



Reasons underlying behaviour of motorcyclists disregarding traffic regulations in urban areas of Indonesia



Yusak O. Susilo^{a,*}, Tri Basuki Joewono^b, Upali Vandebona^c

^a Department of Transport Science, Royal Institute of Technology (KTH), Teknikringen 10, 100 44 Stockholm, Sweden

^b Graduate Program, Parahyangan Catholic University, Jl. Merdeka 30 Bandung 40117, Indonesia

^c School of Civil and Environmental Engineering, University of New South Wales, Kensington, Campus, Sydney 2052, Australia

ARTICLE INFO

Article history:

Received 7 May 2014

Received in revised form 16 December 2014

Accepted 16 December 2014

Available online 20 December 2014

Keywords:

Motorcyclist

Repetitive traffic violation

Indonesia

Psychological factors

Social norms

Perceived control

Structural equation modelling

ABSTRACT

Over the last decade, motorcycle use has been rapidly increasing in Indonesia as have violations of traffic rules committed by motorcyclists. This study aims to explore the impacts of motorcyclists' attitudes, habits, preferences, and travel patterns on their behaviour in disregarding traffic regulations in three cities in Indonesia. The theory of planned behaviour and structural equation modelling are employed to explore these relationships. Consistent with results from previous studies in developed countries, an individual's beliefs and attitudes, social norms and perceived behaviour control significantly influence behaviour in disregarding traffic rules. Young adults and students are found to be more likely to frequently violate traffic regulations. However, unlike previous findings from developed countries, in Indonesia, males are less likely to disregard traffic rules than females. Overall, pushing the motorcycle through a (very) narrow gap, speeding, driving recklessly, and overtaking on the wrong side are the most frequent traffic violations that make up repetitive violation behaviour among urban motorcyclists in Indonesia. The results highlight the need to revisit Indonesian National Traffic Law traffic violation classification and penalties and separate violations that are likely to cause fatal results, thus requiring tougher law enforcement, from violations that are unlikely to have fatal consequences.

© 2014 Elsevier Ltd. All rights reserved.

1. Introduction

In the last two decades, economic conditions and motorisation in Southeast Asian countries have experienced a rapid growth rate. The motorcycle has become a popular transport mode in this region, including Indonesia, Vietnam and Thailand (Kaltheier, 2002). Currently, Indonesia is the third largest motorcycle market in the world after China and India. In Indonesia, there were 13.6 million motorcycles in 2000, increasing to 32.5 million in 2006 and 76.4 million in 2012. In 2012, the total number of motorised vehicles in Indonesia was 94.4 million (Statistics Indonesia, 2012). It has been estimated that by 2015, there will be one motorcycle for every two persons in this country (AIS, 2009) which has a population of about 240 million.

The motorcycle is a popular transport mode among Southeast Asian travellers mainly because of the affordability, flexibility, and manoeuvrability on congested roads typical in the region.

At the same time, the growth of motorcycle users has been seen as disruptive to users of other travel modes. Aggressive encroachment of pedestrian space and lack of compliance with road rules have been widely considered as a major cause of road accidents (Indriastuti and Sulistio, 2010) although statistically, motorcycle-related accidents are not over-represented in Indonesian traffic accident statistics. In 2012, motorcyclists were involved in 72% of all accidents in Indonesia, not very different to the percentage of motorcycles. However, a significant proportion of these accidents are fatal and, on average, one fatal accident every hour is attributed to motorcycles (Statistics Indonesia, 2012). Tagel's (2013) studied a provincial capital in Indonesia, Denpasar, and showed that while motorcyclists represented only 82% of mode share they were responsible for 87% of traffic violations recorded in 2011 (Denpasar BPS, 2014). At the same time, private cars (14% of the mode share) were responsible for 6% of the traffic violations and the goods vehicles (4% of the total mode share) responsible for 3% of the traffic violations.

It is important to consider motorcyclists as a distinct group from other road users. The number of motorcyclists is growing rapidly and they have been widely perceived as relatively more aggressive in their road use behaviour, as observed in other countries. The

* Corresponding author. Tel.: +46 87909635.

E-mail addresses: yusak.susilo@abe.kth.se (Y.O. Susilo), vftribas@unpar.ac.id (T.B. Joewono), u.vandebona@unsw.edu.au (U. Vandebona).

risk-taking behaviour of motorcyclists has been of serious concern also in Australia, India, and many other countries (e.g. Rowden et al., 2009; Dandona et al., 2006). Many studies (e.g. Jamson, 2004; Özkan et al., 2012) have shown that disregarding road rules, errors of judgement and aggression on the road are a result of a complex interaction of intentions, attitudes and the general desire to satisfy sensation-seeking behaviour. Whilst interactions of these behaviours in motorcycle accidents have been studied in developed countries (e.g. Elliott et al., 2007; Watson et al., 2007; Steg and van Brussel, 2009; Musselwhite et al., 2012, etc.), little is understood about the impacts of motorcyclist attitudes and social norms on their habit of violating traffic rules in developing countries. Given that social and cultural characteristics of developing countries are different to developed countries, it is important to understand the impacts and interactions of these attitudes and sensation-seeking behaviour in the local context. This is critical to the development of policies and intervention measures aimed at changing the behaviour of motorcyclists and to fostering a safe driving environment in developing countries (Steg and van Brussel, 2009; Joewono et al., 2014; Musselwhite et al., 2014).

Motorcycle engines in Indonesia and other developing countries are generally less powerful than in developed countries. In Indonesia, the typical motorcycle is powered by an engine in the range of 125–150 cc, and often imported from China or Japan. Currently, Honda enjoys the majority market share. Some motor scooters can be in the 50 cc category and only a few motorcycles have engines above 500 cc (Statistics Indonesia, 2012). In the last decade, motorcycles with automatic transmission have rapidly becoming popular. In 2013, more than 50% of new motorcycles were sold with automatic transmission. These smaller and (semi-) automatic types of motorcycles make different cognitive and concentration demands on motorcycle riders in Indonesia to motorcyclists in US and European countries, who usually use motorcycles with a bigger engine size. Automatic transmission motorcycles give these scooter riders an opportunity to control the vehicle with one hand only. In this way, riders are able to engage in other activities, such as texting and eating, which riders of conventional geared motorcycles generally cannot do. Nonetheless, it is important to note here that multitasking activities whilst driving a vehicle, including listening to music, smoking and texting, are prohibited in Indonesia (National Traffic Law, 2009). However, despite the fact that these violations entitle the traffic police to issue a fine to the motorcyclist on the spot, these multitasking and many other traffic violation behaviours are still very common among Indonesian motorcyclists.

To understand the underlying reasons for motorcyclists' behaviours in repetitively disregarding traffic regulations, this study aims to investigate the effects of motorcyclists' attitudes, habits, preferences, and travel pattern on these types of repetitive traffic violations using data from three major metropolitan cities in Indonesia (Bandung, Yogyakarta and Surabaya). A structural equation modelling technique with a structure design based on the theory of planned behaviour (Ajzen, 1991) is employed here to investigate interactions between internal and external characteristics that influence attitudes and self-justification in disregarding traffic regulations, including the impacts of social norms and lack of law enforcement.

In the next section, a brief discussion of the unique attitudes and behaviour of risk taking and thrill seeking prevalent among motorists is provided. A description of the proposed model and data collection process follows. Then, the analysis and interpretation of the model results are presented. A final discussion is included in Section 6.

2. Attitudes and risk-taking behaviour among motorcyclists

Motorcycle safety has been a focus of safety experts for decades. The main reason for this interest is the high probability of serious

injuries and fatalities to riders involved in such accidents. A study in Taiwan has shown that on average, motorcyclists have approximately three times the risk of fatality than non-motorcycle drivers after adjusting for mileage (Chang and Yeh, 2006). In the UK, a DETR (2000) study has also shown similar outcomes, where motorcyclists killed or sustaining serious injuries, per million vehicle kilometres, is approximately twice that of pedal cyclists and over 16 times that of car drivers and passengers. A similar proportion is also found among Swedish motorcycle and moped riders, compared to car passengers per distance travelled (Aare and von Holst, 2003).

This accident severity condition is not solely due to the design properties of the two wheel vehicle and the vulnerability of riders due to lack restraint and protection compared to car drivers. Motorcyclist behaviour is also partly responsible. For example, Dandona et al. (2006) argued that the reason that motorcyclists in India have a high level of risk of road injuries is that many of them frequently ignore traffic rules, in addition to a significant proportion being unlicensed drivers, shunning use of helmets and driving vehicles in poor condition. Moreover, Chang and Yeh (2006) highlighted that poor driving skills and less experience were increasing the risk of accidents for all. They also found that young male motorcyclists were more likely to disobey traffic regulations and that young riders in particular have a greater tendency to ignore potential risks and motorcycle safety checks. Musselwhite et al. (2012) found that motorcyclists are aware that being on a motorbike exposes them to greater danger. However, they tend to view safety in terms of being able to handle the bike, knowing its limitations and capabilities, without having to lose the thrill of riding. These researchers highlight the need for an in-depth study going beyond impacts and attitudes towards behaviours to investigate motives and decision-making processes behind risky behaviours and attitudes of motorcyclists. Among the motorcyclist population, young adult motorcyclists have been considered a high risk population (Wong et al., 2010), mainly because they are eager to compromise their behaviours, more than other socio-demographic groups.

Steg and van Brussel (2009) noted that violations are deliberate actions that result from social and motivational factors. Based on their study in Australia, Watson et al. (2007) indicated that risk-taking intentions of motorcycle riders were primarily influenced by attitudes and sensation seeking, while safe behaviour intentions were influenced by perceived behavioural control. These attitudes and intentions vary according to socio-demographic groups, social norm and past experience. These findings are also consistent with Elliot et al.'s study (2007) in the United Kingdom. Jamson (2004) found that past behaviour (i.e. engaging in risky behaviour in the past), attitudes and behavioural beliefs (e.g. beliefs that speeding is enjoyable and that speeding allows me to beat the traffic) emerged as significant predictors of intentions to engage in various risky riding behaviours among older motorcyclists.

In term of social influence, Steg and van Brussel (2009), Jamson (2004) and Watson et al. (2007) found that riders who had a positive attitude towards speeding were more likely to speed. It was also found that riders who had a stronger intention to 'show off' when they had a positive attitude towards speeding and thought of having others' approval of their behaviours were more likely to perform stunts (Özkan et al., 2012). At the same time, younger and male drivers tend to express a lower level of normative motivation to comply with traffic laws than female and older drivers (Yagil, 1998). Tunnicliff et al. (2012) describes this propensity for sensation seeking and aggression as a factor in motorcycle riders' decisions to engage in unsafe and, particularly, risky behaviour. High sensation seekers are proposed to either underestimate or accept risks as the price of the sensation or experience.

Download English Version:

<https://daneshyari.com/en/article/572213>

Download Persian Version:

<https://daneshyari.com/article/572213>

[Daneshyari.com](https://daneshyari.com)