Findings
Ismail (2006), Ismail and Ibrahim (2007)	The influence of socio-demographic and the characteristic profiles on illegal motorcycles street racing.	Relationship between socio-demographical factors and <i>Mat Rempit's'</i> behaviours.	Quantitative – questionnaire surveys	Socio-demographic and the characteristic profiles significantly influenced youth involvement in illegal motorcycles street racing.

Norudin and Azman (2011)	Determinants of <i>Mat Rempit's</i> illegal street racing behaviours	Relationship between stress, rewards, peers, psychological factors and illegal street racing	Quantitative – questionnaire surveys	Among the factors found to be related to illegal racers' behaviours include elements of stress, attractiveness of rewards, role of peers and psychological development among the youths.
Wong (2011)	Demographical factors as predictors of <i>Mat Rempit's</i> behaviour	Relationship between demographical factors and <i>Mat Rempit's</i> behaviour	Quantitative – questionnaire surveys	Variables of ethnicity, education attainment, occupation, parents' marital status, household income, maternal education attainment and parental strictness were statistically significant predictors of illegal street racing behaviours.
Nurullah et.al. (2012).	Assessed gender differences in terms of the causes of participation in street racing, and the street racers' personality in terms of spiritual well-being, self-efficacy and self-esteem	Relationship between gender, personality traits and <i>Mat Rempit's</i> behaviour	Quantitative – questionnaire surveys	Demographical factors; familial factors; social factors; and psychological factors significantly associated with <i>Mat Rempit's</i> behaviour
Wan Shahrazad et.al. (2012)	Examined the differences of self-esteem, resilience and leadership among illegal motorbike racers and normal adolescents	Relationship between self-esteem, resilience, leadership and <i>Mat Rempit's</i> behaviour and normal adolescents	Quantitative – questionnaire surveys	Self-esteem, resilience and leadership among illegal motorbike racers significantly influenced <i>Mat Rempit's</i> behaviour

Rozmi et.al. (2015)	Examining the relationship between impulsive traits, sensation seeking, aggression and risk taking behaviours among <i>Mat Rempit's</i>	Relationship between impulsive traits, sensation seeking and aggression and risk taking behaviours among <i>Mat</i>	Quantitative – questionnaire surveys	Impulsive traits, sensation seeking and aggression and risk taking behaviour significantly predicted <i>Mat Rempit's'</i> behaviour
Noh Amit et.al. (2016)	Examining the age, educational and selected psychological characteristics of <i>Mat Rempit</i> in Malaysia	Relationship between age, educational, selected psychological characteristics and <i>Mat Rempit's'</i> behaviours	Quantitative – questionnaire surveys	Demographical factors and psychological factors are main predictors of <i>Mat Rempit's</i> behaviours

### 3.0 Gaps in Past Studies on Illegal Motorcycles Street Racing in Malaysia

Despite the alarming issues and problems related to *Mat Rempit's'* risky activities and their impacts to the Malaysian society, most of the study on conducted on the individual factors, demographic factors and socio-economic factors were carried out in isolation using the quantitative method without using a complete theoretical framework to underpin the studies. Whereas there are theories that can be used such as the trait theory, personality theory, psychoanalytic theory, theory of reasoned action and theory of planned behavior. Thus, through the quantitative method, it is impossible to explore from the outset the relationship between individual factors, demographic factors and socio-economic factors with the cognitive and emotional reasons and planned behavior.

The statistical analysis of the past studies (Ismail (2006), Ismail and Ibrahim (2007), Norudin and Azman (2011), Wong (2011), Nurullah at al. (2012); Wan Shahrazad et.al. (2012), Rozmi at.al. (2015) and Noh Amit at.al. (2017) did not measure and connect the individual factors, demographic factors and socio-economic factors into the inner part of the personality structure and cognitive processes of the individual attitude of the *Mat Rempit* involved in the studies. The past studies could not exactly provide answers to *Mat Rempit's'* reasoned actions and planned behavior or unplanned behavior pertaining to the violations of traffic regulations due to the lack underpinning established theories to support the findings.

Contrary to the previous studies, this proposed study on illegal motorcycles racing at five areas in Wilayah Iskandar in the Malaysian State of Johor will provide a detail effects of the components of individual attitude which may influence their reasoned actions and planned behaviors to get involved in illegal motorcycle street racing which will be based on case studies by means of qualitative data gathering. But to achieve this objective, an analysis of related theories is necessary in order to establish a theoretical or philosophical framework to underpin this proposed research project.

### 3.1 The Research Theoretical Underpinning

There are many theoretical frameworks for understanding risk behaviors of adolescents and young adults (Wong, 2011) but the researchers have to choose the theories that most suitable for this proposed study. The literature suggests that illegal street racer is a mixer of personal traits of individual factors which results in individual riding intention behaviors translated into risk perception actions of traffic violations via attitude. Ajzen has included the element of attitude in his theory of Reasoned Action (TRA), a social psychology model, which explained the intention behavior reasons. This theory is widely used by many scholars to determine the intention of individual behavior in a multidisciplinary area. In 1991, Ajzen proposed an extension of the TRA when he developed the Theory of Planned Behavior (TPB) in which he included psychological traits of attitude, subjective norm and perceived behavior control in the TPB because it was found that attitude, subjective norm and perceived behavior control affect behaviors via intention. Ulleberg and Rundmo (2003), Ryb et.al. (2006), Harre and Sibley (2007) and Vanlaar et al. (2008) has used the TPB in their studies on risky behaviours of street racers but they are quantitative in nature.

Attitude is defined as an essential factor that reflect the *Mat Rempit's* preparedness to participate in illegal motorcycle street racing process. It involves individual *Mat Rempit's* individual's emotional and mental process on illegal street racing. It has been identified that attitude influences behavior (Ullenberg & Rundmo, 2003; Ryb et.al., 2006; Harre & Sibley, 2007; and Vanlaar et al., 2008) concur that attitude plays an important role in influencing racers to commit illegal street racing and violate safety traffic regulations. Subjective norm on the other hand is associated with the behavior that is prompted by one's desire to act as what is expected of him by others (Ajzen, 1991). When this concept is applied to the *Mat Rempit*, it refers to a *Mat Rempit's* belief that he/she is expected to engage or otherwise in an illegal street racing behavior by others who he considers as important such as his/her peers, lovers or close friends. Perceived behavioral control is associated with a *Mat Rempit's* perception of what he/she naturally possesses in order to enable him/her to perform a behavior such as relevant information, skills, abilities, feelings and any other necessities required to perform Illegal Street racing behavior.

Due to the reliability of the TPB in determining the intention of individual behavior in a multidisciplinary area, the researchers will use the TPB in this study of *Mat Rempit's* behavioral attitude towards illegal motorcycles racing which violates traffic regulations in order to explore the contributory factors to their reasoned actions and planned or unplanned behaviours.

### 4.0 Research Method

Data collection methods are an integral part of research design, therefore in using several methods on the same study and through the combination of methodologies would be beneficial particularly in strengthening the research design. The data collection method will use two major instruments in fulfilling the aim of the study based on the research framework through survey questionnaire and face-to-face interviews. In fulfilling the objectives of the study, it is appropriate to consider survey as the approach in collecting data from the samples of *Mat Rempit's*. The study intends to uncover the individual profiles and characteristics of *Mat Rempit's* in the State of Johor, Malaysia. Survey research involves gathering of information directly from a group of individuals. The intention of the questionnaires survey will be to get more information on the demographical characteristics and profiles. While

qualitative data from face-to-face interviews will be used to measure the respondents' attitude, subjective norms and perceived behavior control against the individual psychological factors, demographical factors and socio-economic factors in order to determine the reasoned action and planned behavior of the Malaysian *Mat Rempit's* to commit or not commit illegal motorcycle street racing consequently violating traffic regulations.

## 5.0 Conclusion

The primary purpose of this paper is to highlight the literature pertaining to the factors that may influence youngsters to get involved in illegal street racing and illegal motorcycles street racing and consequently committing violation of traffic regulations. There are multiple motivational factors towards illegal street racing and motorcycle street racing identified in the literature that could be grouped into three main categories namely the individual psychological factors, demographic factors and socio-economic factors. This proposed study will in away validate the TPB which may add new dimensions and understanding of the essential role of individual psychological factors in determining the reasoned actions and planned behavior in the context of the Malaysian environment which may differ from other environmental context of different countries. Other than the validation of the TPB, the expected contributions of this proposed study would explore the relationships of various factors that may affect the behavior of the Malaysian illegal motorcycle street racers which will provide a better understanding on the part of the various Malaysian authorities so that appropriate measures could be taken to address the problem. It is hoped that the findings of the study will provide some insight into the relative importance of the various factors which influenced the motorcyclists to get involved in illegal street racing and consequently violating traffic regulations.

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