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ROAD ACCIDENTS IN INDONESIA

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1. INTRODUCTION

The World Health Organization (WHO) revealed that almost half of the 1.27 million people who die in road traffic accidents every year around the world were pedestrians, motorcyclists and cyclists. A study has also revealed that most of the people who were killed in road accidents in Indonesia were riders of two or three-wheel vehicles, which is about 61%. Next were pedestrians (15%), cyclists (13%), passengers of 4-wheel vehicles (4%) and drivers of 4-wheel vehicles (3%), as recorded by National Police in 2008, in three provinces.

In spite of the high growth rate of traffic accidents in Indonesia, the data and information acquisition remains difficult. Data or information may be collected from many different sources such as the police department, hospitals, and also insurance companies. However, different figures may come up due to somewhat different definitions of accident victims, e.g., the police department may define death/casualty as a person who dies at the accident scene and at the time of accident. While a hospital may have a different definition on such a death/casualty, in which it does not have to be person who dies on the spot and at the time of an accident. Such a person may die in hospital after sometime, whereas such definition may be adopted by an insurance company.

Figures of accidents in many cities in Indonesia, especially big cities such as Jakarta, may have similar trends due to inherent fundamental problems of an imbalance between supply and demand of traffic systems. Furthermore, data and information about accidents presented is

based on reports from three representative provinces, namely Jakarta, Jambi and West Java.

2. IMBALANCE OF SUPPLY AND DEMAND OF TRAFFIC SYSTEMS

It is suspected that the fundamental problem of traffic accidents is the imbalance of supply and demand. In Jakarta growth of road development as supply is considerably low, which is only 0.01% per annum, compared to its counterpart of demand. Growth of vehicles as a demand side is incredibly high as about 10% per annum. This trend of imbalance may have similar pictures for all big cities in Indonesia, and poor public transport development either in quantity as well as quality could be another significant cause.

A broader view to comprehend such imbalances is apparently related to the uneven growth of the economy throughout the country, and the related emerging social problems. Sustainable growth of migration to big cities which offer better employment and income is inevitable. Those people are contributing to the growing rate of trip demand in such cities. Such an imbalance is now being amplified by a new phenomenon of motorbike use. Growth of motorbikes is incredibly high in many big cities in light of the poor public transport services. In Jakarta alone, motorbike growth is more than 1,000 units per day, and the ownership comes from low to middle class income level people. It is also reported that such growth is remaining sustained and it seems that this group of people may find that a motorbike is their trip solution. The Jakarta Police Department claimed that since 2003 to 2007, motorcyclists were the main victims of traffic accidents.

Some other dramatic reports from the Jakarta Police Department that the Traffic Directorate showed between January to July 2008, traffic accidents in the city claimed 692 lives and left 1,499 people badly injured. Current data of accidents in Jakarta show that there were about 280 traffic accidents claiming 35 lives and injuring 245 people, meaning that more than 10% of the accidents result in a death. Most of the casualties are motorbike users. Furthermore, Figure 2 shows some correlations between traffic accidents that cause casualties with their related variables such as length of road infrastructure, population, and number of vehicles over a 30 year period (1971 to 2001).

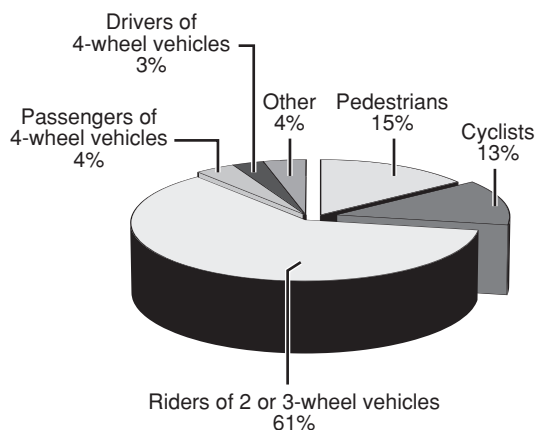


Fig 1. Deaths by road user category (2008)

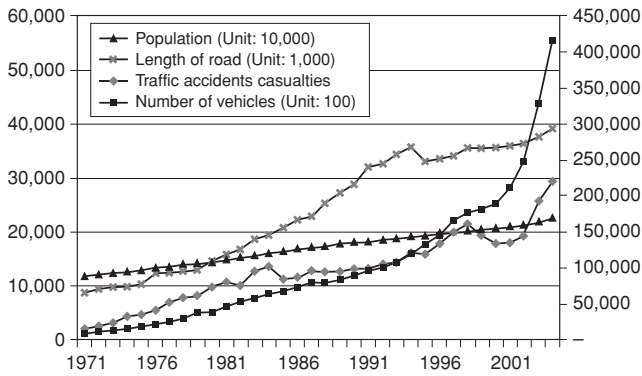


Fig 2. Correlation between traffic accident casualties and other variables

3. IGNORANCE OF HUMAN BEHAVIOR

As many other countries may recognize that there are three main causes of traffic accidents namely, human factors, vehicle factors, and road and environmental factors, Indonesia also has there. Table 1 indicates the contribution of the three factors in traffic accidents, wherein it could be seen that the human factor occupies the largest portion for the total number as well as categorized in their impacts, namely deaths, heavily injured and slightly injured that remain above 90%. It is, however, true that non-human factors in Indonesia have a greater percentage as compared to other countries' figures, and implicitly indicate human errors too, such as ignorance of human to vehicle and road maintenance.

Table 1 denotes of the magnitude of the effect of poor human behavior, and as for Indonesia's case such behavior can be elaborated from driving license ownership. Figure 3 further indicates lesser driving license ownership compared with the growth of vehicles in year 2004 by transport mode. The most notable and worrying figure can be observed from the motorbike mode in which the

Table 1 Three factors of traffic accidents

Factor	Traffic accidents	Dead	Heavily injured	Slightly injured
Human	93%	92%	90%	90%
Vehicle	4%	5%	6%	7%
Road and environment	3%	3%	4%	3%

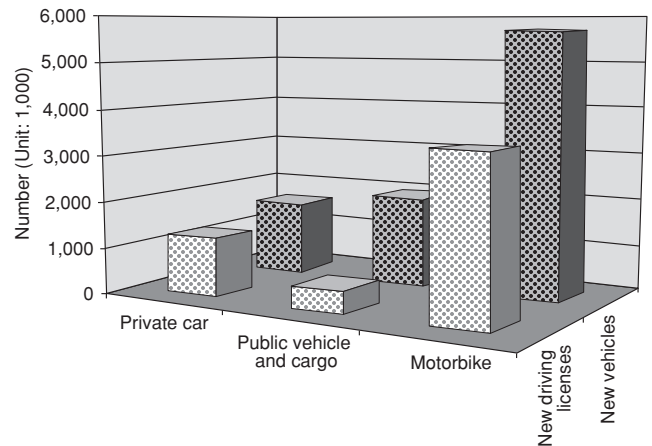


Fig 3. Growth of new vehicles compared to driving license by modes (2004)

number of new driving licenses is much less than number of new motorbike units. In practice, motorbike users are more aggressive and reckless due to their flexible mobility, and in addition to such adverse behaviors, motorbikes show a trend of being used for long distance trips such as intercity trips, and passengers for more than the capacity of two persons riding a bike is not uncommon.

4. POSSIBLE POLICY FOR RESOLUTION

As can be expected, traffic accidents in Indonesia have some fundamental reasons that are not merely an engineering problem. The steadily growing population, poor service of public transport, and driver behavior may become significant causes of traffic accidents. It is also indicated that most of the big cities have similarities in traffic accident problems, and so a resolution to traffic accidents is of prime concern and has to elaborate the whole traffic accident situation in Indonesia.

Three streams of basic resolution may be imposed dealing with public transport service, road infrastructure development, and management of transport demand. Public transport should be a priority to be undertaken and enhanced in both quantity and quality due to limited economic capacity of the government to provide road infrastructure. In the light of the increase in oil price, public transport may come up as a global solution for most cities in Indonesia. Affordability or buying capacity of people to make their trips is something to be fulfilled with an

inexpensive transport mode. Expensive transport modes should be replaced with the creation of effective and efficient public transport for wider communities. The proposal of a sound public transport system may, to some extent, be expected to shift people from private vehicles to public transport and so reduce traffic volume and congestion, thus culminating to fewer traffic accidents.

Road infrastructure development is another stream to be continuously built. The fact of the ratio of road to land area in most big cities in Indonesia is less than 7% can be expected to create more traffic congestion and accidents. An increase in road length should also be accompanied with intensive road maintenance which is also very critical. There are some reports that indicate there are more traffic accidents occurring during the rainy season, since there is more of road damage during this period. Those traffic accidents are mostly motorbike users that are prone to adverse road conditions. Hence road infrastructure building in the existing network that optimally gives rise to traffic movement could be an effort to alleviate, or at least to reduce traffic congestion and accidents.

The imbalance of supply and demand in the traffic system is indeed happening all time. This is due to a very dynamic situation of trip makers seeking a greater level of service while the supply side, namely road development etc, is keeping up with its development. However, limited capacity of government to provide more infrastructure cannot always meet rapid growth of demand or trip makers, so demand management should be conducted to optimally utilize the existing road infrastructure. To such an extent, controlling transport demand or traffic management measures is useful in reducing traffic congestion and accidents eventually.

5. CONCLUSIONS

This paper briefly discusses the trends in traffic accidents in Indonesia, and despite the difficulty to obtain traffic accident data three provinces, which are considered representative, are described. In general, most big cities in Indonesia have similar trends of traffic accidents, poor public transport service and slow growth of road infrastructure. Other social problems of uneven population growth due to employment and the explosive trend of motorbike use have made the imbalance between road development and trip demand worse off.

Human error is still positioned as the highest factor for traffic accidents, even for non-human factors, ignorance of trip makers to their vehicle maintenance as well as to their traffic safety knowledge are considered as human errors. Such ignorance can be elaborated from the fact of lesser growth of driving license numbers compared to the explosive growth in vehicle or motorbike units.

Eventually, three streams of possible alleviation of traffic accidents are proposed. Those streams are developing the public transport system in both quantity and quality, developing road infrastructure to achieve a reasonable ratio of roads and land area, and undertaking traffic and transport demand management to optimally utilize the limited capacity of road network. Over any stream special attention is placed on shifting motorbike users into other safer modes, and it should be the focus since traffic accidents of this transport mode have reached an alarming number and keep growing in Indonesia.

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