

**ATTITUDES AND AWARENESS OF TRAFFIC
SAFETY AMONG DRIVERS IN TUARAN,
SABAH: CASE STUDY**

MUHAMMAD NAZRIN SHAH BIN LAMING

**FACULTY OF ENGINEERING
UNIVERSITI MALAYSIA SABAH**

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MUHAMMAD NAZRIN SHAH BIN LAMING

**THESIS SUBMITTED IN PARTIAL
FULFILLMENT OF THE REQUIREMENT FOR
THE DEGREE OF BACHELOR OF CIVIL
ENGINEERING**

**FACULTY OF ENGINEERING
UNIVERSITI MALAYSIA SABAH**



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JULY 2022

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ABSTRACT

In this study, the focus is on drivers' attitudes and awareness of traffic safety in Tuaran, Sabah. Each person has different attitudes and awareness about traffic safety. Even Though, there are many studies in this area, there are still several unanswered questions. First off, driver knowledge about traffic safety has not studied in Tuaran, there is no research on drivers in Tuaran, Sabah, regarding their awareness of traffic laws and also no research has been done regarding ways to raise drivers' attitudes and awareness of traffic safety in Tuaran, Sabah. There are 3 objectives for this study which are to determine knowledge of traffic safety, analyse factors that influence attitudes and awareness among driver and to propose strategies in order to improve attitudes and awareness of traffic safety among drivers in Tuaran, Sabah. Number of respondents that filled the questionnaire via google doc or google form are about 164 respondents. Questionnaire surveys distributed via WhatsApp's to simplify data collected. The data obtained in this analysis were calculated statistically by the procedure performed using Microsoft Excel computer-based software and the Statistical Package for Social Science (SPSS). Results of statistical analysis using SPSS statistics software and Microsoft Excel. According to the population census in Tuaran, Sabah in 2020 there are 135,665 total population. Of that number, 164 respondents will represent the total population who use vehicles in the research area conducted. Based on this research, it shows that 80 respondents in this survey are male and 84 are female, accounting for 51.2% and 48.8% respectively. The majority of respondents who represent the population of Tuaran, Sabah who uses vehicles have a good understanding of road safety legislation and be a factor that influences the attitudes and awareness of traffic safety among drivers in Tuaran, Sabah, and There are a number of tactics that can be used to improve traffic safety in the study region, including government campaigns on road safety, an extension of the period allocated for learning to drive while obtaining a licence, and teaching younger generations about road safety in schools.



ABSTRAK

Dalam kajian ini, tumpuan diberikan kepada sikap dan kesedaran pemandu terhadap keselamatan lalu lintas di Tuaran, Sabah. Setiap orang mempunyai sikap dan kesedaran yang berbeza tentang keselamatan lalu lintas. Walaupun, terdapat banyak kajian dalam bidang ini, masih terdapat beberapa soalan yang belum terjawab. Pertama sekali, pengetahuan pemandu tentang keselamatan lalu lintas belum dipelajari di Tuaran, tidak ada kajian mengenai pemandu di Tuaran, Sabah, mengenai kesedaran mereka terhadap undang-undang jalan raya dan juga tiada kajian dilakukan mengenai cara untuk meningkatkan sikap dan kesedaran pemandu tentang keselamatan lalu lintas di Tuaran, Sabah. Terdapat 3 objektif kajian ini iaitu untuk mengetahui pengetahuan tentang keselamatan lalu lintas, menganalisis faktor-faktor yang mempengaruhi sikap dan kesedaran dalam kalangan pemandu serta mencadangkan strategi bagi meningkatkan sikap dan kesedaran keselamatan lalu lintas dalam kalangan pemandu di Tuaran, Sabah. Bilangan responden yang mengisi borang soal selidik melalui google doc atau google form adalah seramai 164 orang responden. Tinjauan soal selidik yang diedarkan melalui WhatsApp untuk memudahkan data yang dikumpul. Data yang diperolehi dalam analisis ini dikira secara statistik dengan prosedur yang dilakukan menggunakan perisian berasaskan komputer Microsoft Excel dan Statistical Package for Social Science (SPSS). Hasil analisis statistik menggunakan perisian statistik SPSS dan Microsoft Excel. Mengikut bancian penduduk di Tuaran, Sabah pada tahun 2020 terdapat 135,665 jumlah penduduk. Daripada jumlah itu, 164 orang responden akan mewakili jumlah populasi yang menggunakan kenderaan di kawasan kajian yang dijalankan. Berdasarkan kajian ini, menunjukkan bahawa 80 responden dalam tinjauan ini adalah lelaki dan 84 adalah perempuan, masing-masing menyumbang 51.2% dan 48.8%. Majoriti responden yang mewakili penduduk Tuaran, Sabah yang menggunakan kenderaan mempunyai pemahaman yang baik tentang perundangan keselamatan jalan raya dan menjadi faktor yang mempengaruhi sikap dan kesedaran keselamatan lalu lintas dalam kalangan pemandu di Tuaran, Sabah, dan Terdapat beberapa taktik yang boleh digunakan untuk meningkatkan keselamatan lalu lintas di wilayah kajian, termasuk kempen kerajaan mengenai keselamatan jalan raya, lanjutan tempoh yang diperuntukkan untuk belajar memandu sambil mendapatkan lesen, dan mengajar generasi muda tentang keselamatan jalan raya di sekolah.



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CHAPTER 1

INTRODUCTION

Mobility has increased dramatically in many urban regions over the last decade. This situation has sparked concerns about rising car usage, as well as the resulting congestion and pollution. Meanwhile, the number of road deaths involving secondary school students jumped by 60%, with motorcyclists aged 16 to 25 years' old who did not have a valid driver's licence accounting for 60% of the total (Ahmad et al., 2019). Road traffic injuries have resulted in the loss of lives, human resources, property, and money for a variety of parties (Shahid et al., 2015).

The World Health Organization (WHO) claims that the African and South-East Asian areas have the highest rates of road traffic fatalities in its Global Status Report on Road Safety (2018). Although Africa is the world's least motorised (2%) region, it accounts for 16% of all known crash deaths. The highest fatality rates are in Nigeria and South Africa (33.7 and 31.9 fatalities per 100,000 populations, respectively), which are higher than the African average of 24 deaths per 100,000 people (Janmohammed, 2018).

In the subject of traffic accidents, the attitude of road users is critical. Furthermore, (Ghous, 2019) distinguishes between a person's character (bodily position) and a person's cognition (mental posture) from the perspective of the field of Social Sciences. Attitude is a regular occurrence of motivations, emotions, perceptions, and cognitive processes (Ajzen, 2012). Attitude is also something that must be learnt, established, and developed via experience rather than something that is present from birth.



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In 2018, rural areas accounted for 45 percent of all traffic deaths in the United States (Adeyemi et al., 2021). However, rural areas accounted for only 30% of total vehicle miles travelled (VMT) in 2018, according to the United States Census Bureau (US Census Bureau, 2019). (Federal Highway Administration, 2019). In fact, the death rate per 100 million VMT in rural areas was 1.68, while in urban areas it was 0.86 (C. E. Watson & Austin, 2021).

The disparity between fatality rates in rural and urban locations is due to a number of reasons (for a summary, see United States Government Accountability Office, 2004): Some factors influence the likelihood of a fatal collision occurring, while others influence the likelihood of a fatality after a collision has occurred. Because of shared characteristics of the roadway environment, such as small lanes, sharp curves, and a lack of medians, or because of aspects of vehicle design that affect handling, fatal crashes may be more likely per VMT in rural locations.

With the rise in life expectancy and the democratisation of driving permits, the number of older drivers is on the rise. Elderly folks are frequently accused of being risky drivers. Indeed, studies of car accidents have shown that as people get older, they are more likely to be involved in a car accident (B. Watson et al., 2015). In at-fault crashes, older adults are also more likely to be badly or fatally injured (Rakotonirainy et al., 2012).

The purpose of the study is to find out how many drivers are concerned about traffic safety while on the road. It can also be used to forecast the percentage of road users in Sabah's Tuaran district who will convert from private to public transportation. As a result, the people of Sabah can reduce traffic congestion, accidents, and road usage since, as we all know, many modern organizations are creating vehicles without regard for the number of units produced that needs to be controlled.

Traffic collisions are a global public health issue that annually result in about 1.35 million deaths, a bigger number of injuries, and significant property damages. Because traffic demands continue to rise in tandem with economic development and population increase, assessing possible crash risk is essential for improving traffic



safety. Researchers have examined the crash mechanism and analysed the relationship between traffic status and crash to improve traffic safety (Hu et al., 2022).

Real-time crash prediction models have been created in recent traffic safety research (Cai et al., 2020), in which the probability of a crash may be predicted using short-term traffic status data. Even though the outcomes from these crash data studies are important for a better comprehension of the crash probability mechanism, it should be highlighted that historical crash data has limitations, such as under-reporting, inconsistency in data collecting, and taking a long time to gather and analyse (Wang et al., 2021).

1.1 Background of Study

Modern era, people now have a variety of options for getting around when they need to, but this was not always the case. People who couldn't walk long distances or possess their own horse had to rely on public transit in the past. Public transportation includes a range of public transit systems such as buses, subways, and streetcars. People may securely and reliably reach their daily destinations, such as employment, schools, nutritious food outlets, and healthcare facilities, thanks to transportation networks. Anyone who is unable to drive, such as those without access to personal vehicles, children, people with disabilities, and the elderly, rely heavily on public transportation. Multiple people riding animals was the first form of public transportation.

According to the United States Census Bureau, 86 percent of all workers drove their own car to work in 2013, and 76 percent drove alone. 69 percent of urban families and 14 percent of rural households used public transportation in 2013 (McKenzie, 2013). According to the American Society of Civil Engineers, while taking public transportation has historically been safer than driving a car, car travel has expanded at a faster rate than other means of transportation. For many age groups, motor vehicle collisions remain the primary cause of injury-related death. Motor vehicle collisions were the second biggest cause of death among people aged 13 to 25 in 2013 based on FTA research data.



In developed countries, most households own at least one car. In poor countries, the situation is not much different. The number of people who use public transportation is, without a doubt, decreasing. It's true that practically everyone wishes to possess an automobile. Highway traffic is sometimes regarded as an indication of a sophisticated economy. However, an increase in the use of personal automobiles is not a particularly favourable development. There is an increase in vehicle pollution as more cars hit the roads. The air quality in cities is already poor. A rise in the number of cars will exacerbate the problem. Global warming can be caused by pollution in the atmosphere. When average temperatures rise, weather patterns all around the world shift dramatically.

In Malaysia in 2012, Table 1 shows the number of deaths caused by transport accidents by specific groups (Moh & Abd Manaf, 2014). Pedestrians (26 cases), motorcyclists (242 cases), and truck or van drivers are among those who have died (48 cases). The biggest number of instances included motorcycle riders, followed by truck or van drivers and pedestrians. This demonstrates that the majority of motorists who are still in school are more likely to be involved in traffic accidents that result in injury or death (Zhao et al., 2015).

Table 1: Mortality Rate (per 100,000 populations) by Advanced Group in 2012, Malaysia

Transport accident by Advanced Group	No. of deaths	The death rate (per 100,000 population)
Pedestrian	26	0.09
Bikers	242	0.84
Three-wheel drive vehicle rider	19	0.07
Car Riders	1	0.00
Truck or Van Riders	48	0.17
Heavy transport vehicles riders	7	0.02
Bus riders	12	0.04

Sources: Ministry of Health Malaysia (2014)



1.2 Problem Statement

In this study, the focus is on drivers' attitudes and awareness of traffic safety in Tuaran, Sabah. The purpose of this study is to identify and analyse factors that influence driver attitudes and awareness of traffic safety in Tuaran, Sabah. As we know, each person has different attitudes and awareness about traffic safety. In the subject of traffic accidents, the attitude of road users is critical. According, (Memon et al., 2015) define the difference between a person's character (bodily position) and a person's thought (mind posture) from the perspective of the field of Social Sciences.

Several attempts were made to modify road users' attitudes. For example, law enforcement has increased fines and summonses as a result of public awareness initiatives and driver education. All of these attempts, however, are ineffective and fall short of the true purpose. As a result, a scientifically performed study of attitudes and relationships with road safety is timely in order to detect and identify problems that occur, as well as offer an effective action plan to address and limit the rate of road accidents.

Even Though, there are many studies in this area, there are still several unanswered questions. Firstly, there is no investigation of the relationship between the impact of driver attitudes and awareness of traffic safety on mobility. Secondly, there is no investigation about the knowledge of road safety legislation, among drivers in Tuaran, Sabah. Thirdly, there is also no investigation about the factors that influence attitudes and awareness of traffic safety among drivers in Tuaran, Sabah and the last is there is no investigation about how to improve the attitudes and awareness of traffic safety among drivers in Tuaran, Sabah.

1.3 Definition

Attitude: Attitude is a psychological construct, a mental and emotional phenomenon that resides in or characterises a person, according to psychology. They're complicated, and they're a result of life experiences. It is a person's inherent state of mind about a value that is triggered by a responding expression toward oneself, a person, a location, an item, or an event (the attitude object), which then influences the person's thought and action.



Awareness: The state of being aware of something is known as awareness. It is the ability to immediately know and sense events, as well as to feel or be aware of them. Another definition states that it is a state in which a person is aware of some information and that information is directly available to apply to a variety of behavioural activities. The idea is commonly used interchangeably with consciousness, and it is also thought to be consciousness itself.

Traffic safety: The strategies and measures employed to protect road users from being killed or seriously injured are referred to as road traffic safety. Pedestrians, cyclists, motorists, car passengers, horse riders, and passengers of on-road public transportation are all examples of typical road users (mainly buses and trams).

1.4 Objectives of the Study

The objectives of this study are:

- To determine knowledge of road safety legislation, among drivers in Tuaran, Sabah.
- To analyse the factors that influence attitudes and awareness of traffic safety among drivers in Tuaran, Sabah.
- To propose suitable strategies in order to improve the attitudes and awareness of traffic safety among drivers in Tuaran, Sabah.

1.5 Significance of Study

- Assisting transportation engineers and town planners in making transportation planning towards sustainable transportation by taking this study's findings into consideration.
- Traffic rules and guidelines have to be set in place and strictly followed so that serious accidents and injuries can be averted.

1.6 Limitation of Study



This study was conducted among road users aged between 18 years to 60 years. The scope of this study area is in Tuaran, Sabah. The data will be provided based on the questionnaire that will be filled by the driver in the scope area. The questionnaire is about common traffic safety, law of the road and about thinking skill among drivers. The result will be analysed based on the attitudes and awareness among drivers. All the data will help the researcher to ensure that the final findings of the study are significant.

Because the desired responses are exclusively inhabitants of Tuaran Sabah, respondents will be chosen and screened. The driver chosen as the response should be someone who drives on the road frequently. At the very least, you must be able to drive a four-wheel-drive car. Motorcycle riders will not be asked to participate in the survey. As a result, determining the number of drivers who originate from the research area, namely Tuaran Sabah, is extremely challenging.

1.7 Scope of study

This research work studies the attitudes and awareness of traffic safety among drivers in Tuaran, Sabah. Data collected is done by conducting literature surveys on previous study papers published within 8 - 10 years ago. Another method of data collected by conducting surveys with selected respondents and selected areas who become the road user. A set of traffic issues related to the safety among drivers in selected areas are listed.

Then, based on surveys that were conducted, researchers will analyse the data and discuss how to improve the attitudes and awareness of traffic safety among drivers in selected areas of study. The collected information from other respondents would be assembled and formalized into the knowledge base. Lastly, the involved data analysis and summarization of findings from the previous stage.

1.8 Conclusion

In conclusion, this study is expected to have a huge impact on the attitudes and awareness of drivers about traffic safety in Tuaran, Sabah. This study also aims to



expand and be a catalyst for researchers so that in the future there will be more studies like this done in this area.



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CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

In this chapter, researcher will explain and discuss about history of traffic safety, traffic safety legislation, attitude and awareness of traffic safety among drivers, strategies in order to improve the attitudes and awareness of traffic safety among drivers in Tuaran, Sabah, previous study related to this research and some minor impact about traffic safety in Tuaran, Sabah for more details.

2.2 Overview

The history of traffic safety among drivers will be thoroughly explored in this chapter. The impact of traffic safety on driver attitudes and awareness will next be discussed in further detail. Prior to doing a thorough background investigation, the primary focus will be on global and Malaysian issues. This chapter will cover public transportation as a key term in the study in order to give more useful results. As a result of the unfavourable effects, driver attitudes and awareness of traffic safety have had a significant impact on various economic sectors, including transportation, travel, mobility, and population.

Following that, it will be discussed how this plague has caused such massive harm in the transportation business. The study looked into a few key areas, including:

1. Traffic safety legislation;
2. Attitude and awareness of traffic safety among drivers;
3. Strategies in order to improve the attitudes and awareness of traffic safety among drivers in Tuaran, Sabah;
4. Previous study;
5. Impact of driver attitudes and awareness of traffic safety on Mobility;
6. Impact of driver attitudes and awareness of traffic safety on Transport Emissions;
7. Impact of driver attitudes and awareness of traffic safety on Transport Industry;
8. Impact of driver attitudes and awareness of



traffic safety on Public Transportation; and finally, a summary of the findings. The conclusion of this chapter consisted solely of the author's past study.

2.3 Traffic Safety legislation

According to the brochure "Safe Mobility—a Europe that Protects," an estimated 25,300 persons died on EU roads in 2017 (Danaj, 2018). This is a 20% decrease from 2010, but just a 2% decrease from 2016. Furthermore, 135,000 people have suffered significant injuries. The socio-economic cost of road accidents is projected to be €120 billion per year. It will be challenging to achieve the aim of halving traffic fatalities between 2010 and 2020. However, there is a tremendous desire to improve road safety. The long-term goal, according to the Swedish approach "Vision Zero," is to achieve close to zero fatalities and major injuries by 2050 (Mattas et al., 2021). Vehicle automation is seen as a critical component in this effort.

Road safety is a global issue including a variety of factors that influence traffic safety and lead to collisions (RTCs). The biggest influence has been determined to be driver-related factors, as well as determinants relating to the road environment and vehicle features (Jamal et al., 2020). Human error, impaired attention, intoxication, or aggressive and impulsive risk-taking are all factors that play a role in road safety, accounting for more than 90% of RTCs (Timmermans et al., 2021). Driving behaviour is a complex element of traffic safety, with overlapping relationships between driver demographics (Timmermans et al., 2020), psychological influences (Ross et al., 2021), social norms and cultural influences, legal rules, enforcement levels, and socioeconomic backgrounds (Jafarpour & Rahimi-Movaghar, 2014). Safety on the roads is a priority for the entire world. Every nation should review and enhance its road safety policies and plans in light of an objective assessment of the global state of road traffic safety. This study conducted a multi-country survey to acquire data about various facts including legislation, enforcement, and education that are intended to produce safer drivers in nine countries with the goal of adding to such a review and knowledge.

Concerns about traffic safety can arise from the existence of multiple modes of transportation and complex mobility challenges. People walking and bicycling, taking

