Factors Associated with Safety Riding Behavior Among Workers in Tanjung Priok District, North Jakarta City

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Introduction: *Safety riding behavior is an ideal behavior that any worker must apply to increase the worker's safety and other road users. There has been an increased prevalence and mortality rate due to traffic accidents in 2022. This study analyzed factors related to driving safety behavior among workers in Tanjung Priok District in 2023.*
Method: *A cross-sectional study was conducted in the Tanjung Priok District between March to June 2023. The questionnaires adopted two instruments from the Indonesian Traffic Police Corps instruments and two previous research instruments distributed through Google Forms. All general workers who reside and work in Tanjung Priok were selected as subjects. The inclusion criteria of this study were workers who both worked or lived in the Tanjung Priok sub-district and ride motorbikes for mobility. The exclusion criteria were individuals who do not work in the Tanjung Priok sub-district and those who only pass through the area without working or residing there. The data were then analyzed using the Chi-square test. The sampling technique applied was proportionate stratified sampling.*
Result: *The finding showed that 97 (86.6%) workers drove safely and 15 (13.4%) workers drove unsafely. The factors associated with safety riding behavior were knowledge (p-value = 0.001), attitude (p-value = 0.007), driving PPE (p-value = 0.010), driving insurance ownership (p-value = 0.046), and family support (p-value = 0.001).*
Conclusion: *Local government is required to cooperate with the police department to increase workers' knowledge about equipment so safety riding behavior is formed.*
Keywords: *Safety riding behavior, Traffic accident, Workers*

Faktor-faktor yang Berhubungan dengan Perilaku Keselamatan Berkendara pada Pekerja di Kawasan Tanjung Priok, Kota Jakarta Utara

Latar Belakang: *Perilaku keselamatan berkendara merupakan perilaku ideal yang harus dimiliki oleh pekerja untuk meningkatkan keamanan pekerja dan pengguna jalan lain serta meminimalisasi terjadinya kecelakaan lalu lintas. Terjadi peningkatan kasus kecelakaan dan kematian akibat kecelakaan pada tahun 2022 di Jakarta Utara. Penelitian ini bertujuan menganalisis faktor-faktor yang berhubungan dengan perilaku keselamatan berkendara pada pekerja di Kecamatan Tanjung Priok tahun 2023.*
Metode: *Penelitian ini menggunakan desain potong lintang. Penelitian dilaksanakan di Kecamatan Tanjung Priok pada bulan Maret hingga Juni 2023. Instrumen yang digunakan dalam penelitian ini adalah kuesioner yang diadopsi dari instrumen Korps Lalu Lintas Kepolisian Daerah Sumatera Utara dan dua penelitian terdahulu yang disebarkan melalui Google Forms. Sampel penelitian ini adalah seluruh pekerja yang berdomisili dan bekerja di Tanjung Priok dengan kriteria inklusi dalam penelitian ini adalah pekerja yang bekerja dan/atau tinggal di wilayah Kecamatan Tanjung Priok, serta pekerja yang menggunakan sepeda motor untuk mobilitas. Kriteria eksklusi dalam penelitian ini adalah individu yang tidak bekerja di wilayah Kecamatan Tanjung Priok dan hanya melewati wilayah tersebut. Data kemudian dianalisis menggunakan uji chi-square. Teknik pengambilan sampel yang digunakan adalah proporsional stratified sampling.*
Hasil: *Hasil analisis menunjukkan 97 (86,6%) pekerja mengemudi dengan aman dan 15 (13,4%) pekerja mengemudi dengan tidak aman. Faktor yang berhubungan dengan perilaku safety riding adalah pengetahuan (nilai p = 0,001), sikap (nilai p = 0,007), APD mengemudi (nilai p = 0,010), kepemilikan asuransi mengemudi (nilai p = 0,046), dan dukungan keluarga. (nilai p = 0,001).*
Kesimpulan: *Kecamatan Tanjung Priok perlu adanya kerja sama dengan kepolisian setempat untuk meningkatkan pengetahuan pekerja mengenai kelengkapan agar terbentuk perilaku keselamatan berkendara.*
Kata Kunci: *Kecelakaan lalu lintas, Keselamatan berkendara, Pekerja*

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INTRODUCTION

Worker mobilization continues every day and will always continue as long as economic activity continues. The preferred mode of transportation for workers to mobilize is motorbikes.[1] One of the motorbike users is a worker. Worker awareness regarding driving safety behavior is very important because it can prevent driving accidents. This will result in physical and material losses for workers as well as reduced productivity in the company where the worker is employed due to delays in the work process and absenteeism in that position.

Driving safety is the ideal behavior for drivers to have a high level of safety for themselves and other road users.[2] Safe and secure driving behavior can minimize the risk of traffic accidents, thereby reducing losses and contributing to reducing the number of traffic accidents. Three factors shape behavior, namely, predisposing factors, enabling factors, and driving factors. These three factors contribute to the formation of motorbike drivers' safe driving behavior.[3]

Enabling factors related to driving safety behavior include the influence of PPE such as helmets, jackets, gloves, trousers, shoes, and others.[4] Predisposing factors include driving attitude and changes in stimuli received, knowledge about vehicle operation and equipment, and age.[5,6] The driving factor providing driver motivation is the family support factor.[7] Apart from that, motivating factors can include support from colleagues and applicable policies that can encourage and shape behavior.

It is estimated that traffic accidents cause the deaths of up to 1.3 million people per year.[8] More than half of this figure occurs among vulnerable road users, namely pedestrians, cyclists, and motorbike riders. In a literature study referring to WHO and World Bank data, traffic accidents in 24 low to medium-income countries in Asia amounted to 750 million cases per year. Traffic accidents can cause an economic burden because the losses are estimated to reach 3% of gross domestic product and 518 US dollars annually.[9]

The Ministry of Transportation and the POLRI Traffic Corps in 2021 reported a total of 103,645 road traffic accidents. This figure represents an increase of 3.62% from 2020. Motorbikes are the highest contributor to accidents at 73% of the total number of accidents.[10] The North Jakarta administrative area occupies the highest number of deaths from traffic accidents in 2022 with 13,9 people.[11] In the type of motorbike accidents in North Jakarta in 2022, there was an increase in the number of victims compared to 2021, namely from 537 cases to 706 cases. Hence, this problem requires special attention so that it can be addressed immediately so that it continues to increase. If not treated immediately, workers will experience material loss and physical disability. Then, the workplace company will cover the costs of work accidents if the driver does not have driving insurance.

Existing theories and research have not yet explained the relationship between driving insurance ownership and driving safety behavior. Ownership of driving insurance is a novelty that has been studied. This research continues several previous studies have been conducted in various places and populations. The research population was workers who lived and/or worked in Tanjung Priok District because it is the center of government and commerce in North Jakarta. Tanjung Priok is also a strategic area with the highest population in North Jakarta City. This study provides related factors of safety driving behavior and recommendations for the local government.

METHOD

Participants and Design Study

A cross-sectional design was conducted from March to June 2023 in Tanjung Priok District. The study population consisted of all general workers who resided in or worked in Tanjung Priok District, North Jakarta City. A total of 112 workers, calculated using the Lemeshow formula, were selected through proportionate stratified sampling. Sampling was based on inclusion criteria to ensure that the samples collected were correct and representative of the actual population, with a minimum of 14 respondents from each village. The data in this study were primary, and the instrument used was a questionnaire distributed through Google Forms.

Measurements and Procedures

The research measurement process involved collecting primary data using questionnaires. The questionnaires were adopted from two instruments by the Indonesian Traffic Police Corps and two

previous research instruments. The respondents completed the questionnaire online, and they were selected through stratified sampling methods in seven sub-districts in Tanjung Priok.

Statistical Analysis and Ethical Clearance

Some variables were categorized into good and bad. Safety behavior, good knowledge, and good attitude were defined as if the correct/proper answers were 70% of the total question. Complete PPE when driving was defined as wearing a helmet, masks, jackets, gloves, and shoes. The categorized data was analyzed using a Chi-square test. The ethical clearance of the research has been approved by KEPK UPNVJ Institution number 107/IV/2023/KEPK.

RESULT

Table 1 shows that 86.6% of workers behaved safely. Good-knowledge workers were 95.5% of the total subjects. Most of the workers had a good attitude (96.4%). Workers who own driving insurance were 40.2%.

Table 1 Frequency Distribution of Independent and Dependent Variables

Variable	Total (n=112)	Percentage (%)
Driving Safety Behavior		
Not Safe	15	13.4
Safe	97	86.6
Knowledge		
Not Enough	5	4.5
Good	107	95.5
Attitude		
Bad	4	3.6
Good	108	96.4
Type of Work		
Informal	41	36.6
Formal	71	63.4
PPE for Driving		
Incomplete	67	59.8
Complete	45	40.2
Driving Insurance		
Not Have	67	59.8
Have	45	40.2
Family Support		
Bad	36	32.1
Good	76	67.9

The proportion of workers who do not have driving insurance was higher than those who have insurance. About 67.9% of the workers have good family support. One of them was workers who were at risk of work accidents when mobilized to and from work. The research results showed that 86.6% of workers in Tanjung Priok District displayed safe behavior and good driving.

Table 2 Correlation Independent Variable between Safety Driving

Variable	Safety Driving		Total	P value
	Not Safe	Safe		
Knowledge				
Low	4 (80.0)	1 (20.0)	5 (100)	0.001
Good	11 (10.3)	96 (89.7)	107 (100)	
Attitude				
Bad	3 (75.0)	1 (25.0)	4 (100)	0.007
Good	12 (11.1)	96 (88.9)	108 (100)	
Type of Work				
Informal	8 (19.5)	33 (80.5)	41 (100)	0.247
Formal	7 (9.9)	64 (90.1)	71 (100)	
PPE for Driving				
Incomplete	14 (20.9)	53 (79.1)	67 (100)	0.010
Complete	1 (2.2)	44 (97.8)	45 (100)	
Driving Insurance				
Not Have	13 (19.4)	54 (80.6)	67 (100)	0.046
Have	2 (4.4)	43 (95.6)	45 (100)	
Family Support				
Bad	11 (30.6)	25 (69.4)	36 (100)	0.001
Good	4 (5.3)	72 (94.7)	76 (100)	

Workers in the region Tanjung Priok have good driving safety because they have good knowledge and attitude, which was also a predisposing factor. The factor contributes to its formation behavior from within the individual himself. However, complete driving PPE and awareness of having insurance driving was still low. Awareness workers would be affected by factors that were still low outside of themselves. However, it was still supported by the workers' families and strengthened their ability to behave safely when driving.

Table 2 shows that the results obtained a p-value = 0.001, indicating a difference between the proportion of workers with poor knowledge and those with good knowledge of driving safety behaviors. Moreover, the

relationship between attitudes and driving safety behavior correlated with the result p-value = 0.007.

As evidenced by this, the proportion of driving safety behaviors differs between workers with a bad attitude and those with a good attitude. Driving safety behavior did not differ between informal and formal work. The analysis showed a relationship with p=0.247.

The use of PPE impacts driving safety. This resulted in a p-value = 0.010, or there was a difference in the proportion of safe driving behavior between workers who used complete driving PPE and workers who did not use complete driving PPE. Workers who have insurance exhibit safer driving behavior. The p-value was 0.046 based on the results. Family support was a factor that affected workers when driving. The outcome was a p-value of 0.001.

DISCUSSION

Knowledge

Implementing safe behavior when driving can minimize traffic accidents. Behavior driving safety is formed by several factors, including factors predispositions, driving factors, and factors amplifier.[4] Knowledge of a person's knowing process is obtained through their five senses.[12] A person who understands, applies, synthesizes, and evaluates the results of their thoughts is considered to have good knowledge. The instrument used in this research questionnaire was an instrument from the Indonesian Police Research and Development Center. In six provinces in Indonesia, this instrument has been used to measure public knowledge. The knowledge questionnaire consists of questions on proper driving techniques, the rights of other road users, and maintaining good vehicle conditions.[13] In the recapitulation of answers, 22 (19.6%) workers in Tanjung Priok District who answered incorrectly to statement B3, which contained motorbikes could stop on every road except in certain conditions that could endanger safety, security, and traffic order. Driving safety behavior is the ideal behavior that should be possessed when driving so as to have a high level of security for drivers and other road users.[14]

Research conducted by Lestari and Ardi showed a correlation between knowledge and driving safety behavior on online motorcycle taxis in Yogyakarta City, with a p-value of 0.035.[15] According to this research, there are still a lot of online motorcycle taxi workers who are not knowledgeable about using the front brake when braking suddenly. Using the front brake is considered riskier and ineffective when the driver brakes suddenly. The reason for this is that the rear wheel engine, which is the power source for running, may not have fully stopped, which can cause the steering to sway or tilt. Efforts are necessary to increase the knowledge of online motorcycle taxi workers about the effectiveness of using the front brake. Drivers should be able to stop if these conditions occur. If they continue to force the motorbike to start, it can increase the risk of accidents. Although 96.3% workers possess good knowledge, it's still possible for workers to think incorrectly when faced with certain conditions. Several aspects of knowledge can be improved because it has a significant relationship with driving safety behavior.

Attitude

A good attitude is needed in driving safety behavior because it takes a quick response. So the driver can adapt and respond to the environment. Rahmah and Syukri conducted research that supports this research.[4] The p-value of 0.000 indicates that there was a correlation between attitudes and driving safety behavior among motorcycle taxi drivers in Jambi City. Online motorcycle taxis have a more negative attitude than those who behave positively when driving. Drivers' attitudes based on a partner system prioritize customer service. For example, it is permissible not to wear a helmet when a motorbike taxi passenger should wear one, as long as consumers are comfortable and happy. If consumers are forced to do things they do not want, it will have an impact on a decrease in driver ratings and status accounts that were suspended due to low ratings. Other research in the same direction is a study on a population of drivers in Paal Merah District, Jambi.[16] The research obtained p-value = 0.001 which means there is a relationship between attitudes and safety behavior. The proportion of motorists who are nice is much higher in comparison with the bad. Even so, the attitude needs to be improved and maintained when driving because attitude is directly related to stimuli that shape behavior. Motorbike riders already realize that being kind, like bringing driving equipment and using complete PPE, is

an obligation. However, they haven't been able to afford it, so there is still no one who behaves less well.

This aligns with stimulus theory, the organism, the response that is triggered.[17] If the organism receives a stimulation, it will respond with an action done continuously, forming behavior. An individual with a positive attitude towards something also creates good behavior. The better the driver's attitude, the better their behavior while driving. In this research, attitude questions were also adopted from the National Police Research and Development Center, which assesses respondents' answers using a Likert scale. Results of answers to statement C7 show there was still 7.1% of workers in Tanjung Priok District disagree with smoking and eating while driving. It cannot be justified because it can interfere with driving concentration. Apart from that, if a motorbike driver is smoking, flying cigarette embers are also dangerous for other road users if they come into contact with the eyes or inhale. It will affect the concentration of other drivers because the stimulation is detrimental so the driver may respond to this suddenly and reflexively. The response is sudden and reflex, among others, rubbing eyes, coughing, or stopping suddenly if the embers still burn and get into the eyes or nose. This condition can be dangerous to the safety and health of other drivers who are behind in causing traffic accidents. There is a need for worker awareness while driving, they are allowed to eat or smoke. Thus, workers will have a good attitude when driving to create safe driving safety for you and other road users.

Type of Work

The results of the analysis obtained a p-value = 0.247. This means that there was no significant relationship between the type of work and driving safety behavior among workers in Tanjung Priok District. Previous studies were performed among the online motorcycle taxi population, students, and food delivery. Meanwhile, this research combines several types of work categorized as informal and formal. This categorization is based on employees, workers, and employees, which are military forces, police, teachers, and lecturers, into the formal category. Meanwhile, motorcycle taxi drivers, entrepreneurs, casual daily workers, and traders fall into the informal category.[18] In the results of this research, most workers in Tanjung Priok District work in the formal sector (69.4%).

One of the requirements for someone to be accepted for work is a certification that shows competency in a skill they have. Then, certification related to driving safety includes history of safety riding training. Usually, training is only given to online motorcycle taxi drivers who are classified as doing an informal type of work. Safety riding training is optional for many types of work, especially in the formal sector. The population at risk in this study are informal workers because they spend more time on the road than formal workers, who mostly mobilize when going to and from work. One type of informal work is online motorcycle taxis. This profession requires a history of safety riding training, provided when registering as a partner. Meanwhile, formal workers who are classified as a non-risk group are not required to have a history of safety riding training as one of the conditions for being accepted for work. There was no relationship between the type of work and safety riding behavior because the population at risk has safety riding training compared to those who are not at risk.

PPE For Driving

PPE used when driving is essential and becomes a regulation to be applied. Various PPE for driving, including helmets, goggles, gloves, jackets, trousers, and shoes, still need to be recognized by motorcyclists.[18] In this research, the p-value = 0.000 was obtained, which shows a relationship between driving APD and driving safety behavior among online motorcycle taxi drivers in Jambi City.[4]

According to this research, only 34.7% of drivers had complete PPE. They have not implemented complete PPE for drivers for a long time, which causes many drivers to be reluctant and indifferent to the completeness of their driving. This results in a more significant proportion of unsafe driving behavior than safe driving behavior. These results were also supported by the research literature review of Yousif.[19] This research showed that wearing PPE, such as jackets with reflectors and brightly colored PPE, can increase driver visibility.

The ability to see the most distant object clearly with the naked eye is known as visibility (Center for Maritime Meteorology).

In bright or dark conditions and bad weather conditions, riders who use PPE with reflectors

and bright or neon colors can enhance visibility for other drivers. It makes them visible to other drivers so they can set a safe distance and act safely when driving together when visibility is low. In this study, workers were defined as complete PPE when driving if they used a helmet, mask, gloves, jacket, and shoes.[18] Other PPE options, such as trousers and glasses, are not included in the total score assessment. The research results showed that 59.8% of workers in Tanjung Priok District did not use complete PPE when driving. This proportion is higher than the number of workers who only use complete PPE, namely 45 (40.2%) workers. Even though 99.1% of workers comply with wearing helmets when riding, many workers still do not wear other equipment.

One essential PPE is wearing shoes, which 28.6% of workers still do not use. When driving, PPE is not just a helmet but the lowest hazard control and protective measure. There needs to be an effort to increase awareness about the use of PPE among the authorities. Hence, this needs attention, especially from the local police, so they can follow up by re-implementing the Jaya Compliance program periodically and issuing fines for those violating it. Thus, the awareness of workers in Tanjung Priok District to use complete PPE when driving can be increased and minimize the occurrence of traffic accidents because this factor has an essential role in forming safe driving behavior.

Driving Insurance

The results of the analysis obtained a p-value = 0.046. The relationship between driving insurance ownership and driving safety behavior among workers in Tanjung Priok District is significant. The research results that show this relationship are novel in this research. According to the previous study, workers who did not pay for driving insurance had a higher incidence of accidents.[20] The underlying reason for non-payment of driving insurance is the driver's low awareness of the possibility of a traffic accident that could occur at any time. According to this research, people with a high risk of traffic accidents will choose an insurance package covering higher handling costs. Insurance was found to reduce accidents by 20% and 35%–40% in at-risk populations in Australia and New Zealand literature studies.[19] Nine out of ten insurance advisors in the study were able to influence positive changes in motorists' attitudes, the long-term effect of which was behavioral change. Several studies based on big insurance data estimate that insurance can reduce the risk of accidents by up to 20%.

A study conducted using the usage-based insurance (UBI) concept estimated that UBI could reduce the risk of accidents in at-risk populations by up to 35%–40%. UBI offers benefits in monitoring and reinforcement to promote safer driving behavior. The monitoring includes information about speed, acceleration, distance, travel time, and driver distraction. Unfortunately, this concept has not yet been implemented. It differs from that in Indonesia, so there may be differences in risk estimates and attitudes toward the idea of driving insurance in Indonesia. Driving insurance is a risk-transfer product that requires the insured to pay a premium and is processed by the responsible institution when a traffic accident occurs. Insurance institutions offer products based on people's protection rights when traffic accidents occur. The legal basis governing this matter is in Law No. 33 of 1964 concerning Compulsory Passenger Accident Insurance Funds and Law No. 34 1964 concerning Compulsory Road Traffic Accident Insurance Funds. For example, with Jasa Raharja Insurance, there is a compensation fee depending on the risk and type of mode used when the driver has a traffic accident.

This type of compensation is given to victims with certain conditions, including death, permanent disability, treatment, burial, reimbursement of first aid costs, and ambulance costs. The amount of compensation given also varies depending on the conditions mentioned previously, whether for land, sea, or air vehicles. Hence, this can relieve victims and families who experience traffic accidents.[13] In this study, only 40.2%of workers had driving insurance. The types of insurance owned by workers include Bhakti Bhayangkara Insurance (4.5%), Jasa Raharja Insurance (17.0%), and other private bank insurance (20.5%). Hence, this requires special attention because the level of public awareness regarding the ownership of driving insurance still needs to be higher. The low awareness of people with insurance is due to the need for more information and institutions offering driving insurance. There needs to be promotional and introduction efforts from insurance institutions to workers in Tanjung Priok District so that they can access

these facilities. Moreover, the various roads in Tanjung Priok are busy, and many large vehicles pass through them. This condition has a high risk of traffic accidents for workers when driving. Moreover, ownership of driving insurance has a relationship with driving safety behavior.

Family Support

The results of the analysis obtained a p-value = 0.001. The relationship between family support and driving safety behavior among workers in Tanjung Priok District was significant. The results of this research obtained a p-value of 0.001, which means a relationship exists between family support and driving safety behavior. A previous study showed students with high family support are more likely to have safe behavior with a p-value 0.002.[21] Family support was provided in the form of motorbike maintenance, such as regular maintenance, and encouraging students to use protective equipment such as jackets, shoes, and other protective equipment. Teenagers, including vocational school students, dominate safer behavior, which is why families provide this support.

Teenagers at this age tend to look for their identity. One way to do this is when they behave while driving. The support of family and friends around them is very influential in shaping a teenager's behavior.[22] Other research in the same is research by Novianus.[13] Other research in Yogyakarta showed 86,2% of online taxi drivers had good family support and safe driving behavior.[7] The family receives support in the form of warnings and suggestions, as well as financial assistance, such as periodic vehicle maintenance costs. Students' family support comes from parents and other family members so they can implement safe behavior when driving. Family support is a factor that helps a person act and shape behavior. In this research, the family support instrument comes from research by Sriyanti, which consists of 10 questions.[23] Most Tanjung Priok District workers have good family support (67.9%).

The family support instrument consists of remembering to bring essential documents when riding, motorbike maintenance, advice on safe riding, and wearing a helmet. About 27.7% of workers were still allowed by their families to ride motorbikes even though they did not have a driver's license. Every driver is required to have a driver's license, especially when driving on the highway. The rule of driving is on Law No. 14, 1992 Article 18 (1) concerning road traffic and transportation. The family, both parents and other family members, should warn them and not allow their family to take motorbikes on the road without carrying a driver's license. Driver licenses are issued to worthy drivers so they are prepared and have good driving knowledge. So, family members do not need to worry when their family members ride a motorbike. Apart from that, it can also minimize the occurrence of traffic accidents because their families drive properly and can behave safely.

CONCLUSION

There was a relationship between knowledge, attitude, driving PPE, vehicle insurance ownership, and family support on driving safety behavior among general workers in Tanjung Priok District, North Jakarta City. General workers in Tanjung Priok District were expected to be able to use complete driving PPE and not just helmets, such as jackets, gloves, masks, trousers, and shoes, and register for driving insurance because worker awareness still needs to improve and establish good relationships. Harmony with the family is always a reminder to implement safe behavior while driving.

The government should be able to intensify programs regarding the knowledge of workers in Tanjung Priok sub-district regarding vehicle operation and equipment, work together with the local police to educate the public about good attitudes, and raise awareness of the importance of using PPE for driving through the Jaya program or other programs, as well as updating data and reporting accident and accident data. Deaths were surveillance, so it can be a benchmark for improving efforts for workers and society. In suggestion, future researchers can include unmeasured in this study because of limited knowledge and measuring instruments. Other at-risk populations need to be educated, such as drivers of large vehicles or vehicles with more than two wheels who mobilize in Tanjung Priok District.

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