

Road User Attitude and Road Safety

Rusda Irawati¹, Zulkifli Khair²

¹*Azman Hashim International Business School, Universiti Teknologi Malaysia, Johor Bahru*

²*School of Human Resource Development and Psychology, Faculty of Social Sciences and Humanities, Universiti Teknologi Malaysia, Johor Bahru*

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Abstract: The report from WHO states that, deaths caused by traffic accidents have increased from year to year to reach 1.35 million people. The report also noted that close to 3,700 people die on the world's roads every day and tens of millions more are injured or disabled. Under these conditions, the United Nations then launched the Decade for Road Safety Action 2011-2020. The main objective of this action is to stabilize and reduce the rate of increase in road deaths around the world. Five main pillars of action are recorded in the Global Plan for the Decade of Action, namely, road safety management, safer infrastructure, safer vehicles, safer road user behavior and better post-accident response. The number of accident victims in Indonesia has also increased every year. In 2019, the National Police Traffic Corps stated 32,403 traffic accidents with 6,941 deaths in the first six months of 2019. This paper aims to conduct a literature review on the attitudes of road users and traffic safety in Indonesia and several countries in the world. This paper discusses a review of reports and articles of academic journals and these reports based on database found in Science direct, Research gate, Academia Edu, Google Scholar, newspapers, and related regulations. Finally, this paper will summarize the components of attitudes related to traffic safety, research methods used in papers and theories and models that are widely used as references to determine the causes for certain behavior, especially those related to traffic safety.

1 INTRODUCTION

Traffic accidents take their toll every day on roads around the world. Accident victims can occur to drivers, motorcyclists, or pedestrians. In Asian cities, many accidents happen to motorcyclists, due to the high number of motorcyclists in these countries, especially Southeast Asia such as the Philippines, Vietnam, and Indonesia.

The death rate from traffic accidents ranks eighth out of the top ten causes of death in the world, reaching 2.5% of the total number of deaths. Nearly 1.35 million people die on the roads each year from traffic accidents. From the WHO report, it is stated that this death rate is 3x higher in countries with low income levels compared to countries with high income levels. The numbers published in the Global status report on road safety: The Southeast Asia Story certainly have a big impact on countries in Southeast Asia, especially Indonesia. It takes great and serious attention to reduce the mortality rate.

A report from the Ministry of Transportation states that in 2014, 28,000 victims died due to accidents on Indonesian roads (Jusuf, 2017). It was also stated that the death toll from traffic accidents reached 12 people out of 100,000 people. The death rate due to traffic accidents in Indonesia is higher than Singapore (4.8) and Australia (5.2). Jusuf also noted that several assumptions state that the number of deaths due to traffic accidents is not reported. The data presented was also inconsistent and difficult to verify. By looking at the current conditions, Jusuf (2017) estimates that in 2020 death due to accidents could reach 40,000 people per year and by 2035 it could reach 65,000 per year. To reduce the mortality rate, the Indonesian Police have set a high target by 2020, namely reducing the mortality rate by 50%. And set a target to reduce the mortality rate by 2035 to 80%. Furthermore, it is hoped that Indonesia will be the best in terms of handling traffic safety in Asean countries.

This paper aims to conduct a literature review on the attitudes of road users and traffic safety in

Indonesia and several countries in the world. The literature review method used in this study is the traditional review method. The author selects articles to be evaluated according to the topics discussed. The articles evaluated are sourced from the Science Direct database, Google scholar, Academia Edu, Research Gate, WHO reports, reports from The International Traffic Safety Data and Analysis Group (IRTAD), Police reports, newspapers, and related regulations. The selected paper is reviewed by looking at the purpose of writing or research questions, the model / theory used, research methods, data analysis used, findings, limitations, and then the author makes critical thoughts related to the paper.

2 LITERATUR REVIEW

It is estimated that on the world's roads 1.3 million people die each year and between 20 million and 50 million suffer minor injuries. The WHO report on the global status of road safety is the first to have an overly broad scope. The report assesses the road safety situation in 178 countries using data drawn from standard surveys. The results of this report show that road accidents remain the most important public health problem, especially for low- and middle-income countries (WHO, 2019).

Why does traffic safety need to be a concern? in Indonesia? The National General Safety Plan (RUNK) shows that traffic accidents result in economic losses of around 3.1 percent of Gross National Income; around Rp.220 trillion. According to Police data in Indonesia, an average of 3 people died every hour due to road accidents. The data also states that the large number of accidents is caused by several things, namely: 61% of accidents are caused by human factors that are related to the ability and character of the driver, 9% is due to vehicle factors (related to meeting roadworthiness technical requirements) and 30% caused by infrastructure and environmental factors (figure 1). Human factors that are related to the ability and character of the driver turned out to be an influential factor in road safety (<https://kominfo.go.id>).



Figure 1. The Biggest Factor Causing Traffic Accidents. Source: Kepolisian Negara Republik Indonesia, Korlantas Polri at <https://kominfo.go.id/>

2.1 Road User Attitude

The definition of attitude in the Cambridge dictionary (<https://dictionary.cambridge.org/>) is feelings or judgments about something or someone or how to behave. The Big Indonesian Dictionary (Language Development and Agency, 2019) defines attitudes: actions based on conviction or belief. From these two understandings, it can be concluded that attitudes are related to feelings, opinions, or beliefs about something.

Attitude is an important component in human life that plays a role in helping humans interact effectively with their environment. Attitudes allow humans to make judgments about events, people, social groups, and other things. Social psychology uses the term attitude to relate to human evaluations when defending against something, that something is called the object of attitude. The object of attitude can be a person, product, or certain social group (Albarracín, Johnson, & Zanna, 2005; Wood, 2000 in Principle of Psychology, Univ Minnesota). From this understanding it can be concluded that attitude is an important component that helps us interact with the environment and enables us to make judgments about other people, social groups, events, and other attitudinal objects. Social psychology states attitude as an evaluation of long-lasting attitude objects.

Nordfjærn et al (2011) cites Iversen and Rundmo (2004) who examined attitudes towards traffic safety using instruments that have been tested for validity. This instrument consists of 13 statements related to attitudes towards road traffic. Responses requested from respondents use a Likert scale from 1-5 points (strongly disagree-strongly agree). There are six factors measuring the attitude of the driver, namely: talking to unsafe drivers, drinking, and driving, speeding, violating rules and sanctions, attitudes toward pedestrians and knowledge of traffic rules. The items in this factor relate to the respondents'

general awareness and knowledge of road traffic regulations. McLeod, (2018), Attitudes and behaviors quoted again in (<https://www.simplypsychology.org/>) provide a definition of attitude as a psychological tendency shown by evaluating an entity in the form of likes or dislikes. McLeod divides attitudes into three components known as the ABC attitude model, namely: affective components that involve feelings or emotions about attitudes towards objects, behavioral or conative components that will affect how a person acts and cognitive components that involve belief or knowledge about an object.

Maharani (2017) quotes from Davey, Wallace, Stenson, et al. (2008) which states that one of the causes of road accidents in most cases is the attitude of the driver. This attitude is related to the individual's desire to behave well or badly in relation to safety. Studies on traffic safety have been widely published, although in some countries it is difficult to find literature on these studies. The following studies will discuss traffic safety and attitudes in Indonesia and several countries.

Adolescent Compliance in Traffic by Rakhmani (2013), focuses on adolescent attitudes and compliance in traffic with the aim of revealing traffic police efforts to improve adolescent compliance in traffic with a qualitative approach. The results of his research indicate that the factors that influence adolescent compliance in traffic include understanding of traffic regulations, adolescent attitudes about adherence to traffic order, and the existence of an effective ticketing program. The weakness of this paper is in terms of method, it only uses interview techniques to four traffic police officer who often face traffic violation situations by teenagers. The traffic violation attitude shown by the teenagers in this study was considered as a normal attitude in traffic. This is because they are used to seeing traffic violations committed by their parents from an early age. These points need to be an important note from the results of this study.

The paper entitled Community Behavior Towards Operation Evidence of Violations in Traffic by Junef (2014), highlights several important points related to attitudes towards traffic compliance. Although this study only uses a literature approach in the fields of law, psychology and culture, some notes from this study are that traffic violations can be caused by various factors, such as; (1) law enforcement, (2) the condition of traffic facilities and infrastructure, (3) individual qualities include: knowledge, skills, mental attitude, obedience, (4) socio-cultural conditions such as: uncertainty between right and

wrong, economic factors, social factors, difficulty finding role models. He also concluded that traffic offense behavior can be identified with the concept of attitude in social psychology. Furthermore, the paper also stated that traffic rule violation behavior is driven by attitudes towards the violation itself, attitudes towards traffic laws / regulations, attitudes towards traffic police, which have implications at three levels, namely individual, interpersonal, and social. This paper also cites the important points from Reason, Manstead, Stradling, Baxter, & Campbell (1990) that deviant driving behavior can be divided into three types: (1) deviation; represents attention and memory, for example those commonly experienced by parents and women, (2) mistakes; it means failure to observe and assess, such as not seeing signs / other vehicles, failing to turn, this behavior is more dangerous, on average, all drivers experience it, (3) violations; is deliberate risky driving behavior, such as speeding and running red lights, in which young people and men are more likely to behave in this way. Although the analysis is only based on a literature approach, this paper can provide interesting information for a more in-depth study using a different approach.

The paper Current Practice, Attitude, and Behavior towards Road Safety Behavior among the Drivers in Jakarta, Indonesia, written by Maharani (2017) aims to determine current practices, attitudes, and perceptions of road safety behavior for drivers in Jakarta, Indonesia. Mixed methods qualitative with semi-structured and quantitative interviews using a questionnaire Findings from semi-structured interviews show that drivers have a common viewpoint of road safety behavior. They see road safety behavior as an attitude in following safety signs. the driver also agreed that the biggest obstacle to acting safely is the road conditions in Jakarta which are potholed. The results of the questionnaire showed that 71.03 percent of the 128 drivers agreed that road conditions in Jakarta were unsafe. This paper conclude that the Police Department should consider providing training safety behavior on the road before issuing a driver's license. Some points that need to be considered in this paper, among others, a study found that the majority of people who die in road accidents in Indonesia are drivers, which is about 64 percent and most of them occur in two- wheeled vehicles with the least protection. It is thought that the basic problem of road accidents in Indonesia is the imbalance between the rapid growth of vehicles on the road and low road construction rates, and this phenomenon is exacerbated by the popularity of motorbikes. Maharani (2017) also found that one of the main causes of road accidents is the attitude of the

driver. The term 'attitude' itself means the individual's desire to behave well or badly in relation to salvation. The attitude of the driver in this paper is exemplified in the use of seat belts while driving. On average, the likelihood of wearing a seat belt reduces the consequences of dying in a road accident by 40–50 percent for the driver and front seat passenger. The results of this study also indicate that there is a gap between drivers' perceptions of road safety behavior and real practice, especially in the use of cell phones while driving. Weaknesses that can be noted in this paper include: (1) The quantitative analysis carried out by the researcher is not explained in detail, (2) The form of questions and question items used in the questionnaire are not presented and (3) This paper does not explain the statistical analysis techniques used to process data.

Some of the research results discussed earlier are the results of research conducted in Indonesia. These studies have not provided a complete picture of attitudes towards traffic safety in Indonesia. In general, it can be concluded from these studies: (1) Some studies only use descriptive techniques and interviews with less representative numbers of respondents, (2) One study uses a mixture of qualitative and quantitative methods and (3) attitudes of road users towards safety traffic includes knowledge of traffic regulations on adolescents, individual quality, law enforcement, socio-culture, traffic facilities and infrastructure and other factors. Driver Attitude Towards Road Safety by Jusoh (2013) dissertation in the field of Transportation Planning states that, most drivers tend to overestimate their ability and the ability of their vehicles to react in sufficient time to avoid collisions. Dangerous driving behaviors such as speeding, fatigue, using cell phones and driving aggressively are recognized as the main factors causing road accidents in Malaysia. The findings of this study reveal that in general most drivers are very careful in managing their time because most of them have already set targets to reach their destination but then they do not comply with road regulations. Likewise, using a cell phone while driving and overtaking, drivers will not like being bound by rules and regulations. The results also showed that male drivers were more aggressive than female drivers, especially in the 21-30year age group. Therefore, an integrated road safety program with a good plan needs to be implemented to reduce road accidents. Some of the limitations included in this study are the lack of references. Not much research has been done on road accidents caused by driver attitudes, especially in developing countries. Attitudes towards Road Safety and Aberrant

Behavior of Drivers in Pakistan by Batool (2012) found that deviant behavior from drivers is considered the main cause of accidents in Pakistan. The author based his study on the assumption that personal attitude is a major determinant of driving behavior and aims to identify the socio-cognitive determinants of driving disorders in response to the lack of road safety research in Pakistan. It should be noted that this study uses multiple methods taken from the three studies that have been conducted.

Study 1, a qualitative study, uses interviews and the results provide a general understanding of road safety issues in Pakistan. Study 2, a quantitative study, used the results of Study 1 to produce a modified Attitudinal Questionnaire (AQ) inspired by The Ajzen's Theory of Planned Behavior (TPB: Ajzen 1991), and a modified Driver Behavior Questionnaire (DBQ: Lawton et al. 1997). This stage focuses on deliberate traffic violations. Study 3, real-world driving behavior from a sample of drivers taken from four observed clusters using the Wiener Fahrprobe technique (WF: Risser 1985). The results of the research collectively indicate that the driver's behavior is interpreted based on the attitudes and characteristics of the sociodemographic and driving environment. In particular, the strongest determinants of driver behavior in Pakistan are attitudes towards law enforcement and compliance with regulations. In particular, the results of the study also show that there is a negative effect of increasing the welfare of women and students on driving behavior. The limitation of this study relates to taking the ideal number of samples. This is due to political instability and safety risks from the author during the data collection process. This research also needs more support from empirical facts to provide conclusive policy recommendations.

Paper by McIlroy et al (2019) explores the relationship between pedestrian behavior and traffic safety attitudes in six countries. The main objectives of the research presented here are twofold; first, assessing differences in attitudes towards rule breaking or risky on-road behavior in several countries. Research was carried out in Bangladesh, China, Kenya, Thailand, England, and Vietnam. Second, to investigate the relationship between self-reported pedestrian attitudes and behavior, and to find out whether there are differences in the relationship between pedestrian attitudes and behavior across the countries investigated. This study shows that attitudes towards traffic rule violations and traffic behavior are significantly at risk with pedestrian behavior in Bangladesh, China, Kenya, Thailand, UK, and Vietnam. The results also show that this relationship

is stronger in some countries than in others; in Kenya in particular, traffic safety attitudes explain variance in behavior to a much lower degree, while in China the relationship is significantly stronger than in other countries. These results apply to all three behavioral factors analyzed, namely intentional rule violation, aggressive behavior, and memory or attention lapses. These results were found by controlling for variables for age, sex, and exposure to the road system. These factors were also shown to have different effects on behavior in the six countries studied. In particular, the results suggest that age and gender are stronger predictors of pedestrian behavior in Kenya and the UK than in other countries. The most significant limitation for this study was found in the sample. First, bias towards younger, more educated, and apparently more affluent populations, particularly in the Bangladesh, China, and Kenya samples. Another limitation in this study is that it does not consider the choice of transportation mode of respondents in these six countries.

Nordfjærn et al (2011) investigated cross-cultural differences in road traffic risk perception, risk sensitivity and willingness to risk in Norway, Russia, India, Ghana, Tanzania, and Uganda. This study also examined differences in driver attitudes and behavior. An additional objective is to test whether risk constructs and driver attitudes explain the variation in risky driver behavior in these countries. This study used a survey method (questionnaire) with random sampling in Norway and used stratified random sampling in five other countries. Norwegians report safer attitudes about drinking and driving and speeding in road traffic. These respondents also reported lower seat belt use and frequency of drinking and driving than the remaining subsample. Respondents from Sub-Saharan Africa reported higher perceptions of road traffic risk and risk sensitivity than respondents from Norway, Russia, and India. Respondents from Tanzania reported the highest willingness to take risks both in traffic and in general. Respondents from Sub-Saharan Africa and India reported safer attitudes related to speaking to unsafe drivers, violating rules and sanctions, attitudes toward pedestrians, and knowledge of traffic regulations. Respondents from Sub-Saharan Africa also reported more cautious behavior and reduced speeding. The driver behavior prediction model explains the satisfactory number of variants in Norway, Russia, and India, but is not suitable in African countries. The limitation in this study is the process of collecting data using a random sample. For countries with large populations, namely Russia and India, this is difficult. This difficulty is also found in

countries with poor economic conditions because many of the population are illiterate, so that questionnaires must be distributed using interview techniques.

2.2 Road Safety

Law of the Republic of Indonesia Number 22 of 2009 concerning Road Traffic and Transportation defines Safety of Traffic and Road Transportation as a condition to protect everyone from the risk of accidents during traffic that can be caused by humans, vehicles, roads and / or the environment. (Law No 22, 2009). The direct target of Traffic Safety according to Siregar (2014) is to reduce the number of traffic accidents involving either cars or motorbikes or other types of vehicles and all road users including drivers, public vehicle passengers, and pedestrians and reduce the severity caused by accidents to victims of traffic accident Based on Law Number 22 of 2009, the Traffic Police has responsibility for road traffic and transportation safety. This law aims to develop and regulate a land transportation system that is safe, comfortable, orderly and smooth through: the flow of vehicles, people and / or goods on the road, use of traffic, road transportation infrastructure and facilities, activities related to registration and identification. motor vehicles and drivers, traffic education, traffic management and engineering, traffic law enforcement and road transport (Law No. 22, 2009).

Eusofe, Evdorides, (2017): study the existing organizational arrangements for regulating road safety in Malaysia systematically. This study focuses on road safety financing to provide an insight into whether financing factors can affect the level of effectiveness and efficiency of road safety regulations. This study uses an exploratory approach in the form of semi-structured interviews. Respondents who are the source of the data are key positions in road safety management, for example policy makers from various government organizations, representatives from the private sector and representatives from universities. The study concludes that all interested parties agreeing to the road safety plan for 2006-2010 cannot achieve its objectives.

Attitudes Towards Traffic Safety Worldwide (2016) by Sucha, Viktorova and Risser aim to contribute to traffic safety by gaining an understanding of the differences in traffic cultures in countries around the world, to explore and understand the needs regarding traffic safety in various countries around the world and their implications for the safety

situation objective traffic. This study uses a simple three-question questionnaire that focuses on beliefs and opinions about traffic safety and is analyzed quantitatively and qualitatively. The results show major differences in the traffic safety cultures adopted by different countries. People from countries with poorer traffic safety records tended to underline the importance of traffic safety, then found no evidence of a link between the country's economic performance, traffic safety culture standards and the Traffic Safety Index.

Wegman (2017): The future of road safety: A worldwide perspective provides a review for the future of road safety in the world. With the descriptive analysis he conducted on various data and reports he found that The future of road safety is uncertain, and definitely not the same for all regions of the world, countries with a mature road safety approach-and an ambition to make further progress-are expected to move in the direction of a Safe System approach.

As a formula for road safety, it can be concluded that the purpose of traffic activities and driving on the highway is to protect everyone from the risk of accidents caused by humans, vehicles, roads and / or the environment. Traffic safety and the occurrence of traffic accidents on the highway will involve human factors, motorized vehicles both motorbikes and cars as well as environmental conditions or the road used. The human factor that is discussed in this case is the attitude towards traffic safety. Attitudes towards traffic safety include understanding and paying attention to traffic regulations, attitudes in driving which include the use of safety belts, speed control, avoiding the use of cell phones and motion sickness while driving and attitudes towards other road users. To formulate policies related to traffic safety, various interested parties can be involved in achieving road safety objectives.

2.3 Related Model and Theory

2.3.1 Theory of Planned Behaviour

Theory of Planned Behavior (TPB) intends to explain all behaviors in which people can control themselves. The main component of this theory is behavioral intention; Behavioral intention is influenced by attitudes about the likelihood that the behavior will have the desired results and benefit from those results. TPB consists of six constructs that simultaneously control a person over the behavior. These constructs include attitudes, behavioral intentions, subjective

norms, social norms, perceptions of power, and perceived behavioral control (LaMorte, 2019).

Nordfjærn et al (2011) have suggested that the theory of planned behavior (Ajzen and Fishbein 1980) is a theory that is more widely tested in psychology related to road traffic (Iversen and Rundmo 2004; Nabi et al. 2007; Nordfjærn, Jørgensen, and Rundmo 2010; Poulter et al. 2008). The studies cited consistently show that a person's attitude towards road traffic safety predicts how far they will behave cautiously or neglect in traffic. Sheeran, Norman, and Orbell (1999) according to Nordfjærn et al (2011), suggest that attitude can be a stronger predictor of behavior than other predictor variables in the theory of planned behavior

2.3.2 The Health Believe Model

The Health Belief Model (HBM) was developed in the early 1950's by social experts at a health care center in the US. There are six constructs of this model consisting of: perceived sensitivity, perceived difficulties, perceived benefits, perceived constraints, cues to act and the ability to heal (LaMorte, 2019). Health belief models were developed with the aim of explaining and predicting health-related behaviors, particularly those related to the uptake of health services. HBM has been used to develop actions that can effectively change behavior. Actions taken relating to individuals related to various behaviors to reduce the risk of certain diseases.

Nordfjærn et al (2011) used this model in a study aimed to examine intercultural differences in road traffic risk perceptions, sensitivity to risk and risk appetite in Norway, Russia, India, Ghana, Tanzania and Uganda to differences in driver attitudes and driver behavior, and to test whether risk constructs and driver attitudes can explain the types of risky driver behavior in the countries studied. Nordfjærn et al noted that, the health behavior model explains that perceptions of risk have an impact on risky behavior (Weinstein 1988; Wilde 1982). The results of this study highlight that a model that uses risk perception, demographic characteristics, and road traffic attitudes to predict driver behavior has a satisfactory fit in Norway. The results suggest that precautions should be taken in low-income countries to reduce the risk of road traffic in these countries.

Ram and Chand (2016) also used this model in their paper: The effect of driver risk perception and driving duty perception on road safety attitudes. Their study aims to explore the influence of driver risk perception and driving duty perception on road safety attitudes. This paper discusses two theories that

explain how risk perceptions influence attitudes/behavior. By understanding health risks such as in the case of smoking, HIV-AIDS disease or others, one can adopt positive behaviors in the form of prevention (Health Belief Model and prevention adoption process). This study resulted in a positive and significant relationship between perceptions of driver risk and perceptions of driving duty and found that these two perceptions significantly influence driver attitudes towards road safety.

2.3.3 Personality–Attitudes–Risky Driving Behavior’ Model of Ulleberg and Rundmo

Ulleberg and Rundmo (Pa° 1 Ulleberg, 2003), conducted a study aimed at examining the importance of social cognitive variables and traits in relation to risky driving behavior. This study found that attitudes towards traffic safety were the only variable that was causally related to risky driving behavior. Based on these findings, it can be concluded that a person's personality indirectly affects risky driving behavior. This model explains that attitudes are influenced by altruism, anxiety, violation of norms, seeking sensation and assault. Meanwhile, attitudes in traffic in this model include traffic flow, obeying rules, speed and driving pleasure.

From the discussion of theories and models in the previous section, namely Planned Behavior theory, Health Belief Model and Personality Model - Attitudes - Risk-Driving Behavior provides an explanation that can be used as a basis for analyzing the attitudes of road users and their relationship with traffic safety. Studies that use this theory and model conclude that there are constructs behind certain behaviors, especially those related to one's attitude towards road safety. These theories and models were previously used in the fields of health and social psychology, but later evolved into various other fields of science.

3 CONCLUSIONS

From the studies discussed above, it can be concluded that humans are the main factor in traffic safety. Particularly in Indonesia, 61% of the causes of traffic accidents are caused by human factors, the rest is due to facilities and environmental factors related to road safety. Research on the attitudes of road users and their relation to traffic safety is not widely found in Indonesia. There are several papers produced from the final project and research conducted

descriptively and literature review. Previous research referred to in this paper on traffic safety and attitudes was carried out in Malaysia, Pakistan and in several European and Asian countries. For example, research related to attitudes and traffic safety was conducted to compare conditions in high-income countries with low- income countries. From the literature discussed, it can be seen about the understanding of attitudes and approaches or instruments used to measure attitudes. The research results that have been discussed previously also show that traffic safety is a concern of every country in the world, this is due to the high number of accidents that take victims of all ages. In Indonesia, written rules regarding traffic safety are contained in Law Number 22 of 2009. In general, it has also been stated that traffic safety is realized not only through regulations but also by developing and regulating a land transportation system that is safe, comfortable, orderly, and smooth. The most widely used research methods to measure road safety are simulation models, interviews, and surveys. An aspect that is heavily highlighted is the ability of road users to understand the rules and policies set for road users. The results found in this study highlight many aspects of road safety management. Theory of Planned Behavior is a reference theory in evaluating attitudes regarding road user behavior. The Ulleberg and Rundmo Models of Health Behavior and Personality - Attitudes - Risky Driving Behaviors are also used as a reference for observing and measuring attitudes related to road safety.

REFERENCES

- Annisa Jusuf, Ignatius Pulung Nurprasetio & Arya Prihutama, Macro Data Analysis of Traffic Accidents in Indonesia, *J. Eng. Technol. Sci.*, Vol. 49, No. 1, 2017, 132-143, ITB Journal Publisher, 2017
- Badan Pengembangan dan Pembinaan Bahasa, Kamus Besar Bahasa Indonesia, <https://kbbi.kemdikbud.go.id/> Cambridge Dictionary, <https://dictionary.cambridge.org/> Cynthia Febrina Maharani, 2018, “Current Practice, Attitude, and Behaviour towards Road Safety Behaviour among the Drivers in Jakarta, Indonesia” in International Conference of Occupational Health and Safety (ICOHS-2017), *KnE Life Sciences*, pages 88–97. DOI 10.18502/kl.4i5.2542
- Evelyn Murphy. 2019, Global status report on road safety: The Southeast Asia Story, ITF/UNESCAP Supporting Traffic Safety Information System of Countries in Southeast Asia, WHO
- Feti Rakhmani, 2013, Kepatuhan Remaja Dalam Berlalu Lintas, *Sociodev, Jurnal S-1 Ilmu Sosiatri* Volume Nomor 1, April

- 2013, <http://jurnalmahasiswa.fisip.untan.ac.id>; <http://jurnal.mhsfisipuntan.co.nr>
- Fred Wegman, The future of road safety: A worldwide perspective, *IATSS Research* 40 (2017) 66–71 Global status report on road safety 2019. Geneva: World Health Organization; 2019. Licence: CC BYNC-SA 3.0 IGO
- <http://indonesiabaik.id/>; Siap Bangun Negara, Oktanti Putri Hapsari, Tekan Korban Jiwa Kecelakaan Lalu Lintas di Indonesia: Perluah Berkeselamatan di Jalan Masuk Pendidikan, Desember 2019
- <https://www.suaramerdeka.com/>; Sabtu, 31 Agustus 2019 | 00:00 WIB Penulis: SuaraMerdeka.com
- International Traffic Safety Data and Analysis Group, Road Safety Annual Report 2019, Paris, France, 2019
- Kepolisian Negara Republik Indonesia, Korlantas Polri, Jakarta, 2019 at <https://kominfo.go.id/>
- Laws of The Republic Indonesia Number 22 Of 2009, About Traffic and Road Transport
- Matus Sucha, Lucie Viktorova and Ralf Risser. 2016, Attitudes Towards Traffic Safety Worldwide, *The Open Psychology Journal*, 2016, 9, 35-49, DOI: 10.2174/1874350101609010035
- Muhar Junef, 2014, Perilaku Masyarakat Terhadap Operasi Bukti Pelanggaran (Tilang) Dalam Berlalu Lintas, *E-Journal WIDYA Yustisia*, Volume 1 Nomor 1 Juni 2014, ISSN 2338-7785
- Norzaliha Binti Jusoh. 2013, Driver Attitude Towards Road Safety, thesis in Faculty of Built Environment Universiti Teknologi Malaysia
- Pa° l Ullberg*, Torbjørn Rundmo, 2003. Personality, attitudes, and risk perception as predictors of risky driving behaviour among young drivers, *Safety Science* 41 (2003) 427–443
- Rich C. McIlroy et al. 2019, Exploring the relationships between pedestrian behaviours and traffic safety attitudes in six countries, *Transportation Research Part F*, <https://doi.org/10.1016/j.trf.2019.11.006>
- Rusda Irawati and Zulkifli Khair. 2019, Road Users Awareness and Traffic Safety, Kolokium UTM-Universitas Purwokerto, Universiti Teknologi Malaysia, Johor Bahru, Malaysia 17 Feb 2020
- Tika Ram, Khem Chand, 2016. Effect of drivers' risk perception and perception of driving tasks on road safety attitude, *Transportation Research Part F* (2016), <http://dx.doi.org/10.1016/j.trf.2016.07.012>
- Trond Nordfjærn, Stig Jørgensen and Torbjørn Rundmo. 2011, A cross-cultural comparison of road traffic risk perceptions, attitudes towards traffic safety and driver behaviour, *Journal of Risk Research* Vol. 14, No. 6, June 2011, 657–684. DOI: 10.1080/13669877.2010.547259
- University of Minnesota. 2010, Principles of Social Psychology, is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike
- Wayne W. LaMorte, MD, PhD, MPH, Boston University School of Public Health, <http://sphweb.bumc.bu.edu/otlt/MPH-Modules/SB/BehavioralChangeTheories/>. September 9, 2019
- Romi S. Wahono. 2016. Literatur Review: Pengantar dan Metode, <https://romisatriawahono.net/>
- Zahara Batool. 2012, Attitudes towards Road Safety and Aberrant Behaviour of Drivers in Pakistan, PhD dissertation in The University of Leeds Institute for Transport Studies
- Zarulazam Eusofe, H. Evdorides. 2017, Assessment of road safety management at institutional level Malaysia: A case study, *IATSS Research* 41 page 172 -181