

ANALYSIS OF SPEED AND SOCIAL-PSYCHOLOGY FACTORS OF SPEEDING BEHAVIOUR ON DRIVERS IN DKI JAKARTA

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Abstract

Increased vehicle speed will affect the increase in reaction time and distance to stop and the increased possibility of errors that can be done by the driver. The most common cause of accidents faced by many countries is a high speed and exceeding permitted limits because they contribute to the problem of the number and number of fatalities of accident victims. Setting the maximum speed limit can reduce the risk of accidents. The higher the speed, the greater the stop distance needed, and the risk of accidents increases.

Keywords: speed, safety, maximum speed limit

Abstrak

Kecepatan kendaraan yang meningkat akan berpengaruh terhadap peningkatan waktu reaksi dan jarak untuk berhenti serta meningkatnya kemungkinan kesalahan yang dapat dilakukan oleh pengemudi. Faktor penyebab kecelakaan yang paling sering dihadapi oleh banyak negara adalah kecepatan tinggi dan melebihi batas yang diijinkan karena ikut berkontribusi pada permasalahan jumlah dan kefatalan korban kecelakaan. Mengatur batas kecepatan maksimum dapat menurunkan resiko kecelakaan. Semakin tinggi kecepatan, maka semakin besar jarak berhenti yang dibutuhkan dan resiko kecelakaan semakin meningkat.

Kata kunci: kecepatan, keselamatan, batas kecepatan maksimum

INTRODUCTION

Speed has been identified as one of the main risk factors for accidents in Indonesia. In the aspect of traffic and vehicle aspects of regulation, control, and traffic control need to be considered, one example of which is by recommending the design speed or plan speed on a road segment. Traffic stakeholders encourage speed limits on the road, starting from the design process to the operational speed of the road. In high-income countries, speed contributes to around 30% of road deaths, while in some low- and middle-income countries, speed is expected to be a major contributing factor to accidents.

The phenomenon of speed limit violations is a driver's behaviour that exceeds the speed limit that has been determined through applicable regulations adjusted to the road characteristics and traffic conditions on the road. Driving behaviour above regulated speed limits certainly has potential causes of accidents resulting in mortality and morbidity. Therefore, controlling the speed of the vehicle is one way to reduce the potential for accidents and the risk of severity of the victim.

In metropolitan areas such as Jakarta and surrounding areas, there was an increase in accident rates compared to the previous year. Based on data compiled by the Law Enforcement Sub directorate (Gakkum Subdit) of the Metro Jaya Regional Police Headquarters, there were 5,400 accidents from January to November 2018. The number of these accidents increased by five per cent compared to 2017. Among the various vehicle users, traffic accidents were found mostly in motorcycle rider. In 2018, there was an increase in the number of motorcycle traffic accidents totalling 4,255 accidents (Wahid, 2018 in <https://news.detik.com/berita/d-4352016/angka-kec-accident-di-Jakarta-increasing-bike-motorbike-dominating>).

Looking at the description of driving behaviour in urban areas, this study tries to understand better traffic factors that encourage drivers to drive above the speed limit set for urban roads, both drivers of two-wheeled vehicles and four-wheeled vehicles. Furthermore, this study explores social psychological factors that play a role in the behaviour of "speeding" displayed by two-wheeled and four-wheeled drivers. Therefore, this study focuses on urban arterial segments 6 / 2D by combining past data, speed, and questionnaires to obtain the intended factors. Speed analysis is needed to determine the variation between plan speed and operation.

LITERATURE REVIEW

Roads

Roads are land transportation infrastructures which cover all parts of the road, including complementary buildings and equipment intended for traffic, which are at ground level, above ground level, under the surface and or water, and above the surface of the water, except roads railroad, lorry and cable roads (Republic of Indonesia Government Regulation No. 34 of 2006).

Speeds

Driving at high speed is one of the serious public and social health problems in all countries. This is also a complex problem involving techniques, driving behaviour, education, and law enforcement.

Speed has many positive effects, especially allowing reduced travel time and increasing mobility. Progress in terms of roads over the past century has significantly reduced travel time and contributed to national economic development, facilitated access to jobs, goods and services, and facilities such as hospitals, entertainment, and shopping centres, and in turn, expanded opportunities for housing, employment, etc. This progress has contributed to improving the quality of life in general. Speed also has some strong negative consequences (ex. On road safety and the environment) and contributes to a significant negative impact on living levels in residential and urban areas.

Often, the driver exceeds the speed limit of less than 20 km/hour. But the proportion of drivers travelling at speeds of more than 20 km / h above the limit. Speed up regarding all types of motorized vehicles and all groups of road users. However, young drivers are the group most involved in speeding behaviour. The significant adverse impact of road safety on higher vehicle speeds has been confirmed by extensive research. Many researchers have modelled the relationship between serious accidents, fatal accidents, and speed. The

famous Nilsson 1 "Power Model" leads to the broad relationships illustrated in the chart and the following estimates about the impact of changes in average speed on fatal accidents, fatal and serious injury accidents and all injury accidents (Transport Research Center, 2006) :

1. 5% increase in average speed causes around a 10% increase in all injury accidents and a 20% increase in fatal accidents. The same research shows the positive impact of reducing vehicle speed:
2. 5% reduction in average speed caused around a 10% decrease in accident accidents and a 20% reduction in fatal accidents. A very important and relatively new development in overcoming the problem of speeding is recognizing and acting on the threshold of the physical resistance of the human body to the energy released during a collision (which is related to the impact speed).

This threshold needs to be an important input for the development of laws, regulations, and infrastructure. For example, according to the World Health Organization, pedestrians run the risk of 80% being killed at a collision speed of 50 km /hour, while this risk decreases to 10% at 30 km/hr. For passenger cars, wearing a seat belt in a well-designed car can protect a maximum of 70 km/h in a frontal impact and 50 km / h in a side impact.

Speed Plan

Government Regulation number 79 of 2013. Furthermore, article 23, paragraph four (4), Part Two, concerning Speed Limits, is stated, the speed limit as referred to as stipulated as follows. The speed limit as referred to in paragraph (2) and paragraph (3) is:

1. at least 60 (sixty) kilometres per hour in free-flow conditions and a maximum of 100 (one hundred) kilometres per hour for highways;
2. maximum of 80 (eighty) kilometres per hour for intercity roads;
3. maximum of 50 (fifty) kilometres per hour for urban areas; and
4. maximum of 30 (thirty) kilometres per hour for residential areas.

Speed of 85 percentiles

85 percentile speed is the speed of traffic where 85% of vehicle users drive their vehicles on the road without being affected by lower traffic speeds or bad weather (Abraham, 2001). So that the speed of 85 percentiles can be said as the speed used by 85 percentiles of the driver, which is expected to represent the speed that is often used by the driver on the road (Sendow, 2004).

What Factors Affect Speed

Drivers' speed choice is influenced by several factors that can be considered as:

1. driver-related factors (age, gender, alcohol level, number of people in the vehicle);
2. those relating to the road and the vehicle (road layout, surface quality, vehicle power, maximum speed);
3. traffic- and environment-related (traffic density and composition, prevailing speed, weather conditions). (World Health Organization, 2004)

How Speed Affects Traffic Collisions and Injuries

The higher the speed of the vehicle, the faster the driver will stop and avoid collisions. Cars that travel at speeds of 50 km / h usually require 13 meters to stop, while cars that travel at speeds of 40 km / h will stop in less than 8.5 meters.

An increase in the average speed of 1 km / h usually results in a 3% higher risk of accidents involving injuries, with a 4-5% increase in accidents resulting in death. - Speed also contributes to the severity of accidents. Impact when a collision occurs. For car passengers in an accident with a collision speed of 80 km / h, the probability of death is 20 times that which should be at the impact speed of 30 km/hour. (World Health Organization, 2004)

Psychological Social Factors Underlying Behavior

According to the Theory of Planned Behavior (TPB), when individuals have full control of their behaviour, individual behaviour can be predicted by their intention to display that behaviour. The emergence of this intention is based on three components, namely attitude (attitude), subjective norms (subjective norms), and perceptions of self-control of behaviour (Perceived behaviour control (Fishbein & Ajzen, 1975). influenced by individual beliefs about a behaviour Subjective norm describes individual perceptions of the extent to which the social environment will support individuals to display certain behaviours. Furthermore, perceived behaviour controls describe individual perceptions of their ability to control internal and external factors that play a role in behaviour (Ajzen, 1985).

If the TPB theory is applied to speeding behaviour, it can be said that the driver's intention to display speeding behaviour is based on his attitude towards speeding behavior (for example, enjoying speeding), individual perceptions of subjective norms in his environment (for example, all friends often speed up, except timid people), and individual perceptions of how much they can control speeding behaviour (for example, no police officer supervises and gives tickets). When these three factors consistently provide information to individuals, eventually the intention will be to speed up and subsequently result in the behaviour of individuals doing or not doing speeding behaviour on the road (for example, individuals do not speed up because there are police who conduct raids, or individuals remain speeding up when the situation is quiet) (Shinar, 2007).

METHODOLOGY

Survey of Vehicle Speed on the Highway Stages of Research

The study location was chosen on the national road section in Jakarta, namely Jalan Daan Mogot. This road is a connecting road between Tangerang and Jakarta; access to this road is quite crowded because it is the main access to Jakarta to Tangerang and vice versa.

Traffic data retrieval is carried out on Thursday, June 20, 2019. Survey traffic counting using video recorders is carried out with a total duration of 12 hours namely 06.00 - 12.00 (Morning Shift) and 15.00 - 21.00 (Evening Shift) in two directions namely Jakarta direction and Tangerang direction, taking this time is intended to get peak hour volume (VJP). Calculations are done manually using the hand counter separately through a video recorded on the survey day.

Calculated vehicles are classified into three types of vehicles;

1. Motorcycle;
2. Light Vehicle (LV);
3. Heavy Vehicle (HV).

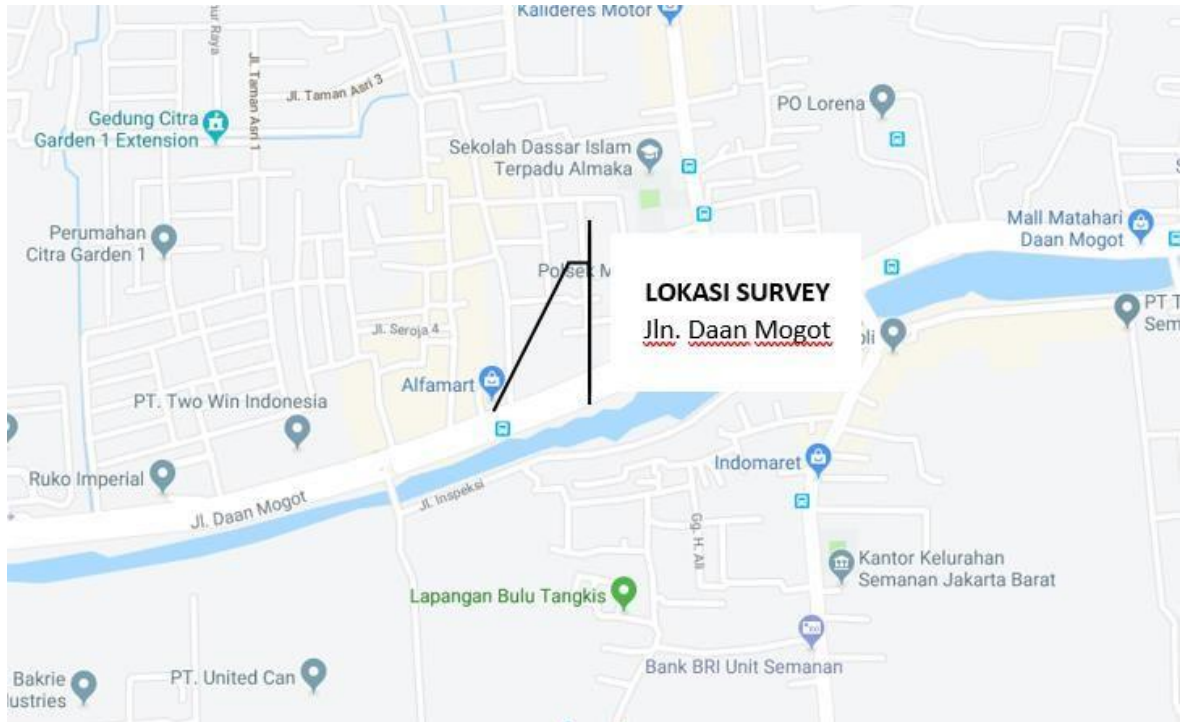


Figure 1. Location Survey

Spot Speed is also done to get the average speed value in the section. Speed data retrieval uses speed gun with each of the 30-speed data for the same three types of vehicles as traffic counting. Speed data retrieval is also carried out on two shifts, namely morning and evening.

Research data

Table 1. Vehicle speed data toward Jakarta

Time	Vehicle Speed (km/h)			Time	Vehicle Speed (km/h)		
	MC	LV	HV		MC	LV	HV
6:00 - 6:15	41	47	52	15:00 - 15:15	39	32	32
6:15 - 6:30	47	51	51	15:15 - 15:30	44	37	40
6:30 - 6:45	62	52	48	15:30 - 15:45	37	39	32
6:45 - 7:00	44	45	52	15:45 - 16:00	33	40	24
7:00 - 7:15	52	42	32	16:00 - 16:15	40	36	44
7:15 - 7:30	61	53	33	16:15 - 16:30	33	52	35
7:30 - 7:45	44	51	42	16:30 - 16:45	43	31	36
7:45 - 8:00	48	25	39	16:45 - 17:00	47	41	39
8:00 - 8:15	56	36	66	17:00 - 17:15	40	37	37
8:15 - 8:30	48	58	40	17:15 - 17:30	38	27	38
8:30 - 8:45	60	37	28	17:30 - 17:45	47	45	34
8:45 - 9:00	56	51	46	17:45 - 18:00	44	39	31

Time	Vehicle Speed (km/h)			Time	Vehicle Speed (km/h)		
	MC	LV	HV		MC	LV	HV
9:00 - 9:15	63	42	21	18:00 - 18:15	47	35	37
9:15 - 9:30	55	53	33	18:15 - 18:30	41	42	56
9:30 - 9:45	56	40	50	18:30 - 18:45	42	30	46
9:45 - 10:00	63	36	30	18:45 - 19:00	46	40	34
10:00 - 10:15	55	51	50	19:00 - 19:15	43	36	45
10:15 - 10:30	49	58	32	19:15 - 19:30	39	48	28
10:30 - 10:45	63	48	40	19:30 - 19:45	42	47	40
10:45 - 11:00	58	49	52	19:45 - 20:00	48	42	54
11:00 - 11:15	46	52	47	20:00 - 20:15	46	45	54
11:15 - 11:30	46	39	41	20:15 - 20:30	35	40	34
11:30 - 11:45	58	40	39	20:30 - 20:45	51	49	52
11:45 - 12:00	40	50	44	20:45 - 21:00	42	47	42
12:00 - 12:15	60	53	56	21:00 - 21:15	38	31	36
12:15 - 12:30	57	34	33	21:15 - 21:30	34	37	24
12:30 - 12:45	52	53	42	21:30 - 21:45	35	31	33
12:45 - 12:00	39	34	34	21:45 - 22:00	24	36	29
13:00 - 13:15	57	38	42	22:00 - 22:15	35	40	40
13:15 - 13:30	32	36	45	22:15 - 22:30	24	34	46

Table 2. Vehicle speed data toward Tangerang

Time	Vehicle Speed (km/h)			Time	Vehicle Speed (km/h)		
	MC	LV	HV		MC	LV	HV
6:00 - 6:15	43	42	43	15:00 - 15:15	44	33	42
6:15 - 6:30	35	37	26	15:15 - 15:30	53	33	33
6:30 - 6:45	51	40	28	15:30 - 15:45	37	33	53
6:45 - 7:00	37	26	23	15:45 - 16:00	42	35	37
7:00 - 7:15	38	34	31	16:00 - 16:15	40	41	44
7:15 - 7:30	38	43	29	16:15 - 16:30	37	71	50
7:30 - 7:45	30	43	33	16:30 - 16:45	67	4	54
7:45 - 8:00	32	50	35	16:45 - 17:00	65	59	47
8:00 - 8:15	36	41	49	17:00 - 17:15	51	50	30
8:15 - 8:30	47	38	35	17:15 - 17:30	49	60	37
8:30 - 8:45	33	35	42	17:30 - 17:45	42	53	36
8:45 - 9:00	50	43	29	17:45 - 18:00	36	33	35

Time	Vehicle Speed (km/h)			Time	Vehicle Speed (km/h)		
	MC	LV	HV		MC	LV	HV
9:00 - 9:15	35	45	37	18:00 - 18:15	41	43	43
9:15 - 9:30	22	41	47	18:15 - 18:30	36	39	39
9:30 - 9:45	38	24	35	18:30 - 18:45	49	43	35
9:45 - 10:00	17	18	40	18:45 - 19:00	56	50	48
10:00 - 10:15	22	51	28	19:00 - 19:15	45	59	51
10:15 - 10:30	12	45	34	19:15 - 19:30	49	43	63
10:30 - 10:45	16	45	31	19:30 - 19:45	40	68	39
10:45 - 11:00	18	43	19	19:45 - 20:00	47	55	39
11:00 - 11:15	18	42	33	20:00 - 20:15	37	49	42
11:15 - 11:30	18	42	30	20:15 - 20:30	70	46	52
11:30 - 11:45	13	43	31	20:30 - 20:45	52	51	48
11:45 - 12:00	10	37	32	20:45 - 21:00	24	39	36
12:00 - 12:15	20	46	32	21:00 - 21:15	45	47	42
12:15 - 12:30	23	48	22	21:15 - 21:30	64	46	41
12:30 - 12:45	32	42	33	21:30 - 21:45	65	47	39
12:45 - 12:00	29	48	48	21:45 - 22:00	58	39	43
12:00 - 12:15	25	35	35	22:00 - 22:15	55	55	43
12:15 - 12:30	32	46	46	22:15 - 22:30	42	60	60

RESULTS AND DISCUSSION

Plan Speed 50 km/hour

Based on Figure 1 on the Daan Mogot road towards Jakarta in the morning from each vehicle, there is nothing that reaches speeds of 50 km /hour, this can be due to the direction of Jakarta morning that the road conditions are quite dense, so it does not allow the vehicle to run at speeds above 50 km /hour. So that it can be said that vehicles passing in the direction of Jakarta at 6:00 - 12:00 are still at a safe speed.

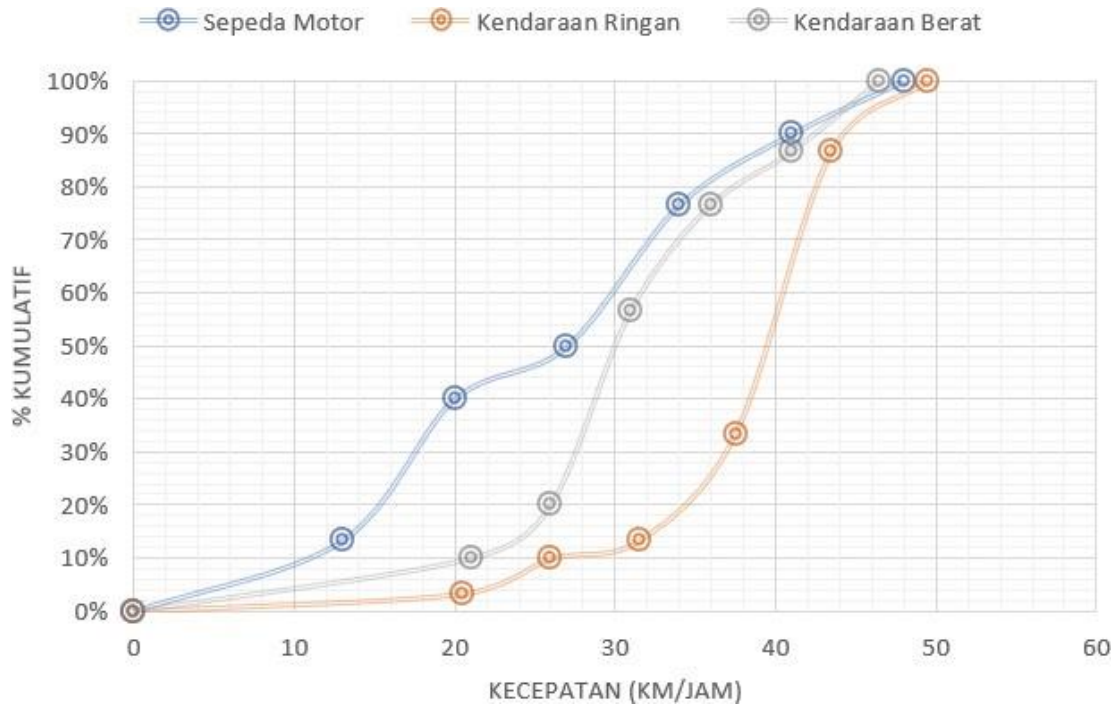


Figure 2. Cumulative percentage of plan speed 50 km /h Jakarta (morning)

Based on Figure 2 on the Daan Mogot road towards Jakarta in the afternoon at the planned speed of 50 km/h for motorcycles, it has a cumulative percentage of 74% for passenger vehicles at 79% and for heavy vehicles at 86%. So, the percentage of vehicles that run above the plan speed (50 km/h) is on motorbikes at 26%, on passenger vehicles at 21%, and on heavy vehicles at 14%.

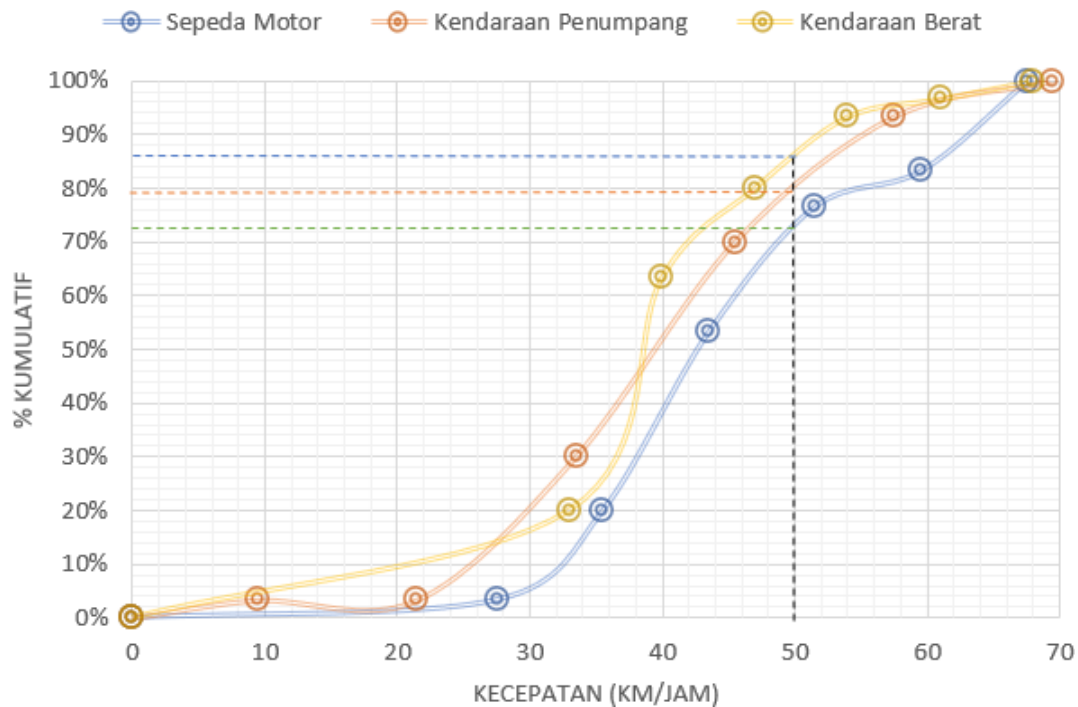


Figure 3. Cumulative percentage of plan speed 50 km/h Jakarta (afternoon)

Based on Figure 3 on Daan Mogot road towards Tangerang in the morning at the planned speed of 50 km / h for motorcycles, it has a cumulative percentage of 46% for passenger vehicles at 85% and for heavy vehicles at 90%. The percentage of vehicles that go above the planned speed (50 km/h) on the Daan Mogot road in Jakarta from 15:00 to 21:00 that is on motorbikes by 54%, on passenger vehicles by 15% and on heavy vehicles by 10%.

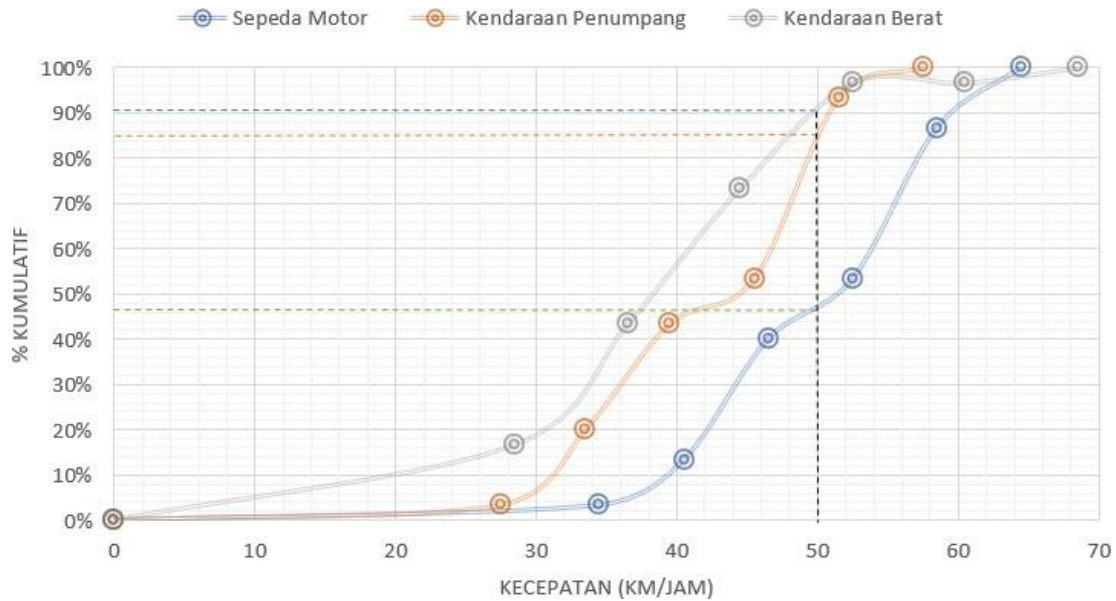


Figure 4. Cumulative percentage of plan speed 50 km/hour Tangerang (morning)

Based on Figure 4 on Daan Mogot road towards Tangerang in the afternoon at the planned speed of 50 km / h for motorbikes, it has a cumulative percentage of 99% for passenger vehicles 93% and for heavy vehicles 91%. The percentage of vehicles that runs above the plan speed is on motorbikes by 1%, on passenger vehicles 7%, and on heavy vehicles at 9%.

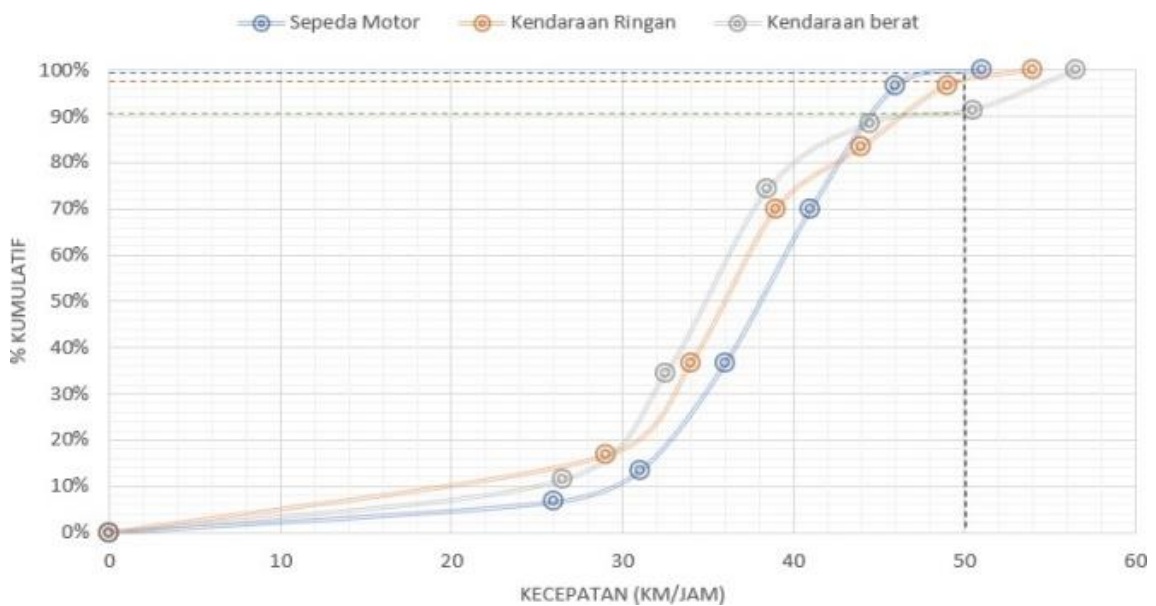


Figure 5. Cumulative percentage of plan speed 50 km/h Tangerang (afternoon)

Speed of 85 Percentiles

From picture 5 speed that speed is often used by the driver (85 percentile speed) on the Daan Mogot road in Jakarta (morning) that is for motorbikes at 38 km/h, for light vehicles at 40 km/h and vehicles are weighing 42, 65 km/h.

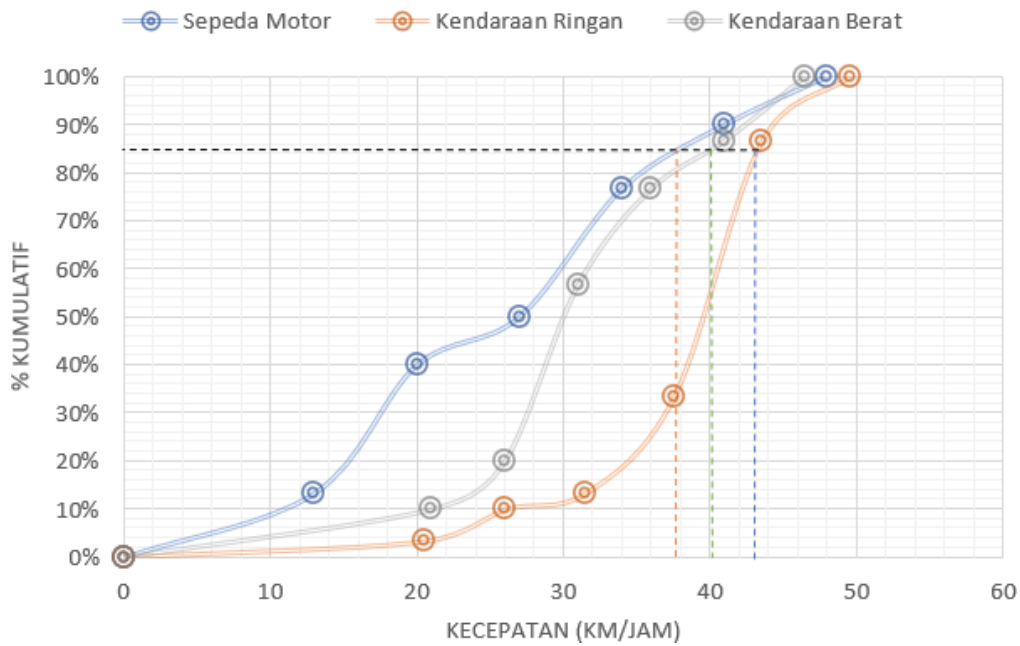


Figure 6. Speed 85 percentile toward Jakarta (morning)

From figure 6 speed, that speed is often used by the driver (85 percentile speed) on the road Daan Mogot in Jakarta (afternoon) that is for motorcycles 60.2 km/hour for light vehicles 52.65 km/h for and vehicles weight of 49 km/h.

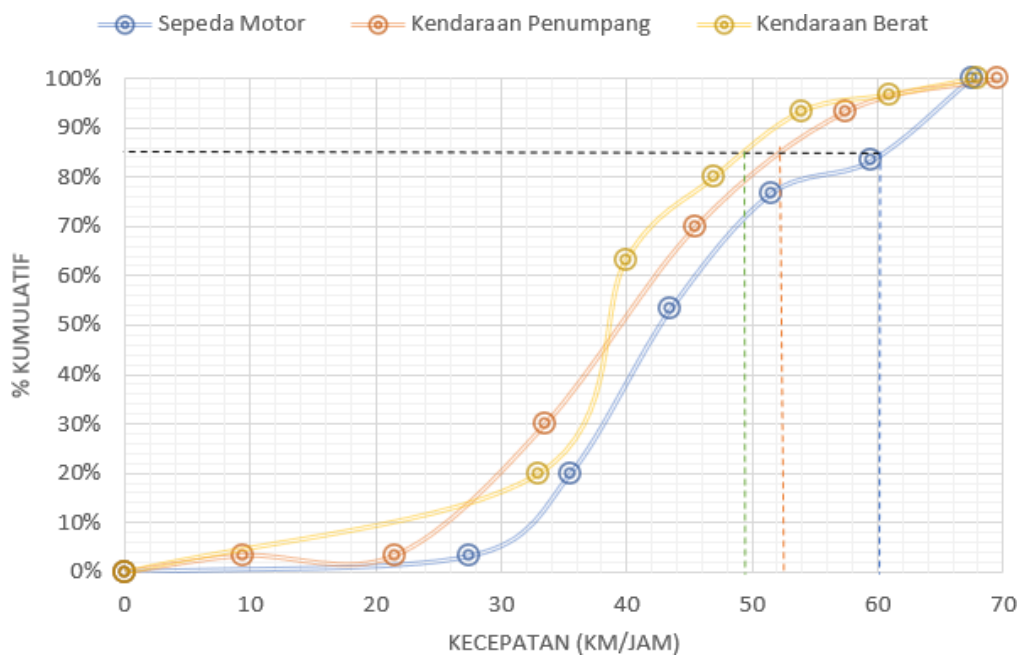


Figure 7. Speed 85 percentile toward Jakarta (afternoon)

From the 7-speed image that the speed that is often used by the driver (85 percentile speed) on the Daan Mogot road in the direction of Tangerang (afternoon) for motorbikes 46.3 km/h for, for light vehicles at 43.7 km/h and heavy vehicles at 42 km/h.

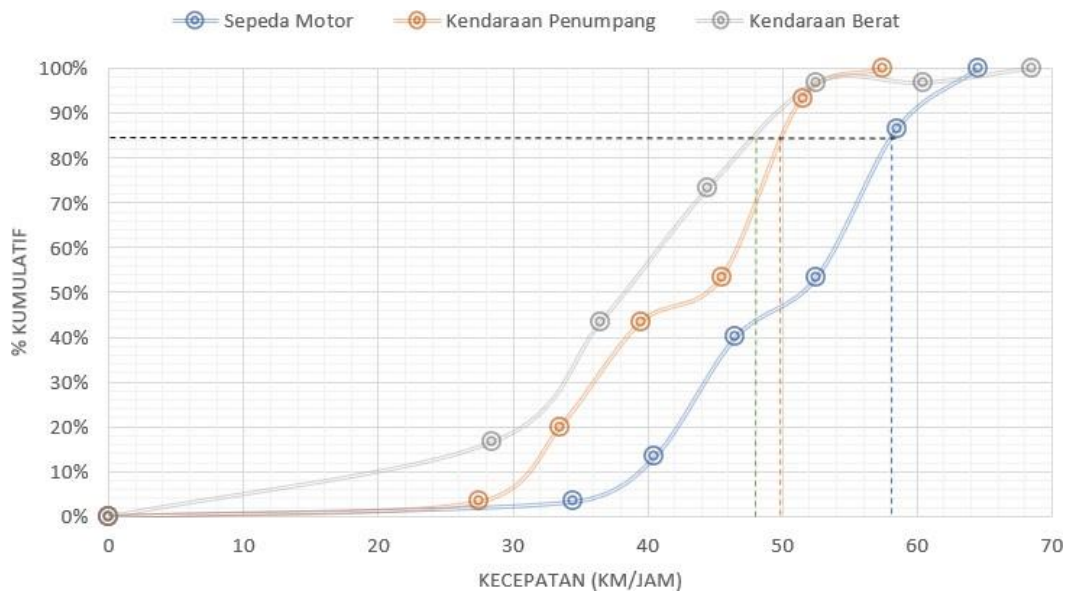


Figure 8. Speed 85 percentile toward Tangerang (morning)

From figure 8 speed that speed is often used by the driver (85 percentile speed) on the Daan Mogot road in the direction of Tangerang (afternoon) for motorbikes 58 km/h for, for light vehicles at 50.35 km/h and vehicles weighing 48 km/h.

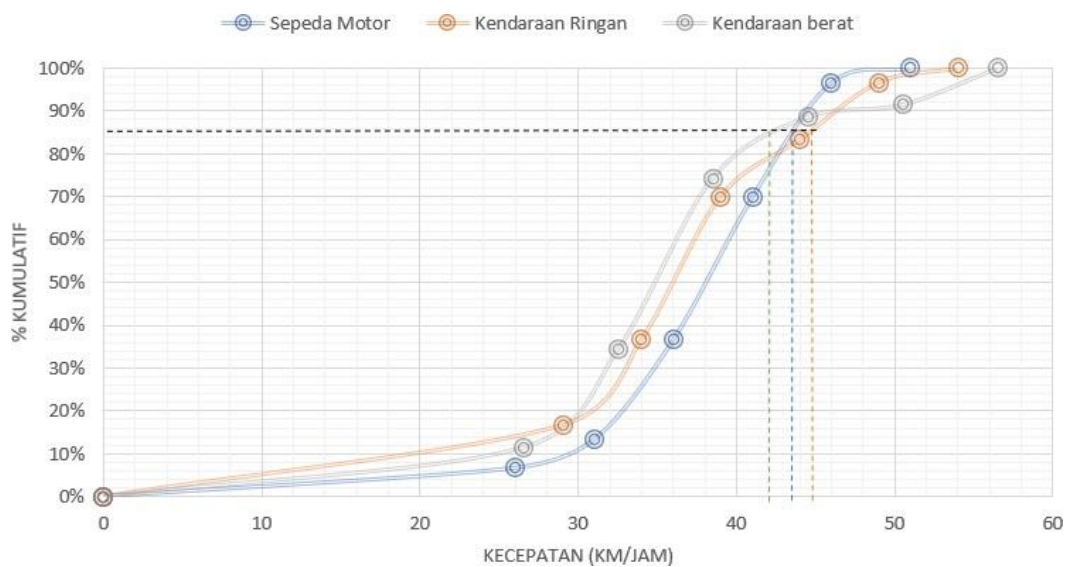


Figure 9 Speed 85 percentile toward Tangerang (afternoon)

Survey of Psychological Social Factors of Speeding Behavior on Drivers Demographic Description and Driving Behavior of Participants

Demographic data, as shown in Table 1, shows that the majority of participants who filled out the questionnaire were car drivers (69.6%). The percentage of male and female drivers

is quite balanced, with an age range between 17 to 68 years ($M = 36.27$, $SD = 13.26$). The majority of education participants are S1 (45.1%) and then high school (22.5%). Fifty per cent of participants have more than 2 SIMs, which is a combination of SIM B1, SIM A, and SIM C. The majority of participants are experienced drivers, which is more than ten years (62.7%). Participants were active car and motorcycle drivers, who, on average, drove for 3 hours per day ($M = 3.87$, $SD = 7.83$). Most participants had never received a ticket in the past year (79.4%) and had never had an accident in the past year (82.4%).

Table 3. Demographic overview and participant driving behaviour (N = 102)

No.	Demographic Item	n	%	M	SD	
1.	Gender	Man	59	57.8		
		Women	43	42.2		
2.	Age			36.27	13.26	
		17-25 years	27	26.5		
		26-40 years old	37	36.3		
		41-60 years	35	34.3		
		> 60 years old	3	2.9		
3.	Education	Junior high school	3	2.9		
		High school	23	22.5		
		D3	4	3.9		
		S1	46	45.1		
		S2	21	20.6		
		S3	5	4.9		
4.	Transportation type	Motorcycle	31	30.4		
		Car	71	69.6		
5.	SIM ownership	SIM A	44	37.3		
		SIM C	4	18.6		
		More than 2 SIM	54	52.94		
6.	Driving experience (years)	Less than 3 year	6	5.9		
		Between 3-5 year	14	13.7		
		Between 6-10 year	18	17.6		
		More than 10year	64	62.7		
7.	The frequency of getting a ticket in the past year	Never	81	79.4		
		1-2 times	18	17.6		
		> 2 times	3	2.9		
8.	The frequency of having an accident in the past year	Never	84	82.4		
		1-2 times	17	16.6		
		> 2 times	1	1.0		
9.	Duration of driving (hours/day)			3.87	7.83	

Participant Perception Regarding Speed Limits When Driving

There are three main reasons, according to participants, regarding the implementation of vehicle speed limits in Indonesia, namely to reduce accidents, control vehicles when facing sudden situations, and increase alertness when visibility does not meet the requirements (Table 4). The three main reasons are related to the driver's efforts to increase his ability and concentration while driving and avoiding accidents. This shows that according to participants, the speed of the vehicle is closely related to the possibility of an accident on the highway.

Table 4. Reasons for the Importance of Implementing Speed Limits in Indonesia

Description	n	%
Reducing accidents	57	55.9
Can control the vehicle if facing a sudden situation	52	51.0
Increase alertness when distance view does not meet the requirements	39	38.2

According to participants' perceptions, there are differences in the maximum speed limits according to the type of road (Table 5). The lowest vehicle speed limit is when on a 2 lane road with 2 opposite directions, which is 48 km/hr. On the other hand, the highest vehicle speed limit is when on the highway, which is 89 km/hour.

Table 5. Maximum speed limit

Description	M	SD
Two lines in two opposite directions	48.24	16.66
Two lines in the same direction	63.04	22.11
Expressway (toll road)	89.17	23.75

One driving behavior related to vehicle speed is speeding behavior (Table 6). When performing speeding behavior, the driver displays the speed of the vehicle that is different according to the type of road. On a two-lane road with 2 opposite directions, the speed of the vehicle when speeding is 59 km/hr. Different things are found on a two-lane road but in the same direction, where the speed of the participant when speeding is around 73 km/hr. The highest driving speed when speeding is on the toll road, which is 107 km/hour.

Table 6. Speed when speeding

Description	M	SD
Two lines in two opposite directions	59.76	21.92
Two lines in the same direction	73.05	23.52
Expressway (toll road)	107.84	32.02

Driver's Psychological Social Aspects Regarding Speeding Behavior

In terms of social psychological aspects, participants generally had a negative attitude towards speeding behavior (M = 2.04, SD = .67). A positive attitude towards behavior only appears when speeding is perceived to satisfy the driver's desire to arrive at his destination

faster ($M = 2.62$, $SD = .99$). This negative attitude towards speeding behaviour is related to participants' belief in speeding behaviour. In general, participants have confidence that speeding behaviour is a behaviour that is too dangerous and increases the risk of accidents ($M = 2.23$, $SD = .84$). Speeding behaviour is considered not too dangerous only when done in quiet road conditions ($M = 2.53$, $SD = .94$).

Participants also perceived a lack of support from the environment or people who are meaningful in their lives, such as family, friends, fellow drivers, and police to display speeding behaviour ($M = 2.00$, $SD = .59$). The perceived party gives the strongest influence to prevent them from carrying out speeding behavior is friends and police (Table 7).

The results of the study also showed that participants perceived themselves as having less control to determine speeding behaviour ($M = 2.12$, $SD = .56$). They only speed up if it can make them faster and on time to get to their destination (Table 9).

Table 7. Psychological social aspects regarding speeding behaviour

Description	<i>M</i>	<i>SD</i>
Attitude	2.04	.67
Belief	2.23	.84
Subjective norm	2.00	.59
PBC	2.12	.56

* Scale 1-4

Table 8. Attitude related to speeding behaviour

Description	<i>M</i>	<i>SD</i>
Speeding can satisfy the driver's desire to reach their destination faster	2.62	.99
Speeding makes the driver feel freer in channelling emotions	2.07	.88
Speeding makes the driver more confident in his ability to drive a vehicle	1.99	.86
Speeding makes the driver proud because he can overtake other vehicles	1.91	.82
Not speeding on the highway signifies a cowardly driver	1.47	.57
Speeding makes the driver more excited in driving		

* Scale 1-4

Table 9. Belief related to speeding behaviour

Description	<i>M</i>	<i>SD</i>
Increase the likelihood of the driver having an accident	2.14	.89
Endanger the driver	2.15	.93
Injuring other people on the highway	2.21	.96
Injuring passengers in the driver's vehicle	2.26	.96
Causing accidents in slippery road conditions	2.05	.95
Causing accidents in quiet road conditions	2.53	.94
Cause accidents in two-way road conditions	2.26	.92

* Scale 1-4

Table 10. Subjective norms related to speeding behaviour

Description	M	SD
Friends encourage to speed up	1.8	.70
Families let drivers drive in forced conditions	1.90	.81
The police will let the driver speed when the road is not crowded	1.87	.81
Fellow drivers want the driver to drive the vehicle at a higher speed	1.95	.76
The police care more about the completeness of vehicle documents than the driver who drove	2.48	1.04

* Scale 1-4

Table 11. Perceived Behavior Control (PBC) related to Speeding Behavior

Description	M	SD
Get to your destination faster	3.02	.83
Reach the destination on time	2.89	.77
Given the opportunity to test guts	1.84	.84
Reduce stress	1.88	.85
Fun driving	2.25	.89
Eliminate drowsiness	2.13	.89
Improve concentration on the road	2.24	.85
Demonstrate the ability to drive to other drivers	1.75	.74
Channel anger	1.99	.92
Get praise from people around	1.62	.65
Escaped from police capture	1.75	.87

* Scale 1-4

CONCLUSION AND SUGGESTION

Conclusion

1. From the results of the analysis on Daan Mogot road in both the direction of Jakarta and the direction of Tangerang vehicles that use a plan speed of 50 km / h are as much as more than 45%.
2. Vehicles that use vehicles above the planned speed are generally motorbikes with 26-54%.
3. From the calculation of the speed of 85 percentiles, the speed used by 85 per cent of the drivers on the Daan Mogot road ranges from speeds of 40 km / h - 58 km/hr.
4. Based note that on the road D and M got both from Jakarta and Tangerang driver potentially increasing the speed of the vehicle at 16:00 and above
5. Drivers have a negative attitude towards speeding behaviour. This is related to the belief that speeding behaviour is classified as dangerous behaviour and can increase the likelihood of accidents.

6. Drivers lack support from the environment to display speeding behaviour on the road, especially from fellow drivers and police. This makes the driver feel less control and has many obstacles to display speeding behaviour.

Suggestion

1. The driver should control speed control by paying attention to the plan/design speed on the road.
2. There needs to be socialization to the driver that speeding behaviour will bring more risks than profits. Speeding behaviour is still considered dangerous and risks causing accidents even though it is done in a quiet place. Also, socialization needs to emphasize that the benefits of being able to get faster through speeding are not proportional to the risk of accidents that can be displayed from speeding behaviour. Speeding behaviour can endanger not only the driver but also other drivers on the highway.

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BIBLIOGRAPHY

- Abraham. (2001). Analysis of Highway Speed Limits. Thesis Faculty of Applied Science and Engineering University Toronto, Canada.
- Presiden Republik Indonesia. (2013). Peraturan Pemerintah No 79 Tahun 2013 tentang Jaringan Lalu Lintas dan Angkutan Jalan.
- Sendow, T. K. (2004). Analisa Jarak Pandangan di Lengkung Horisontal dan Lengkung Vertikal. Tesis Program Magister Teknik Sipil, Institut Teknologi Bandung.
- Transport Research Center. (2006). Speed Management. France: OECD.
- World Health Organization. (2004). Fact Road Safety. Road Safety is Not Accident.
- BjØrnskau, T., Nævestad, T. O., & Akhtar, J. (2011). Traffic safety among motorcyclists in Norway: A study of subgroups and risk factors. *Accident Analysis and Prevention*. DOI: 10.1016/j.aap.2011.09.051.
- Chang, H. L., & Yeh, T. H. (2007). Motorcyclist accident involvement by age, gender, and risky behaviors in Taipei, Taiwan. *Transportation Research Part F*, 10, 109-122.
- Cheng, A. S. K. & Lee, H. C. (2012). Risk-taking behavior and response inhibition of commuter motorcyclists with different levels of compulsivity. *Transportation Research Part F*, 15, 535-543.
- Fishbein, M. and I. Ajzen (1975). *Belief; attitude, intention and behavior*. Addison-Wesley, New York.
- Shinar, D. (2007). *Traffic safety and human behavior*. Netherlands: Elsevier