

Factors Influencing Risky Driving Behavior in Young Motorcyclists at Bandung City, Indonesia

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Abstract—Risky driving behaviour is one of the causes of road accidents, especially in adolescents. This study is aimed to get factors causing risky driving in teenage drivers in the city of Bandung, based on the Theory of Planned Behaviour (TPB). The method of this study is descriptive. The population of this study are motorcyclists who are classified as adolescents, have been ticketed for at least 6 months from the data was taken, and have lived in the city of Bandung, at least for 1 (one) year. The sampling technique used is random sampling. By using the instrument to measure intention of behaviour, we collected data from 135 respondents. The finding of this research those are among the three determinants of intention to drive in risk, attitude toward behaviour (ATB) is the most influencing factor for the behaviour. It was followed by Perceived Behavioural Control (PBC) factor that has influenced 22,1%, and interestingly the Subjective Norm (SN) only gave 4,8% as an influencing factor to the risky driving behaviour. By believing that behaviour will have positive consequences, the attitude towards risky driving behaviour becomes positive. The limitations of the study are discussed.

Keywords: *risky driving behavior, adolescents, intention, theory of planned behavior*

I. INTRODUCTION

The motorcycle is the preferred mode of transportation because of its ability to move more swiftly when highways are congested and congestion occurs. The vehicles most often involved in traffic accidents were motorcycles, accounting for a total of 3.231 accidents [1]. Even though it is efficient in unfavourable road conditions, according to Houston compared to driving a four-wheeled vehicle, driving a two-wheeled vehicle is a more complex and more difficult task [2]. Because in addition to the balance factor, the rider must also be able to estimate whether the vehicle moving towards him is likely to harm him or not, because the form of a motorcycle that tends to be small sometimes makes the rider in a situation that looks but failed to see related to mistakes or violations what is done by other motorcyclists who actually have a chance to injure it [2]. It is therefore not surprising that the number of traffic accidents involving two-wheeled vehicles is much more common than four-wheeled vehicles or more.

The city of Bandung as one of the major cities in Indonesia has also recorded a history of accidents that is quite high involving motorcyclists throughout 2017. In 2017, the number

of collisions on the highway in the city of Bandung reached 501 cases [3]. Of that number, 127 of them died and 38 others were seriously injured. Data from the Bandung Road Safety Annual Report for 2017 explained that as many as 57 percent of the 501 accident cases that occurred on the highway involved motorbikes. Demographic factors are also quite alarming, data from the same source shows that the highest mortality rate is in the age range of 15-24 years [3].

Risky driving behaviour is one aspect or variable of dangerous driving behaviour [4,5]. Basically, this behaviour is all forms of dangerous driving or driving behaviour, but it is not shown intentionally to harm themselves or other drivers. Also included in this risky behaviour in driving are those that have the potential to endanger other drivers, passengers, as well as pedestrians and other road users [4].

Teen drivers, especially teen motorcyclists are in fact the drivers who are at the highest level to get injured while driving [6]. The reasons why adolescents are the most vulnerable to accidents are that they tend to be inexperienced, overestimated with driving skills, and ignore or look down on the dangers lurking on the highway [6].

The factors are assumed to influence or be the causes of risky driving behaviour are gender, age, driving experience, mental and physical abilities of the driver, and psychological factors such as personality type, temperament, mood and emotions [7]. External factors can be in the form of socioeconomic factors, cultural background, adherence to regulations and policies as well as traffic rules set by the government [7].

Several previous studies conducted by researchers concerned about driving behaviour, both in drivers of two-wheeled vehicles and four-wheeled vehicles [4,8]. The study was conducted on respondents of two-wheeled vehicle drivers who are the age group of 18-24 years, which supports that the majority of those who experience accidents are those who are classified as adolescents or youth groups [3]. Findings in a subsequent study conducted by S. Qodariah, M. Yanuvianti and F. Coralia, about the factors causing aggressive behaviour in driving (aggressive driving behaviour) of 106 teenage motorcyclists in the city of Bandung found that although the majority or 92.59% of respondents did not show aggressiveness in driving, one of the factors that caused

aggressive driving behaviour was being put in danger by 42% of respondents [9].

These findings form the basis of the problem to be examined in this study, namely what are the factors that cause teenage motorcycle drivers to conduct risky behaviour in driving. Specifically, this study aims to get what factors influencing teenage drivers to behave risky when driving. This is important, because although previous studies have found that the tendency to drive aggressively is low [9], respondents who in fact are teenagers, often put themselves in dangerous or risky situations, both for themselves and others. Thus, the urgency of this study is to obtain information about the factors that cause risky behaviour in driving teen motorcyclists, so that these findings will be used to understand how appropriate handling to minimize the number of accidents on the road. In their research about driving intention, Yasunori Kinosaba said that rose users who have driving experience engage in more risky behaviour with other vehicles when cycling than driving [10].

In order to understand how behaviour was influenced by the external and internal factors, we used the framework from the Theory of Planned Behaviour, which can predict individual behaviour specifically [11]. In this model of the theory, intention is the most immediate predictor of behaviour, followed by attitudes, subjective norms, and perceived behavioural control [12-14]. The TPB theory has often proved to be highly predictive of behaviours and behavioural intentions, notably with regards to driving violations [13]. Iversen in her research also support this finding with her statement that measurements of both attitude and behaviour at two data collection points could be useful to achieve a better understanding of the stability of these two measures, and to explore the relationship between these two variables as a psychological predictors of accidents [15].

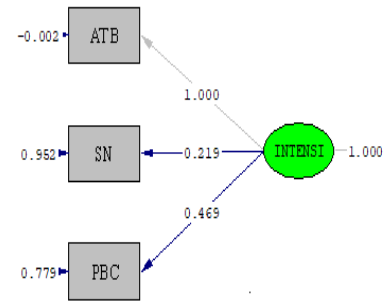
II. METHOD

This study aimed to obtain information about the dominance of the causes, types or forms of risk behaviour in driving and the profile of teenage motorbike drivers in the city of Bandung. For this reason, Theory of Planned Behaviour is used. This research method is quantitative with a descriptive approach [16]. The population in this study are teenage motorcycle users in Bandung, have licence to drive (SIM), have lived in Bandung for at least 1 year, and are willing to become respondents. The sampling technique used was random sampling, and the collection was carried out using a questionnaire, both in hard copy and online. The statistical analysis technique used is regression analysis, because it will illustrate how the influence of attitude dimensions on behaviour, subjective norms, and behavioural control perceptions of intention to behave risky in driving.

III. RESULT

The number of research subjects was 135 respondents. In this study, using confirmatory factor analysis (CFA) data analysis assisted with SPSS 23.0 for windows. The initial CFA model has a coefficient value from ATB (attitude toward behaviour) to the intention to do risky driving in riding a motorcycle in adolescents greater than 1 (100%). While SN

(subjective norms) of 0.210, and PBC (perceived behavioural control). Thus it needs to be modified so that the maximum value is 1.



Chi-Square=0.01, df=1, P-value=0.91093, RMSEA=0.000

Fig. 1. CFA model of intention after modification.

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IV. DISCUSSION

From the results of the research described above, it is known that the value of ATB (attitude toward behaviour) predicts the intention to do risky driving by 100%. SN (subjective norms) is only able to predict 4.8%. Whereas PBC (perceived behaviour control) predicted 22.1%. This means that the determinants of attitudes towards risky driving behaviour in teenage motorbike riders in Bandung, showed 100% results. The existence of appreciation of the likes or dislikes obtained from the evaluation of the consequences that arise if the behaviour is displayed, like the behaviour of risky driving because it brings positive consequences. They perform risky driving behaviour (risky driving behaviour) which is one aspect of dangerous driving behaviour (dangerous driving behaviour) [4,5]. Teenagers do risky driving because they get benefits and are not shown intentionally to hurt themselves or other motorists. This is in accordance with Theory of Planned Behaviour, where someone who believes that displaying certain behaviours will lead to positive results will have favourable attitudes towards the display of behaviour, while people who believe that displaying certain behaviours will lead to negative results, and then he will have an unfavourable attitude [17]. Attitudes toward behaviour are determined by evaluations of behaviour and how strong the consequences are associated with behaviour, in this case the advantage when riding a motorcycle quickly, they become faster so they can avoid traffic jams.

The second largest determinant is the perception of behavioural control (PBC) for risky driving behaviour of only 22.1%. This means that there is little control from within that makes the appreciation of positive behaviour to display risky driving behaviour. Perceptions of behaviour control are adolescents' perceptions of their ability to display risky driving behaviour with all the skills possessed by adolescents to overcome obstacles encountered in risky driving behaviour. For more details PBC describes the feeling of self-efficacy or individual's ability to do a behaviour. PBC is a belief about the presence or absence of factors that facilitate and hinder an individual from performing a behaviour. PBC is also determined by the individual's past experience and also the individual's estimate of how difficult or easy it is to perform a behaviour. An individual's past experiences with a behaviour can be influenced by information obtained from others, for example from the experiences of known people such as family, spouse and friends. Ajzen also explains that a person's behaviour is not only controlled by oneself, but also requires control, for example in the form of availability of resources and opportunities and even certain skills [17]. PBC represents a person's beliefs about how easily individuals exhibit behaviour. When individuals believe that they lack resources or do not have the opportunity to show a behaviour, (low behaviour control) individuals will not have a strong intention to show the behaviour [17]. Thus PBC which only accounts for only 22.1% can be interpreted that one's beliefs about how easily risky driving behaviour is implemented tend to be low. Teenagers believe that they lack the resources or do not have the opportunity to show a risky driving behaviour, teenagers will not have a strong intention to show risky driving behaviour. Could be, the emergence of risky driving behaviour in adolescents in the case of this study, is also determined by other factors.

Meanwhile, the subjective norm determinant of risky driving behaviour in teenage motorcyclists in Bandung was only 4.8%. This means that the presence or absence of a significant person is less influential on the emergence of risky driving behaviour, so that appreciation of the support of a significant person is less able to make the intention of the emergence of risky driving behaviour. In their research about factors influencing risky driving, Mekonnen in their results found that drivers with lower driving experience since their first driving licence were more likely involved in risky driving behaviour compared to those with longer years of driving experience [18]. This is supported too by theory, namely a person's belief that certain individuals or groups agree or disagree, are involved or not involved if he displays or raises certain behaviours. The individuals and groups above are also called Referents. Referent is a person or social group that influences individuals, be it parents, spouse (husband/wife), close friends, colleagues or others depending on the behaviour involved (significant others). Beliefs that underlie subjective norms are called normative beliefs. Individuals who believe that most referents will agree to display certain behaviours, and the motivation to follow certain behaviours, will feel the social pressure to do so. Conversely, individuals who believe that most referents will not approve of themselves display certain behaviours, and lack motivation to follow certain behaviours, so this will cause himself to have subjective norms that place

pressure on him to avoid doing the behaviour [17]. In the case of this study, adolescents did risky driving not because of appreciation of the environment, or did not do risky driving, because of appreciation of the pressure from the environment, but rather because of the situation that made them perform the behaviour. This is in accordance with a study conducted by Tri Basuki Joewono in 2015, found that the attitudes and behaviour of motorcyclists and the behaviour of others when driving are the main reasons why motorcyclists violate traffic regulations. This attitude is also influenced by factors of maturity or self-readiness when driving, the surrounding environment, and the presence of other road users [19].

In some situations, just one or two factors can be used to explain intention, and most of these three factors each play a role in explaining intention. In addition, each individual has different weighting of the three factors which most influence the individual in behaviour [17,20] so that the conclusion someone will do a certain behaviour if the person evaluates the behaviour positively, plus the individual gets social pressure to perform the behaviour, and the individual believes he can and has the opportunity to do the behaviour [17,21].

In this study it can be concluded that teenage motorbike riders in the city of Bandung will do risky driving behaviour because they evaluate the behaviour positively and benefit, but the teenager is a little socially pressured to carry out risky driving behaviour, and the teenager feels less trusting yourself to be able and to have the opportunity to engage in risky driving behaviour [22]. This is also supported by demographic data, many of them also have a SIM, and the SIM is obtained through exams, so they know the risks of the risks of driving risky driving

V. CONCLUSIONS AND IMPLICATIONS

Teenage motorcyclists in Bandung city will do risky driving behaviour because it evaluates the behaviour positively and benefit, but the teenager is a bit under social pressure to carry out risky driving behaviour, and the teenager feels less confident to be able and have the opportunity to perform the risky driving behaviour. The dominant determinant factor affecting risky driving behaviour is attitude toward behaviour (ATB), which is the appreciation of the likes or dislikes obtained from the evaluation of the consequences that arise if risky driving behaviour is displayed

The demographic data shows that teenage motorcyclists who carry out risky driving are generally teenagers aged 20-22 years (60%), generally male (55.6%), high school education (88.1%), still in status students are not yet working (55.1%), and the vehicles used generally still belong to parents (65.9%). It suggested for motorcyclists need guidance and support from parents and the highest authority in their environment so as not to lead to risky driving behaviour. Institutions that have an interest in overcoming risky driving behaviour can provide socialization about traffic rules and the risks that arise when driving teenagers. For the government of Bandung city, especially the Department of Transportation, can bring order to the traffic situation or create an orderly situation of traffic, to socialize traffic rules in adolescents, both in schools and in communities.

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REFERENCES

- [1] D. Maulina, K. Regina Danilasar, F. Nazhira and S. Samia Jufri, "Why riders performs risky riding behavior in Jakarta : The effects of Hazardous Situations and Gender on Risk Perception," *Psychological Research on Urban Society*, vol. 1 (1), pp. 38-45, 2018.
- [2] D.J. Houston, "Motorcyclists," in *Handbook of Traffic Psychology*, London, Elsevier Academic Press, 2011, pp. 375-383.
- [3] Kompas, "Kompas.com," Kompas, 22 November 2018. [Online]. Available: <https://regional.kompas.com/read/2018/11/22/09350811/57-persen-kecelakaan-di-kota-bandung-melibatkan-motor>. [Accessed 3 Januari 2019].
- [4] F.A. Fitrianti and M. Yanuvianti, "Studi deskriptif mengenai perilaku mengemudi berbahaya pada pengguna sepeda motor usia 18-24 tahun di kota Bandung," Fakultas Psikologi Unisba, Bandung, 2013.
- [5] K.A. Suhr and C.S. Dula, "The danger of rumination on the road : Predictors of risky driving," *Accident Analysis and Prevention*, vol. 98, pp. 153-160, 2017.
- [6] E. Constantinou, G. Panayiotou, N. Konstantinou, A. Loutsiou-Ladd and A. Kapardis, "Risky and aggressive driving in young adults : Personality matters," *Accident Analysis and Prevention*, vol. 43, pp. 1323-1331, 2011.
- [7] S. Jafarpour and V.R. Movaghar, "Determinants of risky driving behavior: a narrative review," *Medical Journal of the Islamic Republic of Iran*, vol. 28, no. 142, pp. 1-8, 2014.
- [8] D.M. Priyatna and M. Yanuvianti, "Studi mengenai perilaku berkendara agresif dan faktor penyebabnya pada sopir angkutan kota di kota Bandung," Unisba, Bandung, 2012.
- [9] S. Qodariah, M. Yanuvianti and F. Coralia, "Studi tentang Perilaku Berkendara Agresif pada Pengguna Sepeda Motor di Kota Bandung," in *SNaPp*, Bandung, 2016.
- [10] Y. Yasunori Kinoshita and S. Usui, "Predicting Driver's Intention Based on Own Vulnerability : A Social Interaction Process between Road Users at an intersection in Japan," *Japanese Psychological Research*, vol. 58, no. 2, pp. 206-217, 2016.
- [11] N. Ramdhani, "Penyusunan Alat Pengukur Berbasis Theory of Planned Behavior," *Bulletin Psikologi*, vol. 19, no. 2, pp. 55-69, 2011.
- [12] S. Jafarpour and V. Rahimi-Movaghar, "Determinants of risky driving behavior : a narrative review," *Medical Journal of the Islamic Republic of Iran*, vol. 28, pp. 1-8, 2014.
- [13] J. Cestac, F. Paran and P. Delhomme, "Young drivers' sensation seeking, subjective norms, and perceived behavioral control and their roles in predicting speeding intention : How risk-taking motivations evolve with gender and driving experience," *Safety Science*, vol. 49, pp. 424-432, 2011.
- [14] D. Parker, S. Stradling, A.S. Manstead and J. Baxter, "Intention to Commit Driving Violation : An Application of the Theory of Planned Behavior," *Journal of Applied Psychology*, vol. 77, pp. 94-101, 1992.
- [15] H. Iversen, "Risk-taking attitudes and risky driving behavior," *Transportation Research Part F*, pp. 135-150, 2004.
- [16] S. Arikunto, *Prosedur penelitian (suatu pendekatan praktek)*, Jakarta: PT. Rineka Cipta, 2009.
- [17] I. Ajzen, *Attitudes, Personality and Behavior.*, Milton Keynes: University Press, 2005.
- [18] T.H. Mekonnen, Y.A. Tesfaye, H.G. Moges and R.B. Gebremedin, "Factors associated with risky driving behaviors for road traffic crashes among professional car drivers in Bahirdar city, northwest Ethiopia, 2016 : a cross-sectional study," *Environmental Health and Preventive Medicine*, vol. 24, pp. 1-9, 2019.
- [19] T.B. Joewono, "<http://theconversation.com/riset>," 1 October 2019. [Online]. Available: <http://theconversation.com/riset-kematangan-pribadi-dan-pengendara-lain-jadi-penyebab-utama-pengendara-motor-langgar-lalu-lintas-124165>. [Accessed 3 October 2019].
- [20] C. Atombo, C. Wu, E.O. Tettehfiio and A.A. Agbo, "Personality, socioeconomic status, attitude, intention and risky driving behavior," *Cogent Psychology*, vol. 4, pp. 1-20, 2017.
- [21] D. Fergusson, N. Swain-Campbell and J. Horwood, "Risky driving behavior in young people: Prevalence, Personal characteristics and traffic accidents," *Australian and New Zealand Journal of Public Health*, vol. 27, no. 3, pp. 337-342, 2003.
- [22] R. Rowe, E. Andrews, P.R. Harris, C.J. Armitage, F.P. McKenna and P. Norman, "Identifying beliefs underlying pre-drivers' intentions to take risks : An application of the Theory of Planned Behavior," *Accident Analysis and Prevention*, vol. 89, pp. 49-56, 2016.