

## ROAD USER AWARENESS AND ATTITUDE TO ROAD SAFETY IN INDONESIA 2000-2020

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### Abstract

Global status report on road safety: The Southeast Asia Story records the very high number of deaths from traffic accidents globally. The data noted that, (1) every year there are 1.35 million deaths due to traffic accidents, (2) traffic accidents are among the leading causes of death for all age levels which are in the eighth position, and (3) Traffic accidents are also a major killer for children and young people, between 5-29 years old. One of the studies on traffic safety in developing countries states that the causes of accidents include the tendency of road users to disobey regulations and weak enforcement of traffic regulations by law enforcers. This paper aims to review the awareness and attitudes of road users towards traffic safety in Indonesia from 2000-2020. The literature review was carried out systematically sourced from Science Direct, Research Gate, Emerald Insight, Academia Edu and Google Scholar and related regulations. The systematic review procedure is carried out using the Kitchenham approach, which includes the scope of the study, research questions, the search process, inclusion and exclusion criteria, data extraction, and results analysis.

Keywords: systematic review, road safety, road user awareness, road user attitude

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### ■ 1.0 RESEARCH BACKGROUND

Traffic accidents are caused by many factors, including the driver's factor and factors other than the driver. Factors other than the driver relate to the vehicle, road conditions and the surrounding environment. Meanwhile, the driver's factor concerns the physical and psychological condition of a driver, whether a car or motorcycle rider. Physical conditions include focus, vision, fatigue, drowsiness, etc. Meanwhile, psychological conditions include awareness, attitude, personality behavior, etc. The National Road Safety General Plan (RUNK) states that 61% of traffic accidents in Indonesia are caused by drivers, 30% are caused by road facilities and infrastructure and the remaining 9% are caused by vehicles. Various reports state that the level of awareness and attitudes of road users in Indonesia is still very low. Violations caused by driving behavior and attitudes can be encountered on the road every day. For example, driving at high speed, breaking traffic lights, going against the current, turning or turning in a prohibited place, not giving a sign when turning, not using a safety belt and driving while using a cell phone. Various studies on traffic accidents also note that the human factor in this case the driver is the only factor that causes 90% of road accidents (Lewin: 1982, Sumer: 2003 cited by Haerani: 2019).

According to Law of the Republic of Indonesia No. 22 of 2009 concerning Road Traffic and Transportation, traffic Safety are condition where everyone prevents the risk of accidents during traffic caused by humans, vehicles, roads, and / or the environment. Whereas an accident is defined in the law as an incident on the road which is unexpected and accidentally involving a vehicle with or without other road users which results in human casualties and / or property loss. From this understanding, it could be said that traffic accidents are caused by human factors as road users, the vehicle used, the condition of the road that is traversed and the environment in which the accident occurs which causes human casualties and property loss. Maqbool (2019) provides a definition of road safety as a result of deliberate and systematic activities from the public sector, government and non-government agencies and has compiled programs and policies to develop and maintain this. The high number of accidents and various problems that occur on roads in Indonesia, encourages the author to review various studies on awareness and attitudes of road users towards traffic safety in Indonesia during the last 20 years, from 2000-2020.

#### *Road User Awareness*

Awareness comes from the word "aware". The Merriam-Webster Dictionary (<https://www.merriam-webster.com/>) provides the meaning of the word conscious is the knowledge and understanding that something is happening or exists. In the Cambridge dictionary (<https://dictionary.cambridge.org/>) it is stated that the meaning of awareness is knowledge of something or an understanding of the present

situation based on information or experience. When connected with road users, the awareness of road users is an understanding or knowledge of road conditions, the rules that must be followed and how to maintain safety and avoid accidents. Awareness in the web dictionary (Oxford, 2019) interpreted as a condition of being awake and aware of the environment. In various psychology literatures, consciousness is also known as awareness, which when interpreted in Indonesian is awareness or belief. Awareness is discussed in the section on cognitive psychology (Cognitive Psychology). The Big Indonesian Dictionary (2019) determines the awareness (origin of the word: conscious) the state of understanding or the case that is felt or experienced by a person. If it is related to legal matters, one's awareness of the values that exist in humans regarding the existing laws. When associated with the environment, awareness is interpreted as a deep understanding of a person or group of people who are manifested in thoughts, attitudes, and behaviors that support the development of the environment.

### **Road User Attitude**

Attitude is a positive or negative reaction to someone, a certain idea or object. Attitude in psychology is defined as the tendency to evaluate something related to feelings of liking or dislike (Musselwhite et al, 2010). So that attitude can be said as an assessment of a concept such as the safety of road users. Social psychology uses the term attitude to relate human judgments when defending oneself against something, which is called an attitude object. The object of attitude can be a person, product or a certain social group (Albarracín, Johnson, & Zanna, 2005; Wood, 2000 in Principle of Psychology, Univ Minnesota). From Manstead (1996) cited by Iversen (2011), social psychologists agree that the notion of attitude proposed by Eagly and Chaiken (1993) that attitude is defined as the tendency to evaluate an entity with some degree of being liked or disliked, usually expressed in cognitive, affective and behavioral responses. Ajzen (2005) and Porter (2011) quoted by Mohamed (2017) state that attitude indirectly or directly affects behavior in almost every social interaction, such as driving.

## **■ 2.0 LITERATURE REVIEW**

Traffic accidents happen every day and the victims may be motorists, motorcyclists or pedestrians. A report from the World Health Organization (WHO, 2018), states that deaths due to traffic collisions increase to 1.35 million annually. On the streets of the world every day, nearly 3,700 people die and tens of millions more are injured or disabled each year. The latest WHO report on Southeast Asia (Murphy, 2019) states that road traffic injuries are the leading cause of death for all ages. Deaths due to road accidents ranked eighth after various types of diseases that cause death. The report also highlights a number of issues specific to the Southeast Asia and Pacific region. These things include an increase in the number of deaths due to traffic injuries per 100,000 residents in 2013 from 19.8 to 20.7 in 2016, motorcycles are one of the important vehicles in the region, resulting in more deaths due to road accidents highway among motorcycle users. Road accidents are a very serious issue in Indonesia. In 2014, police reported around 28,000 deaths due to road and highway accidents in Indonesia and the death rate due to road accidents per 100,000 population was around 12. Based on the latest trends in spending traffic death data in 2020, traffic deaths in Indonesia will reach 40,000 per year (Jusuf, 2017).

Studies on traffic/road safety related to the behavior and awareness of road users have been carried out in various parts of the world, among other: Gehlert *et al* (2014): Traffic safety climate attitudes of road users in Germany. This study focuses on the structure of the traffic safety climate as part of the validation of the construct and its relationship on attitudes and behavior related to safety by using the theory of plan behavior from Ajzen. Mohamed and Bromfield (2017), researching Attitudes, driving behavior, and accident involvement among young male drivers in Saudi Arabia. The study found three types of misbehavior of young Saudi male drivers: making mistakes, driving aggressively, driving at high speed. Driver's attitude towards traffic safety significantly influences speed driving behavior. This study also found that attitudes has no direct or indirect influence on the driver's involvement in the accident. Public attitudes towards motorcyclists' safety: A qualitative study from the United Kingdom by Musselwhite, Avineri, and Susilo (2011), This study is directed at two topics: directing motorcyclists to safer driving behavior and to increase their awareness of bicycles, especially in order to reduce the speed of motorists at intersections. Meanwhile Nordfjærn, Jørgensen & Rundmo (2011) conducted research on A cross-cultural comparison of road traffic risk perceptions, attitudes towards traffic safety and driver behaviour. This study (1) investigates cross-cultural differences in Norway, Russia, India, Ghana, Tanzania and Uganda regarding road traffic risk perception, risk sensitivity and risk willingness, (2) to test whether there are differences in driving attitudes and driving behavior, (3) to test whether the construction of risks and drivers attitudes can explain various types of risky driver behavior in the six countries that are the object of research. In Malaysia, a study conducted by Jusoh (2013), identified demographics and driver perceptions of road safety, answer road users' perceptions of various aspects of road safety, and propose possible suggestions to increase driver awareness of road safety. McIlroy *et al* (2019) examines road users' attitudes towards risk and regulatory violations in six countries, namely Bangladesh, China, Kenya, Thailand, the UK, and Vietnam and to find out to what extent attitudes towards traffic safety can explain the different behavior of pedestrians in the six countries.

Chakrabarty, Gupta & Bhatnagar (2013), have conducted a survey on Awareness of Traffic Safety among Drivers in Delhi, India. This survey aims to compare the level of awareness between the two group on traffic safety rules and differences in road signs. One of the conclusions that can be drawn from this survey is that, to help reduce accidents at all levels, awareness programs need to be carried out on road safety from the student level. Parihar (2014) with a study on Road safety Mini Project for Malviya Nagar Intersection, Indore. This study found that the highest level of awareness of respondents from the 20 questions asked in the questionnaire regarding awareness of road safety was awareness about controlling speed while descending (85%) and followed by awareness about Seat belt usage and road sign about steep decent (82%). While the level of awareness of road users with the lowest percentage is general awareness about parking place (29%). Traffic risk perception, road safety attitudes, and behaviors among road users: a comparison of Turkey and Norway, study was conducted by Şimşekoğlu, Nordfjærnb and Rundmo (2011). The aim is to find out whether there are differences in Turkey and Norway in

road safety attitudes, driver behavior, and traffic risk perception. Colucci and Meléndez (2014) with a paper entitled Innovative Programs to Raise Road User Awareness in Puerto Rico Supporting the Decade of Action for Road Safety, aims to develop an action plan to reduce the number of deaths and major injuries as well as accidents that result in disability. Wang, Rau, and Salvendy (2010) examines two major traffic problems in China and conducts a review of research in road safety on human factors. The research topics assessed cover four main sections, namely driver capacity, driving style, driver fatigue and traffic accidents. Utraiainen, Pollanen and Liimatainen (2017) has conducted a study on Road safety comparisons with international data on seriously injured. This study concludes that traditionally, road safety has been analyzed based on the number of dead. The findings have also established comparisons of definitions and data on serious injury from Sweden, the Netherlands, and Finland. Batishcheva and Ganichev, (2018): Measures to improve traffic safety at road junctions. This study proposes several technical and organizational actions to improve safety at complex crossroads, including excessive use of road markings. The findings of this study indicate that it will be very difficult to solve problems at intersections without changing the crossing system for pedestrians and the requirements for motorist behavior in the crossing area and stated in the traffic rules.

### ■ 3.0 METHODOLOGY

The approach used in this paper is a systematic review referring to Kitchenham (2004), including: (1) The scope of research results related to the awareness and attitudes of road users towards traffic safety in Indonesia from 2000-2020. (2) The search was carried out through the Science Direct, Research Gate, Emerald Inside, Academia Edu and Google Scholar databases. The article in question must be written in English. This search process uses a combination of several words and conjunctions. (3) Eligibility and exclusion criteria, namely by reading the title and abstract of the article to see the consistency of the topic being sought then separating the appropriate title to be read thoroughly and then examining the variables and indicators used and which parts of the variables are discussed / not discussed in the article related. (4) make a summary of the discussion of articles that have been carried out including the results obtained from the discussion. The eligibility and exclusion criteria used in this papers are: eligibility criteria: this review includes a one-time study or a time series study, including studies with all populations related to awareness and attitudes in driving or as road users to traffic safety. Meanwhile, the exclusion criteria used are: excluding research proposals, theses and dissertations as well as government reports.

The literature that has been collected from various sources is then analyzed by examining the objectives of the study, the theory or model used, the research variables discussed, the research methods used, the data analysis techniques used, the findings of the research and the limitations of the research. Articles are also analyzed by providing critical thinking that can be used as a basis for further research. Conclusions are then drawn based on the results of a review of the entire analyzed articles. Finally, an analysis of the implications of the research results is also carried out that can be used as a reference for decision making for policy makers in Indonesia in an effort to improve and increase awareness and attitudes of road users.

### ■ 4.0 RESEARCH FINDINGS

#### *Search Result*

Search for articles with variable awareness and attitudes of road users towards traffic safety in Indonesia sourced from science direct, emerald inside, research gate, academia Edu and Google scholar. The search process goes through the stages of identification, screening, selection according to feasibility and determination. From the search results in each data base, thousands of titles contain the words road users' awareness and attitude towards traffic safety in Indonesia. In science direct, there were 751 article titles with a limited year, from 2000-2020. From the 751 articles, after reading according to the keywords used and the abstract that was displayed, only 1 article met the requirements and criteria for review. For the source from the research gate, there is no number of articles containing all three keywords. In a long search process, only 2 articles were found that were selected, and none of the two articles met the desired conditions and criteria. Emerald inside raises 92 titles and only one article title meets the eligibility. Meanwhile, out of 2044 related article titles in academia Edu, none of them discussed cases in Indonesia until the specified search time limit. The last data source used was Google Scholar, which produced the most titles, namely 14500 articles. Then through the identification and screening process selected 55 articles. But in the end only 5 articles met the criteria and criteria that were sought. So that the total articles that meet the requirements and criteria to be reviewed in this paper are only seven articles. A summary of the searches from some of these sources is shown in table 1 below.

**Table 1. Search Result from Database**

Source	Studies found	Candidate studies	Selected
Science Direct	751	1	1
Research Gate	No information available	2	0
Emerald Inside	92	1	1
Academia Edu	2044	-	-
Google Scholar	14500	55	5
<b>Total</b>	17387	59	7

## ■ 5.0 DISCUSSION AND CONCLUSION

Haerani et al (2019): with an article entitled Moderating effects of age on personality, driving behavior towards driving outcomes. Although the title of the article does not meet the feasibility of the desired variable, this paper discusses things related to psychological variables other than awareness and attitude, namely personality and driving behavior towards driving results. Traffic safety can also be categorized as a result of driving, so the authors decide this paper meets the established feasibility. The thing to be achieved in this study is to determine the impact of people's personalities on driving behavior and traffic accidents and violations in the Province of South Sulawesi, Indonesia. Furthermore, this study was conducted to determine how big the effect of age as a moderating variable on the relationship between personality variables, driving behavior and driving outcomes. This study uses a survey (questionnaire) as a data collection technique. The population used as the object of this research is the driver who has had an accident and was treated at a hospital or health center in Makassar for a certain period. While the data analysis technique used is quantitative analysis, namely structural equation modeling. The results of the study obtained conformity indicators as a measure of personality as the strongest indicator. For the driving behavior variable, it is known that the speed choice indicator is the most powerful indicator as a measure. As for the driving outcome variable, it is known that the accident rate is the strongest indicator. The results of this study also show that there is a significant direct effect of the driver's personality variable on the results of driving behavior. There are other findings, namely, age is a moderating variable that affects the relationship between driving personality, driving behavior and driving outcomes. The higher the age of the driver, the stronger the influence of his personality on driving behavior, and driving outcomes. However, this study only looked at the moderating effect of age. There are many other demographic factors that can be added such as education level, marital status and gender.

Reasons underlying behaviour of motorcyclists disregarding traffic regulations in urban areas of Indonesia by Susilo, Joewono and Vandebona (2015) aims to find the effect of the attitudes, habits, preferences, and travel references of motorcyclists on their behavior when disobeying traffic regulations in three cities in Indonesia. (Bandung, Yogyakarta and Surabaya). The reason for selecting these three cities as the sample was based on the consideration that Bandung, Surabaya and Yogyakarta were representative cities according to population distribution, share of travel modes and characteristics of land use in Indonesia. This study took 1000 samples from each city to fulfill the calculation requirements in statistics and to avoid any unresponsive or unanswered questionnaires. Participants in this study were motorcyclists in the three cities. The data collection technique used was direct distribution of questionnaires in public locations, terminals, bus stops, malls, schools and public service offices. The data collected were then analyzed using quantitative analysis using structural equation modeling. The model used is estimated separately for each city that is the object of research. Based on the proposed structural model, the three models are significant at the level  $\alpha = 0.001$ . The analysis showed that the unobserved intention to ignore the rules and socio-demographic characteristics and motorcyclists' trips had a significant effect on repeat offending behavior. The results focus on the issue of reviewing violations of traffic laws and regulations as well as various violations that usually have fatal consequences. So that it needs to be given tougher and more assertive legal action. These results highlight the importance of rigorous and thorough testing of the driving style of motorcyclists and motorcyclist's compliance with the law, before giving a driver's license. One of the points of study that can be done for this research in the future which is another finding in this study is to test the most efficient solution in order to reduce the repetitive traffic violation behavior. The limitations of the study include how to select and test the most appropriate solution to reduce the behavior of repeated traffic violations, the sample is predominantly younger age (17-39 years) and the level of violation analyzed in the structural model is based on self-reported survey, so it doesn't represent the actual rate of violations occurring every day.

The study conducted by Alvisyahri, Anggraini and Sugiarto, (2020) has the aim of answering motorcycle riders' perceptions of traffic safety based on awareness, driving behavior, and risk-taking behavior, as latent variables. The study used an online questionnaire for 200 motorcyclists in Banda Aceh City, Aceh Province. For data analysis, this study uses Confirmatory Factor Analysis from the Structural Equation Model. This study shows that risk-taking behavior is positively influenced by driving behavior, and motorcyclist awareness positively affects driving behavior. Judging from the indicators that affect the latent variable, namely the parking location adjacent to the intersection, it shows the highest value contribution to driving behavior. The most significant coefficient that affects the latent variable of Risk Taking Behavior is the use of mobile phones while driving. Then followed by the parking indicator near the intersection which affects the latent variable of driving behavior. In the latent variable of motorcyclist awareness, the indicator of helmet use is a way out to reduce the risk of injury which is indicated by the standard variable and is also the indicator that has the most significant coefficient in influencing the latent variable of environmental conditions.

Farkhati, Nugroho, (2020) with a paper entitled Increasing the Knowledge of Traffic Safety for Early Childhood through the Game of Traffic Dragon Snake. This study aims to determine differences and increase knowledge about traffic safety for minors by practicing the traffic snake game at PAUD Puruhita Krapyak Home Semarang Barat Semarang. The research method used is a quantitative method in the form of Pre-Experimental Design (non-design) with one-group pretest-posttest design. A total of 44 students from Puruhita Krapyak Kindergarten were participants in this study. The instrument used was a scale of knowledge about road safety in early childhood. Collecting data in this study using interviews, observations, and documentation. Furthermore, the data were analyzed using paired sample t-test. From the results of t-test statistical calculations with paired sample t-test are obtained sig (2-tailed)  $0.000 < 0.05$  and the t value is  $-28.421$ , so that the value t-count  $(-28,421) < -t$  table  $(-2,045)$ . This figure shows a significant difference knowledge of early childhood about road safety before and after the test is carried out. The percentage of the result of increasing knowledge of road safety is 81.09%. The pre-test mean score was 76.17 and the post-test mean score was 131.17. This shows that early childhood knowledge of road safety has increased significantly after being given information in the form of games. This also shows that the game of traffic snakes is effective enough to increase the knowledge of early childhood at the Pantu Puruhita Krapyak on traffic safety.

Paper with a title *Influencing Factors on Motorcycle Accident in Urban Area of Malang, Indonesia* by Indriastuti, Sulistio, (2010). This study intends to develop a motorcycle accident probability model with a case study of Malang City. To obtain data, direct interviews were conducted with 100 respondents in each research area. Sample selection is done by using quota sampling method. Respondents were selected using the accidental sampling method. Data collection was carried out using a questionnaire. The questionnaires distributed to respondents were composed of three groups of data, socio-economic data, information on travel characteristics and driving behavior. The data analysis in this paper uses the logistic regression method. This model is used by researchers because there is no multivariate distribution and the explanatory variable is a combination of advanced variables and categorical variables. In urban areas such as Malang City, gender, number of motorbikes owned, purpose of trip, distance traveled and driving knowledge are explanatory variables that significantly affect the likelihood of motorbike riders having an accident. Male drivers for the purpose of traveling carry out routine activities (education, work) at longer distances will increase the likelihood that motorcyclists will be involved in motorcycle accidents. The same result is shown by the increasing number of motorcycle ownership. Meanwhile, the risk of accidents may increase with lower driving knowledge.

Joewono, Vandebona and Susilo, (2014) with a study entitled *Behavioural Causes and Categories of Traffic Violations by Motorcyclists in Indonesian Urban Roads*. This research was conducted in three major cities in Indonesia, namely Bandung, Yogyakarta and Surabaya using a survey approach. This study aims to identify what factors influence the behavior of motorcyclists and what types of violations are committed. The analysis technique used is structural equation modeling to determine the factors that affect motorcyclists committing a traffic offense and causal relationship. This study found two factors that influence the occurrence of violations, namely internal factors and external factors. The modeling results show that there are similarities in the attributes involved in violations for the three cities. Although there are several examples that have different patterns. These models can support the phenomenon of attitude trends found in motorcycle riders in general in cities in Indonesia with some variations between individuals. This study found that there were many similar behaviors among motorcyclists in the three cities surveyed and certain differences were also found. The existence of this equation is suspected because there are similarities in behavior among motorcyclists due to the influence of road standards and guidelines, similarities in motorcycle technology, and changes in eastern norms. While the difference lies in the characteristics of each city. The study concluded that road users have a positive response to quality road and traffic management systems when linked to the availability of a high level of service and quality products. The results of this study also show that the behavior of road users will be formed by a high desire to enforce traffic regulations from local institutions. There are several limitations stated in this study, among others, the need for further studies to understand the problem of traffic violations in developing countries, it is necessary to assess the types of violations based on demographic characteristics so that confounding variables can be identified and it is also necessary to conduct an assessment of traffic based on the characteristics of motorcycle trips, both functionally and expressively to get valuable lessons from developed countries.

*Current Practice, Attitude, and Behaviour towards Road Safety Behaviour among the Drivers in Jakarta, Indonesia* by Maharani (2018), has the aim of reviewing the implementation, attitudes, and perceptions of safety driving behavior on roads in Jakarta, Indonesia. This study uses a combined method, namely a quantitative method using a questionnaire and a qualitative method by conducting semi-structured interviews. For the semi-structured interview, nine participants were carefully selected using three criteria: bus drivers, car drivers, and motorcyclists. For the quantitative method, the questionnaire was distributed to 100 people who drive to work in the South Jakarta area. For the results of the interview the researcher did audio recording, transcribed the results of the interview and made the coding manually. While the data from the questionnaire were analyzed descriptively. The results of the descriptive analysis of the questionnaire, the mode of transportation that is considered the most dangerous is a motorcycle with a percentage of 37.85% and 32.03% of people think the bus is very dangerous while 2.34% think the car is very dangerous. For the results of the interviews, most of the drivers showed the same understanding of road safety behavior. Bus drivers, motorcyclists and car drivers realize that the safe action to maintain road safety is to pay attention to all safety signs and stay focused while driving. Furthermore, the findings also show that the driving experience is one of the main determinants in increasing understanding and awareness of road safety behavior. From the results of this study it is known that, there is a gap between perceptions drivers of road safety behaviors and real practices. Gaps were found in attitudes towards using cell phones while driving. From the results of this study, it can also be seen that the determining factors in influencing the way drivers think, assess, and act on road safety behavior are internal and external factors. Based on these findings, drivers also know what factors influence them not to drive safely. Unfortunately, this study did not make a quantitative analysis of the findings sourced from questionnaires that had been distributed to respondents.

The seven articles described in the previous section can be summarized based on: research location, participants, research methods, data analysis techniques used, study limitations and the results obtained in outline and their implications for traffic safety practice in Indonesia. The research locations were conducted in major cities in Indonesia, including South Sulawesi, Jakarta, Bandung, Surabaya, Yogyakarta, Malang and Banda Aceh. The location selection was based on considerations, including population size, number of motorbike users and vehicle drivers and the metropolitan city as a center for business, education and the economy. The participants involved in this study were dominated by motorbike riders whose number in Indonesia reached 126.588.509 units in 2019 (BPS, 2020). Furthermore, participants also involved car and bus drivers and early childhood children who were given knowledge about traffic safety education through games " Dragon Snake ". The research method most used in these seven studies is the survey method, either by using a questionnaire or through interviews with respondents. Observation, documentation and experimental methods are also used in these studies. While the data analysis technique used to analyze the model, see the relationship and influence between variables and to analyze the results of interviews and questionnaires, the techniques used include quantitative and qualitative analysis. Several studies used structural equation modeling, factor analysis, statistical t-test with paired sample t-test, logistic regression methods and descriptive analysis using percentages. Qualitative analysis performs manual coding of data collected from interviews and observations.

In general, the results of the study found that there was a significant direct influence of the driver's personality variable on the results of driving behavior. Age is a moderating variable that affects the relationship between driving personality, driving behavior, and driving results. Unobserved intentions to ignore regulatory and socio-demographic and commuting characteristics of motorcyclists significantly influence repeat offense behavior. Risk-taking behavior is influenced by driving behavior, and the awareness of motorcyclists affects driving behavior positively. One study also concluded that early childhood knowledge about road safety increased significantly after being given information in the form of games. Another study found that male drivers who traveled regularly at longer distances increased the likelihood of motorbike accidents occurring. The higher the number of motorcycle ownership and lower driving knowledge increases the risk of accidents. One study in three cities of Bandung, Yogyakarta and Surabaya found that road users have a positive response to quality roads and traffic management systems when it comes to the availability of high-level services and quality products. This study also shows that the behavior of road users will be shaped by the high desire of local institutions to enforce traffic regulations. Finally, the research results also show that internal and external factors are determinants in influencing the way drivers think, assess and act on road safety behavior. Driving experience is also one of the main determinants in increasing understanding and awareness of road safety behavior.

The implications of the research results that can be used as a reference by policy makers in Indonesia are, among others, the results of the study show that the number of motorcycle ownership in Indonesia is very high compared to other types of vehicles. The lack of knowledge and understanding of road users on traffic safety, this includes the low level of awareness and attitudes of road users towards traffic safety, which is dominated by young motorists. The government needs to make stricter and stricter policies against applications for driving licenses. Knowledge and understanding of traffic safety rules can be taught to young children using easy-to-understand media. The government also needs to pay attention to the quality of roads built and implement better transportation management so that road users give a more positive response in driving. Further studies that can be carried out for this topic include (1) how to choose and test the most appropriate solution to reduce the repetitive traffic violation behavior, in which the sample is dominated by younger drivers (17-39 years), (2) how to understand the problem of traffic violations in developing countries, especially in Indonesia, it is necessary to assess the types of violations based on demographic characteristics to identify confounding variables and (3) how to get valuable lessons from developed countries, it is necessary to conduct traffic exploration based on the characteristics of motorbike trips.

## 6.0 CONCLUSION

From the review of several articles regarding the awareness and attitudes of road users towards traffic safety in Indonesia, several conclusions can be drawn. Research related to this topic is still limited. From the hundreds of thousands of titles that appear in search engines, only a few titles meet the criteria for review. From the research titles found, there were researchers who consistently discussed related topics. When viewed from the research participants, it is dominated by motorcyclists as the largest number of road users in Indonesia, so strict rules must be applied to applicants who apply for a driving license. Motorcyclists are dominated by young people between 17-39 years of age. To increase road users' understanding and awareness of traffic safety information and understanding of traffic safety rules should be taught from an early age. Finally, the weakness in this review is the limited time that the author has in making a review so that the author needs to develop keywords used to find research titles related to the awareness and attitudes of road users towards traffic safety in Indonesia and to expand search sources from various research journal.

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