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The correlation of safety riding knowledge and traffic accident rates for online motorcycle taxi drivers in Malang city

Renny Septiari * and Nelly Budiharti

Industrial Engineering, National Institute of Technology (ITN), Malang, East Java, Indonesia.

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Abstract

Safety riding behavior is one of the methods that must be applied for motorists so that the atmosphere of driving on the road can be more orderly in order to achieve security and comfort, especially on the highway. This effort continues to be encouraged with the aim of reducing the number of accidents that are increasingly occurring, both with injured and dead victims. Safety riding is one way to be able to behave safely and comfortably when driving on the highway both for oneself and for other drivers. Online motorcycle taxi is a small part of motorist who passes by on the highway in carrying out their activities. The primary factor that online motorcycle taxi drivers need to take into account is how to drive so that driving safety and security for drivers, passengers, and other drivers can be well maintained. Driving on the highway, especially for two-wheeled riders, requires more concentration and focus on traffic signs so that negligence that causes accidents can be avoided since the number of two-wheeled riders certainly outweighs the number of four-wheeled riders in Malang city. Thus, the traffic densest almost every day considering that Malang is a city of education and a holiday tourist destination. The purpose of this study is to determine the relationship between the safety riding awareness of online motorcycle taxi drivers who drive on the highway with the achievable level of safety. This study uses a quantitative descriptive approach that aims to determine the safety riding knowledge of online motorcycle taxi drivers. The instrument used in this study was a questionnaire.

The analysis of the results reveals that males make up the majority of the online motorcycle taxi drivers in Malang city, with 23 out of a total of 25 respondents being male, 11 people (44%), in the age range of 27 to 35, and 13 people having the most work experience, which is 4-6 years. Of the 25 respondents, nearly 12 or 48% have a good understanding of safe riding, demonstrating that the drivers are aware of the value of driving safely on the highway for everyone's safety.

Keywords: Accidents; Knowledge; Online motorcycle; Safety riding

1. Introduction

Safety and security are the main factors that need to be considered while driving on the highway, both users of four-wheeled vehicles or more, and especially users of two-wheeled vehicles [1]. As we know, two-wheeled vehicles or motorcycles are the most popular vehicles for Indonesians [2], and Malang is no exception. Although it is somewhat less safe than four-wheeled vehicles, it is regarded as faster and more flexible in terms of time and convenience. [3]. In Indonesia, there are approximately 115 million more two-wheeled or motorcycle users [4] than four-wheeled users. The large number of motorcyclists has a negative impact on the safety aspects of transportation and the environment because air pollution is getting higher and eventually it leads to unavoidable traffic jams because the volume of vehicles is increasing each day. From the safety aspect, the involvement of two-wheeled vehicles is the biggest contributor to the rate of traffic accidents throughout 2018 with a total of 73.49% [5].

* Corresponding author: Renny Septiari

Industrial Engineering, National Institute of Technology (ITN), Malang, East Java, Indonesia.

Indonesian Police show data that every hour there are 3 people die due to road accident. Some of the reasons for the large number of accidents are that 61% of accidents are caused by human factors (human error), 9% are caused by vehicle factors and 30% are infrastructure and environmental factors. In this extend, the factors that influence road safety are drivers who are related to each other's abilities and character while driving. Nowadays, the existence of online ride-hailing services is almost on every corner of the highway, this is because working as an online driver is one of the livelihood options, especially in big cities [6]it is also because it can be done as an in-between job. Jobs that rely on motorbikes as a means of transportation are increasing in number in Indonesia [7]. This job is in high demand because, in addition to being simple, it does not necessitate any special skills. Even though they don't require special skills in their jobs, it turns out that online motorcycle taxi drivers are one of the highest contributors to road accidents [8]. In fact, there are daily traffic-related fatalities among online motorcycle taxi drivers.

During 2021 the number of traffic accidents in the city of Malang has increased. It was recorded that from January to December 2021 there were 159 reports of accidents. This figure has increased by 30% compared to the traffic accidents that occurred throughout 2020. The Head of Traffic Accident Unit of Police of Malang said that the number of accident incidents in the city of Malang throughout 2021 was caused by the driver of his own motor vehicle. The first factor is due to humans, namely drivers, the second factor is due to the large number of drivers who do not obey traffic rules [9]. The purpose of this study is to describe the awareness of online motorcycle taxi drivers about safety riding in Malang City.

2. Material and methods

This type of research uses quantitative descriptive research which aims to describe the awareness of online motorcycle taxi drivers' safety riding. This research was conducted in Malang City in June-July 2022. The population involved in this study were online motorcycle taxi drivers who usually work in Malang and its surroundings. The respondents in this study were 25 people, namely online motorcycle taxi drivers. The variables studied were the knowledge of safety riding on online motorcycle taxi drivers with the help of a questionnaire. Data was collected with the help of a questionnaire based on Law No. 22 of 2009 concerning Road Traffic and Transportation and the Indonesian Motorcycle Cycling Manual by the Director General of Land Transportation in 2008 and conducted online through the help of google form. The number of questions on the safety riding awareness questionnaire were about safe and comfortable driving practices, the completeness of vehicle documentation, the use of standard safety features, and the use of safe and orderly traffic sign communication tools. There were 16 questions about safety riding knowledge, and the rating is good if the score is between 11-16, sufficient if the score is between 6-10, and bad if the score is 0-5.

3. Results and discussion

3.1. Previous Research

The provided safety riding training has a positive impact on motorized drivers from injury. With skills training and driving demonstrations as well as the delivery of information on knowledge, skills on potential hazards on the road make drivers more careful in driving. By implementing a safety riding training strategy, of course, it will provide great benefits to drivers regarding the importance of safe and comfortable driving while on the road [10]. Although most people believe that motorcycles carry greater risks and are more likely to injury prone, they actually have many advantages for drivers. The threats and obstacles regarding driving safety are determined by 3 indicators, namely drivers, motorbikes and the environment. To increase the safety of drivers, they can improve their behavior while driving by paying more attention to how to drive, the clothes they wear, and the driving speed on the highway [11].

Based on the description of the previous research, it was stated that road hazards are the highest accidents from year to year that cause injuries and deaths. Most of the average accident occurs due to the driver (human error). So, we need a proper knowledge and behavior while driving on the highway. By implementing a safety riding training strategy, of course, it will provide great benefits to drivers regarding the importance of driving safely and comfortably while on the road. Besides training, the proposal to make procedures in the form of a guidebook on how to drive properly and safely (safety riding) can provide an overview of knowledge about driving behavior and rules while on the road.

From the application of safety riding, the benefits that can be obtained are: Apart from increasing awareness and safety while driving, other benefits of safety riding are:

- Improving driving skills.
- Being aware of and apply safety riding in real terms.

- Getting to know the safety riding community.
- Knowing the past mistakes in driving.

While the goal to be achieved from the implementation of safety riding is to provide a way or order regarding safe driving behavior that can help to avoid traffic accidents. They are such rules by which the basis for driving training with attention to safety for drivers and passengers becomes the main point.

3.2. General Identity

The characteristics of the respondents used in this study were classified based on gender, age and length of work. The following will discuss the conditions of each of these respondent classifications.

3.2.1. Gender

Gender is often interpreted as sex. According to [13] Gender is a grammatical classification of words and other words related to them which are broadly related to the existence of two sexes or neutrality. Gender is also related to the differentiating roles, functions and responsibilities of men and women as a result of an agreement or the result of the formation of society. Gender is also a cultural construction that is open to all changes. Gender is the difference between female and male biologically since an individual was born. The biological differences and biological functions of male and female are not interchangeable between them, and their functions remain with the male and female who co-exist on earth. As a matter of facts, in today's society we frequently notice that while field work is typically dominated by male, office work is typically dominated by female. This is not a coincidence, but there are various kinds of considerations made by a company related to the specifications of each gender. The gender factor also determines the level of participation and productivity of a person at work. Labor basically cannot be differentiated based on gender. But in general, male will be more productive for jobs that rely on physical strength. However, under certain circumstances, sometimes female's productivity can be higher than that of male, because female are more thorough, patient, and diligent.

3.2.2. Age

A person's age is directly proportional to physical capacity to a certain extent and reaches a peak at the age of 25 years. At the age of 50-60 years, muscle strength decreases by 25%, sensory abilities decrease by 60%. Furthermore, the physical work ability of a person aged > 60 years is only 50% of the age of a person aged 25 years. Reduced VO2 Max, visual acuity, hearing, speed of object distinction, decision-making, and short-term memory are all effects of aging. Thus, the influence of age must always be taken into consideration in giving a job to someone.

3.2.3. Length of work

Length of work is a period of time or the length of time the workforce works in a place. Length of work is also the last biographical characteristic in the concept of individual character which is often studied. Talking about tenure will definitely relate to seniority in an organization. Extensive studies on the relationship of seniority to productivity have been carried out, and the result is that there is a positive relationship between seniority and work productivity of an employee [14]. From the explanation above, it can be concluded that length of work is the length of time a person works in a place whose duration is measured from the start of the person working until a certain period of time. The length of work for each employee will vary from one employee to another. This is because the length of time employees work is also determined by several factors that influence employees to stay at their current job or quit and look for a new job.

As shown in table 1, the information related to the general identity of the respondents (online motorcycle taxi drivers), namely: gender, age and length of work.

Based on Table 1, it can be seen that the identity of the 25 online motorcycle taxi drivers according to gender, almost all of whom were 92% male. According to age identity, 11 people, or 44%, of the online motorcycle taxi drivers were between the ages of 27 and 35. Meanwhile, based on the identity of the length of time worked, as many as 13 people (52%), ranged from 4-6 years. The explanation of the data in Table 1 reveals that male between the ages of 27 and 35, who can be considered to be in a productive age, are most interested in this job. This is also supported by the highest percentage of employees with tenures of 4-6 years, which indicates that this work does not really require specialized skills. This demonstrates that there are many enthusiasts working as online motorcycle taxi drivers, especially given the current job market.

Table 1 General Identity

No	Variable	Description	Amount	
			N	Percentage (%)
1	Gender	Male	23	92
		Female	2	8
2	Age (years)	18 - 26	9	36
		27 - 35	11	44
		36 - 44	5	20
3	Length of Work (years)	1 - 3	12	48
		4 - 6	13	52

3.3. Characteristics of Research Respondents

This study was conducted in Malang, Indonesia, with 25 online motorcycle taxi drivers as respondents. Based on the previous analysis, the age characteristics of respondents with the highest number were in the age range of 27-35 years were 11 people (44%). The age of the workforce is the productive age for each individual. The age for the workforce is between 20 to 40 years, this age is considered very productive for the workforce because if the age is below 20 years, the average individual still does not have sufficient skill maturity and is still in the educational process. Meanwhile, at the age of over 40 years, there is a decline in physical abilities for individuals [15]. Manpower is defined as the total population of a nation that, if there is a market for their labor and they choose to engage in it, can produce goods and services and is between the ages of 15 and 64. Age has a significant impact on a person's physical activity; strength will increase with age to some extent until it reaches its peak at age 30. The following life span will start to decline sharply as other abilities, such as hearing, vision, and the ability to distinguish objects quickly, deteriorate.

3.4. Safety Riding Knowledge

Knowledge is a result of experiencing which begins with the process of sensing, which includes smell, taste, sight, hearing and touch. Most humans acquire knowledge through their ability to hear and see [16]. The knowledge of safety riding is an insight that must be possessed before driving a vehicle that emphasizes mastery of abilities, control skills, mentality and attitude. When driving for a longer period of time and gaining more experience, one's knowledge of safety riding will also improve [17].

Knowledge of Safety Riding Traffic is one type of driving behavior. The driving behavior alone is divided into two types, namely, safe driving behavior and dangerous driving. Safety riding is a safe driving behavior that can help to avoid traffic accidents. The meaning of dangerous driving according to Dula & Geller (2003) is the driver's behavior in driving that endangers or has the potential to harm other drivers, passengers and also pedestrians.

There are internal and external reasons underlying their behavior. Internal factors are factors from within the individual reflecting responsibility for life without coercion from the outside, carried out based on true beliefs. In addition, there are external factors, which can be known from encouragement outside of oneself, for example sanctions and the immediate environment. Regarding what preparations to make before riding a motorbike outside the house, most of them only know that they have to bring their SIM (driving license) and STNK (vehicle registration certificate). Petridou and Moustaki [18] stated that the factors that influence traffic behavior include safe driving behavior (safety riding). Road markings and traffic signs are parts that must be obeyed by motorists when using a motorized vehicle on the road as part of safety riding. Law No. 22 of 2009 article 105 letters (a) and (b) which states that everyone who uses the road must: (a) Behave accordingly: and/or (b) Prevent things that may hinder, endanger security and safety traffic and road transportation or which can cause road damage.

Knowledge of safety riding will habituate someone to be more careful and aware of using a vehicle safely. Safety riding is a type of driving behavior. Driving behavior is divided into 2 types, namely safe driving behavior and dangerous driving behavior. Safety riding is a safe driving behavior that can help to avoid traffic accidents [19]. Dangerous driving, namely driving behavior that endangers or has the potential to endanger other motorists, passengers and pedestrians.

Table 2 Frequency Distribution of Safety Riding Knowledge Levels

Knowledge	n	Percentage (%)
Less	4	16
Enough	9	36
Good	12	48
Total	25	100

Table 2 shows that of the 25 respondents, 12 (48%) of the online motorcycle taxi drivers have good knowledge of safe riding, followed by 9 (36%) who have sufficient knowledge, and the remaining 4 (16%) who have insufficient knowledge of safe riding. Therefore, it can be concluded that almost all of the respondents have a good understanding of the advantages of safe, orderly riding on the highway. Good benefits for safety, health and security while driving on the highway.

The results of the analysis show that a number of 12 drivers have good safety riding knowledge, meaning that they have implemented safety riding methods/steps, namely:

- Completing a motorized vehicle certificate such as a valid driver's license and STNK (Vehicle registration certificate).
- Checking the condition of the vehicle before use, such as checking the tire air, radiator water, motorcycle lights, brake linings and the last is the condition of our motorcycle chain. For motorcycle lights, make sure that all lights are normal.
- Completing the vehicle with a tool kit in case of emergency that may be experienced when the vehicle/motorcycle undergoes problems.
- Use of SNI (National Indonesian Standard) helmets. Helmets are safety riding equipment when driving. Helmets are very important and must be worn while driving. Helmet is a mandatory tool and must be used because it is useful for protecting a very vital part of our body, namely the head. The use of helmets has an important role because it protects our heads from asphalt friction if we have an accident or fall while driving. This helmet has 2 variations, namely a full-face helmet and a half face helmet, for the use of a helmet that is most comfortable for each user, and the type of helmet used is labeled with SNI or Indonesian National Standard.
- For online motorcycle taxi drivers, the use of mobile phones is the most common because it is the device through which they work and carry out their daily activities. The use of mobile phones must also be adapted to conditions because incorrect use such as driving while calling or reading messages is a dangerous act that must be avoided while driving.
- Provide a raincoat, a raincoat is one of the safety riding equipment that must be taken wherever we drive. Raincoats are very important for driving, especially during the rainy season like this. For this technical issue, choose a raincoat that is comfortable to wear, and make sure it is safe and according to standards. So, it will not interfere when driving on the highway. Using a raincoat that is not up to standard can also interfere with the safety of yourself and others. For example, the use of a non-standard raincoat is that it can cover the rear lights of the motorbike or even be attached to the vehicle beside it. Therefore, use a standard raincoat.
- Always Obey Traffic Rules, a good driver is a driver who can obey all traffic rules. For this reason, every driver must be able to comply with all applicable traffic signs. It is not only a rule, but also helps ourselves to be safe on the road. There are lots of traffic signs that apply on the highway. These signs require the understanding of the drivers. In order to achieve this, one must comprehend the significance of current traffic signs, such as those that say it is forbidden to turn left or go against the flow of traffic. Knowledge of safety riding is considered sufficient, because of the 7 ways of safety riding, drivers only apply or carry out 4-5 of the methods or rules for safety riding that have been described previously. So, there is a chance for an accident to occur.

Due to the fact that only 2–3 of the previously discussed methods or rules of safety riding are applied or followed by these drivers, they fall into the category of having less knowledge of safety riding (16%), which includes 4 people. It can be said that the chance for traffic accidents to occur is high compared to drivers who are in the good and sufficient category.

Of the total respondents who have been evaluated regarding knowledge of safety riding, it can be concluded that knowledge related to safety riding of online motorcycle taxi drivers in the city of Malang is quite good because of a total of 25 respondents, almost half or a number of 12 people had the knowledge and applied the precise way of driving

according to the rules in the guidelines on safety riding. The level of accidents that frequently occur in Malang is anticipated to decrease as the number of drivers increases, not just those operating online motorcycle taxis who are well-versed in safe riding.

4. Conclusion

According to the results of the discussion, the knowledge of safety riding on online motorcycle taxi drivers operating in Malang City is 12 (48%). Which means that of the 25 respondents, almost half of them have good knowledge of safety riding knowledge. Thus, it can be concluded that the drivers have understood on how to drive safely and comfortably while driving on the highway. It is expected that the increasing number of drivers who have good knowledge of safety riding can increase the level of safety for drivers and passengers and reduce the level of traffic accidents which are still at a critical level.

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