

Trend of Traffic Accident From 2012 Until 2016 Based on The Accident Report Data and Police Investigation Report in Bogor City

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Abstract

Background: World Health Organization (WHO) declared a traffic accident could claim about 1,2 million human lives every year and the injured or disabled victim could reach more than 50 million people. Preliminary study results in from Bogor City Police Department showed that there was an increase in traffic accidents by 100 accidents in 2015 to 148 accidents in 2016.

Aim: The purpose of this research is to investigate the trend of traffic accident during five years from 2012 until 2016 based on the accident report data and Police Investigation Report of traffic accident from Bogor City Police Department.

Methodology: The type of this research is descriptive quantitative by using secondary data. The method of taking sample in this research is using total sampling technique with the amount of sample 609.

Results: The trend of traffic accidents increased from 2012 to 2014 and from 2015 to 2016, decreased from 2014 to 2015.

Conclusion: The most common accidents occurred in the type of motorcycle vehicle with male riders, aged between 12 years to 25 years, work as private employee, and have a high school education background. The most common types of accidents are double at two-way locations at 18.01-24.00 with the impact of injuries and caused by unskilled drivers.

Keywords: *Accident, Traffic, Trend, Police investigation report*

Introduction

Traffic accidents in Indonesia in 2009 reached 33,827 people where 36% (12,178 people) died. This figure is very worrisome because among the 100 people who had an accident 36 people died and almost 50% of the victims were men from the productive age group. This results in a massive decrease in productivity.¹

The preliminary study conducted at Bogor City Police showed that there was an increase in traffic accidents by 100 accidents in 2015 to 148 accidents in 2016 due to an increase in the number of vehicles each year.

Methodology

This research is a descriptive quantitative research, using secondary data based on accident report data and Police Investigation Report of Bogor City during 2012 - 2016 to see traffic accident trend for the last 5 years .

This research was conducted at Police Department of Bogor City, Accident Records Division from August 2016 to May 2017. The population in this research was motorists who experienced the incident of traffic

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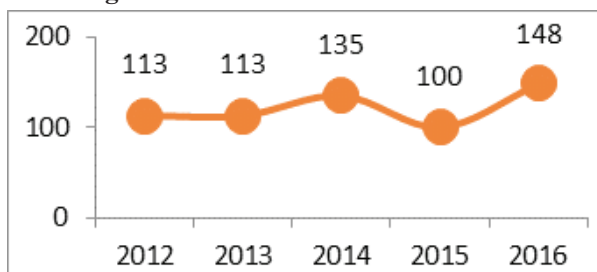
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accidents in Bogor City from 2012 until 2016 which amounted to 609 cases of accidents. Total sampling technique was used and the number of samples was equal to the population which amounts to 609 cases of accident.²

The variable in this research was traffic accident incident in Bogor City area from 2012 until 2016. Data analysis was obtained through univariate data analysis which aimed to explain the characteristics of research variables.³ Type of data used was secondary data, obtained from Police Investigation Report of Traffic Accident Bogor City Police Department. Further data analysis to see the trend of work accident was done by using Microsoft Excel.

Research Result

Figure 1. Trend Amount of Accidents



The number of incidents of traffic accidents in Bogor City was increased in 2012 until 2014 and in 2015 until 2016, while it was decreased in 2014 until 2015. The highest traffic accidents occurred in 2016 as many as 148 traffic accidents.

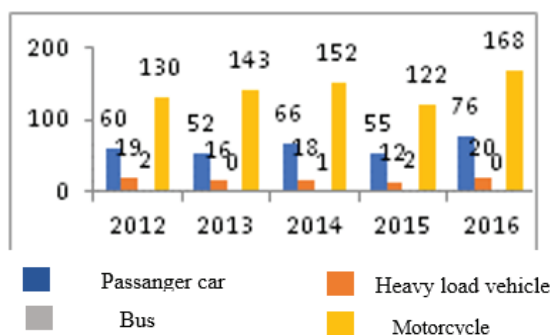


Figure 2. Traffic Accident Based on Vehicle Type

Figure 2 is a traffic accident data that occurred based on the type of vehicle from the year 2012-2016. There were 715 motorcycle accidents happened during four years while the highest accident rate was found in 2016 with 168 motorcycles accidents.

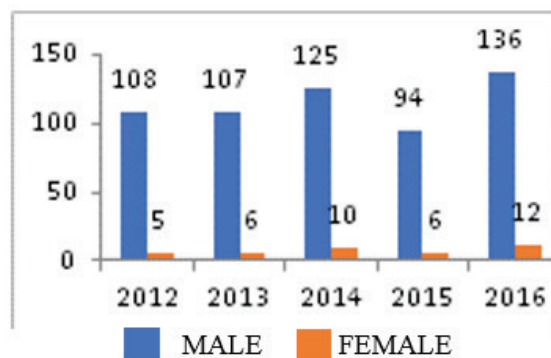


Figure 3. Traffic Accidents Based on Gender

Figure 3 is traffic accident data based on the gender of motorists. There were 570 accidents happened in male motorists. The highest accident rate occurred in 2016 with 136 accidents in male motorists. m

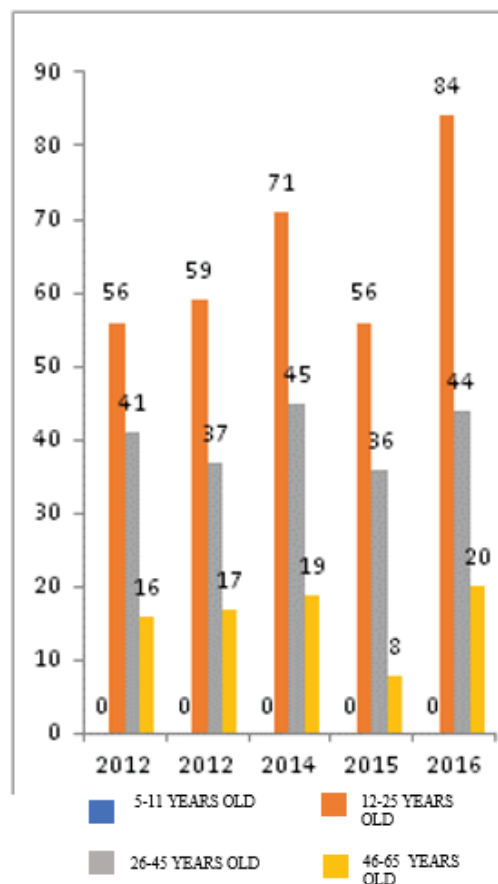


Figure 4. Traffic Accidents by Age

Figure 4 is a traffic accident data based on the age of the motorists. Traffic accidents from 2012-2016 occurred mostly in adolescents (12-25 years). The highest accident rate occurred in 2016 in the age group of 12-25 years with 84 accidents.

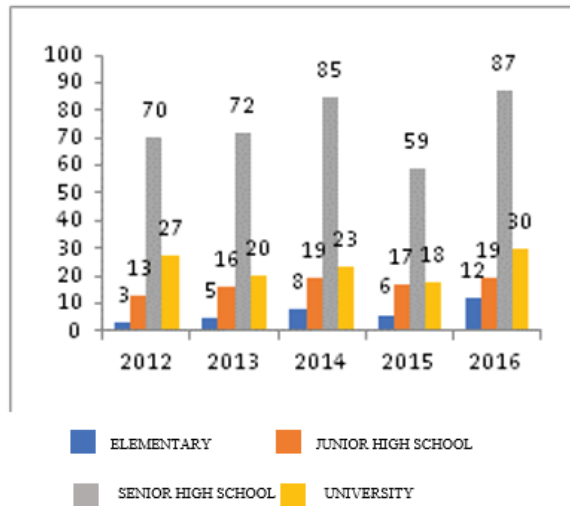


Figure 5. Traffic Accident Based on Background Education

Figure 5 is traffic accident data based on educational background of motorists. The highest accident amount occurred in 2016 on a driver with a senior high school education background with total of 87 accidents.

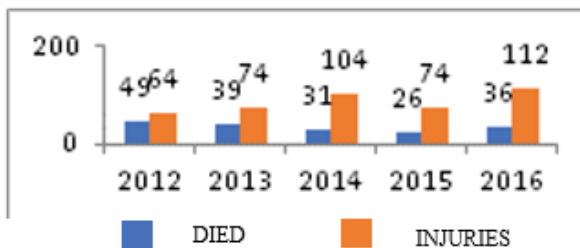


Figure 6. Traffic Accident Based on Impact Criteria street.

Figure 6 is a traffic accident data based on the impact criteria from 2012-2016 which was resulted in 428 accidents. The highest accident occurred in 2016 as many as 112 accidents causing injuries.

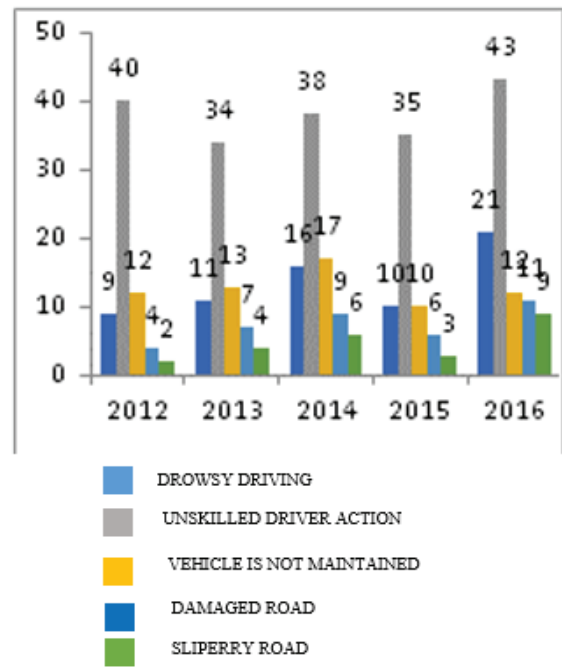


Figure 7. Unsafe Actions and Conditions Cause Traffic Accidents

Figure 7 is a traffic accident data based on unsafe actions and conditions. Traffic accidents occurred on the basis of unsafe actions and conditions from 2012-2016 were mostly due to unskilled driver action with 228 accidents. The highest accident number was caused by unauthorized driver action occurred in 2016 as many as 53 accidents.

Discussion

The high incidence of traffic accidents in Bogor City was directly proportional to the growing number of densely populated residents in Bogor City which was also accompanied by the increase in the number of vehicle ownership. Based on data from the Department of Road Traffic in 2012, the number of motor vehicles in Bogor reached 301,086 vehicles with motor vehicle growth increased by an average of 14.47% per year.

The incidence of traffic accidents started to increase in 2016. This condition was influenced by the increasing number of violation cases on motorists. During the implementation of zebra operations in 2016 cases of violations reached 19,475 with 72% of it including categories of serious violations or traffic violations that potentially result in fatal traffic accidents. This involved breaking the borders, exceeding the speed limit, no driver’s licence and violation of traffic signs.

Other research by Dendy Wicaksono (2014) showed that the number of traffic accidents in motorcycles occupied the highest position compared to other four-wheeled vehicles in Semarang city. This situation was influenced by the number of motorcycle vehicles which was greater than the number of other four-wheeled vehicles that amounted up to 53.78%.⁴

In terms of age of motorists with the most accidents group was teenager group (12-25 years). This age group was productive age group with high mobility. Other research results conducted by Sundari (2012) mapped the age of teens most often experienced traffic accidents. This is because adolescence is a period where emotions are overwhelming and it will impact behavior of adolescents who tend to perform actions that violate the rules.⁶ While globally according to WHO in both low-income countries and high-income teenagers group is the age group most often died from traffic accidents.⁷

Based on research conducted by Akhmad David (2015) there was relationship between educational background with the incidence of traffic accidents. The lower level of motorists education level, the higher traffic accident possibility.⁹

Based on accident report data, the incident of traffic accidents usually occurred in low vehicle speed and the resulted traffic accidents were not too severe. According to the Bogor City Police Department, the impact of traffic accidents was influenced by the speed of the driver. When the driver drives his vehicle at high speed, the level of driving difficulty increases which may result in the driver's inability to control his vehicle.

Trend factors causing traffic accidents that occurred from 2012-2016 mostly involved the unskilled drivers. The highest accident occurred in 2016 as many as 53 accidents due to the attitude unskilled drivers.

Based on the results of research the unskilled driver contributed to 228 accidents during the last 5 years. Unskilled drivers factor caused them unable to control their vehicles properly. Therefore, it takes practice and experience in driving so that the drivers will have the natural skills to face various traffic situations.

Irregular motorists, who crossed the speed limit, used the opposite lane, could not maintain a safe distance,

violated parking restrictions, contributed to 190 accidents during the five years period. It can be seen that the this kind of drivers had lack of public awareness toward traffic safety. Another contributing factor to the accident was drowsiness. Drowsiness is a condition where the rider loses power and concentration due to lack of rest (sleep) and or has been driving more than 5 hours without rest. Motorcyclists can also experience sleepiness due to inhaling excessive carbondioxide gas.

Based on the results of research conducted by Akhmad David (2015), there was a relationship between driving behavior (human factor) and unkempt vehicle (vehicle factor) with traffic accidents. Drivers' bad behavior can be caused by non-compliance with the rules on driving safety. The condition of the vehicle will affect the occurrence of traffic accidents. Good supervision and maintenance of vehicles will provide safety on the road.⁹

The last unsafe condition that can cause traffic accidents is environmental conditions around the occurrence of accidents, for example slippery road that was caused by rain or oil spill. Environmental factor was a factor that has the least number of accidents among other factors.

In the book *Human Factors in Traffic Safety* written by Robert E. Dewar and Paul L. Olson (2007), factors related to the occurrence of traffic accidents were divided into 3 such as: human factors, vehicle factors and environmental factors.¹³

Based on the results of this research, the most dominating factor was human factor (driver). The second main cause was the vehicle factor and the least cause was environmental factors. This showed that human factor played an important role in the occurrence of traffic accidents.

If linked between these three factors, unsafe actions and conditions such as unskilled, physical environmental conditions such as damaged roads or slippery roads and unattended vehicle factors will be highly visible. In damaged roads or slippery roads, if motorists are not highly skilled, then the rider will be difficult to avoid hollow road or maintain the balance.

Conclusion

1. Trend of traffic accidents increases from 2012 to 2014 and from 2015 to 2016, decreasing from 2014 to 2015.
2. The type of vehicle that has the most traffic accidents from 2012 until 2016 is a motorcycle vehicle.
3. Characteristics of motorists based on the sex of the most frequent traffic accidents from 2012 to 2016 is male.
4. Characteristics of motorists by age with the most traffic accidents from 2012 to 2016 is the age of adolescents (12-25 years).
5. Characteristics of motorists based on education that has the most traffic accidents from 2012 until 2016 is a driver with a high school education background.
6. The most frequent traffic accidents based on the accident impact criteria from 2012 to 2016 caused many injuries.
7. The most frequent traffic accidents based on the unsafe acts and conditions of traffic accidents from 2012 to 2016 are due to the human factor of unskilled drivers.

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Conflict of Interest: NIL

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