

Safe and Economical Driving Knowledge Vocational School Students in Karangmojo District Gunungkidul Regency

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Abstracts. The purpose of this research is to find out how high-level safety and economics riding knowledge among students. This Research type is descriptive research. Research instrument uses a multiple choice written test. Data analysis technique using descriptive statistic. Research result shows that: 1) The level of safety riding knowledge among students is included in the very high category with an average value 78,81, and 2) The level of economic riding knowledge among students is included in the very high category with an average value 78,81.

Keywords: knowledge, safety riding, economics riding

Introduction

Motorcycle growth in Indonesia continues to increase. Based on the results of the Central Statistics Agency's report sourced from the National Police Traffic Corps in 2016 the number of motorcycles reached 105.15 million units, which means an increase of 8.3% from the previous year which was only 98.88 million units ([https:// www.bps.go.id](https://www.bps.go.id)).

The large number of motorbikes on the highway causes various kinds of risks such as traffic jams and accidents. WHO (World Health Organisation) states that around 1.25 million people die every year due to traffic accidents. Traffic accidents are the main cause of death among young people, aged 15-29 years. More than 90% of road deaths occur in low and middle income countries ([http: www.who.int/media center / factsheets / fs35 / en /](http://www.who.int/media center / factsheets / fs35 / en /)).

Based on the results of the 2018 Central Bureau of Statistics report, the number of traffic accidents in Indonesia in 2015 amounted to 98,970 cases, 26,495 people died, 23,937 people seriously injured, 110,714 people were slightly injured, material losses amounted to Rp. 272,318 million. While in 2016 the number of accidents increased by 106,129 cases of accidents, 26,185 people died, 22,558 people seriously injured, 121,550 people were slightly injured, material losses reached Rp. 226,833 million ([http // www.bps.go.id](http://www.bps.go.id)).

Based on the results of the survey at Unit Laka, the Gunungkidul Regional Police and Brigadier General Ramanda Rifqi Fadlurrahman, in Gunungkidul, there were 581 traffic accidents from January 1, 2017 April 04 2018. The total death toll was 104 people, one injured and one injured light amounted to 696 people. Total value of loss of vehicle material Rp. 268,350,000. Traffic accidents in Gunungkidul are dominated by teenagers aged 15-19 years.

Traffic safety must be considered and prioritized for the creation of security on the highway. Law number 20 of 2009 article 105 says that every person who uses the road must behave in an orderly manner and prevent things that can hinder, endanger the security and safety of traffic and road transportation, or which can cause damage to the road.

From the explanation above, knowledge about safety riding such as safe driving behavior, driving equipment and motorcycle equipment need to be known to motorcyclists so that the risk of accidents on the road can be reduced.

Based on interviews at Karangmojo Development Vocational School on April 22 2018 and Karangmojo Muhammadiyah Vocational School on April 26 2018 for each Vocational School 5 students about safety riding, from 5 students at Karangmojo Development Vocational School 3 students said

they understood safety riding and from 5 students at Muhammadiyah Vocational School Karangmojo 4 students said they understood. But based on observations there are still students who do not use helmets, vehicle attributes that are less complete and motorbike modifications that are less secure such as changing standard tires to smaller sizes. This can cause potential traffic accidents.

In addition to knowledge of safe driving / safety riding for driving safety and reducing the risk of accidents, please also know about how to drive economically (eco riding). Fuel consumption in Indonesia continues to increase every year. Pertamina's marketing director, M Iskandar, said that the total consumption of all BBM products in the first half of 2017 reached 32.6 million kilo liters (kl), while consumption in 2016 was 31.7 million kilo liters (kl) for all BBM products ([http:// industry. bisnis.com](http://industry.bisnis.com))

In the midst of increasing fuel consumption and fuel prices, economic driving behavior (eco riding) must be considered in order to be more efficient in using driving fuel economically which can contribute to a decrease in fuel consumption.

Based on interviews at Karangmojo Development Vocational School on April 22, 2018 and Karangmojo Muhammadiyah Vocational School on April 26, 2018, interviews with eco riding with 10 students from both Vocational Schools have not been too knowledgeable about eco riding such as understanding eco riding and more economical use of vehicles. . Based on observations there are students who modify motorbikes by replacing non-standard components such as carburetors and exhausts that can make the fuel supply more wasteful.

Because there are still students who do not know and do not apply safe and economical driving, a deeper study is needed on "Safe and Economical Driving Knowledge among Vocational Students in Karangmojo District, Gunungkidul Regency, Yogyakarta"

Safety Riding

Driving Safely / Safety Riding is a safe driving behavior that can help to avoid accidents. Safety Riding is the basis for further driving that pays more attention to safety for drivers and passengers (Ariwibowo, 2013: 4).

There are several components of safety riding that need to be implemented, such as driving behavior which includes orderly behavior, preventing things that can hinder, endangering traffic security and safety and road transportation, or which can cause damage to roads, comply with command signs or prohibited signs, markers roads, traffic signaling devices, traffic movements, stops and parking, warnings with sound and light, maximum or minimum speed, and procedures for coupling and attaching to other vehicles (Law No. 22 of 2009 article 105 and 106) .

Use driving equipment such as helmets, jackets, shoes and gloves. Always carry out checks before using a vehicle to prevent accidents or equipment damage (PT YIMM, 2013: 2-1)

Eco Riding

Driving economically is a way to drive to save fuel consumption. The use of fuel depends on the way and style of driving (PT YIMM, 2013: 6-4). Economical driving includes 1) How to drive that can save fuel: slowly pulling gas, while accelerating, Do not operate the engine with high speed if there is no load and turn off the engine if it stops too long on congested roads and train crossings and so on (PT YIMM, 2013: 6-4); and 2) Checking and repairing motorbikes so that more efficient use of fuel includes the use of standard components of motorcycle manufacturers, adjusting valves, making lattice manifolds, using quality engine oil, increasing compression of engine combustion chambers, carburetor and injector routine service ([http://www.mikasi.co.id/2013 / 15](http://www.mikasi.co.id/2013/15))

Method

The type of research used is descriptive research. The data collection technique uses a multiple choice written test. The population of this study were all students of class XI majoring in automotive with a total of 187 SMK students in Karangmojo. Sampling using proportional random sampling method and obtained a sample of 127 students.

Validity test is calculated using the help of anates application with the following results:

Tabel 1. Validity Test Results

Variabel	Number of items originally	Number of items valid	Number of items dropped
Drive safely	40	33	7
Drive economically	10	8	2

Reliability test is calculated using anates application with the following results:

Table 2. Results of Reliability Test

Variabel	Rhitung	rtabel	Reliabilitas
Drive safely	0,93	0,86	Reliabel
Drive economically	0,80	0,67	Reliabel

Tables 1 and 2 show that driving research instruments that are safe are said to be valid and reliable so they are valid and can be trusted as a means of collecting research data. Next, the data is analyzed using descriptive statistics.

Results And Discussion

Description of the knowledge data on how to drive safely / safety riding at Se-Karangmojo Vocational High School is presented in table 3 below:

Table 3. The level of safe driving knowledge

Min	Max	Mean	Standard Deviation	Category
63,63	93,94	78,81	8,49	Very high

Table 3 shows that the level of knowledge of safe driving / safety riding of SMK Karangmojo students with an average value of 78.81 is categorized very high with the lowest value of 63.63, the highest value of 93.94 and standard deviation of 8.49.

The description of the frequency distribution of safe driving / safety riding knowledge is divided into 5 categories calculated from the ideal lowest score and the ideal highest score, ie 0-100 using the normal curve criteria formula.

Table 4. Frequency Distribution

Very Low	Low	Medium	High	Very High
0	0	0	43	84

Table 4 shows that there are no respondents who have knowledge of how to drive safely in the very low, low and medium categories. A total of 43 respondents or 33.85% had knowledge of how to drive safely in the high category. A total of 84 respondents or 66.15% had knowledge of how to drive safely in a very high category.

The results of this study indicate that the level of safe driving knowledge of Karangmojo Vocational Schools is good because it is in a very high category, but having very high knowledge about safe driving is not always balanced with awareness to apply the practice of safety riding while driving, indicated by observations there are students who do not use helmets when driving, using tires that do not fit the standard size so they are at risk of an accident.

In line with the research conducted by Yugo Fajar Suasana (2014), results were obtained that 94% of Jember University students had knowledge of safety riding in the high category and there was no relationship between knowledge and safety riding practices ([http:// repository .unej.ac .id / handle / 123456789/21033](http://repository.unej.ac.id/handle/123456789/21033)).

Knowledge of safe driving / safety riding should be balanced with attitude and awareness of applying safe driving practices so that safety while driving is always maintained. A safe driving attitude can be improved through a safety riding program. In line with the research conducted by Adzkie Andriani (2017), it was found that the average value of safe driving attitudes increased by 12.6% after a safety riding program was held (<http://eprints.uns.ac.id>).

The description of the knowledge data on how to drive economically / eco riding at SMK Karangmojo is presented in table 5.

Table 5. Economical level of driving knowledge

Min	Max	Mean	Standard Deviation	Category
37,5	100	80,01	16,31	very high

Table 5 shows that the level of driving knowledge of economics of SMK students in Karangmojo with an average value of 80.01 is categorized very high with the lowest value of

37.5, the highest value of 100 and standard deviation of 16.31.

The description of the economical frequency distribution of knowledge is divided into 5 categories calculated from the ideal lowest score and the highest ideal score, ie 0-100 using the normal curve criteria formula.

Table 6. Frequency Distribution

Very Low	Low	Medium	High	Very High
0	1	7	29	90

Table 6 shows that there are no respondents who have knowledge of how to drive economically in a very low category. A total of 1 respondent or 0.78% had knowledge of how to drive economically in a low category. A total of 7 respondents or 5.51% had knowledge of how to drive economically in the medium category. A total of 29 respondents or 22.83% had knowledge of how to drive economically in a high category. As many as 90 respondents or 70.88% have knowledge of how to drive economically in a very high category.

Based on the results of the study it can be seen that the level of knowledge of economical driving / eco riding of SMK students in Karangmojo with an average value of 80.01, a minimum value of 37.5 and a maximum value of 100 are categorized very high. Indicators about how to drive economically, such as knowing how to drive, which can save fuel use, are in a very high category and indicators of various motorcycle inspections and repairs so that more efficient use of fuel is included in the high category.

Although the results of this study indicate that the average value of economic driving knowledge in Karangmojo Vocational Schools in the category is very high, the results of observations show that there are still students who modify motorbikes such as replacing carburetors and exhausts so that the use of fuel becomes wasteful. In line with the research conducted by Toni Utomo (2013) it was found that there was no difference between motorists who had more knowledge about Eco Riding and those who did not know (Journal of Industrial Engineering ITS Vol. 1, No.1, 2013).

Knowledge of economical driving in a very high category should be balanced with awareness to implement economical driving

methods so that motorbikes become fuel efficient. The eco riding program or eco riding counseling can be a way for SMK students in Karangmojo to be motivated to implement eco riding / eco driving methods.

Conclusion

A safe level of driving knowledge of SMK students in Karangmojo Gunungkidul Subdistrict is categorized very high with an average value of 78.81.

The level of economic driving knowledge of SMK students in Karangmojo Gunungkidul Subdistrict is categorized very high with an average value of 80.01

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