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**INVESTIGATION OF ACCIDENT FREQUENCY AND
ROAD CONDITION IN MALAYSIA**

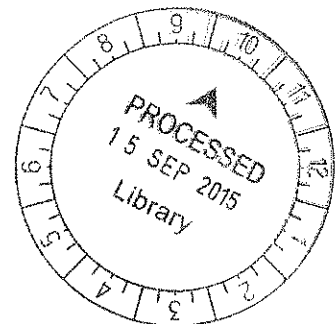
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Declaration

I, Chong Seng Fah hereby declare that the art of work that presented by this report entitled "Investigation of accident frequency and road condition in Malaysia" is totally a record of my original work done and my own investigation under the guidance of my academic supervisor, Mr. Sudesh Nair Baskara except for point of reference. The reference that was used in this report was plucked from the data and resources from journals and published data.


Name: CHONG SENY FAY

Abstract

This study reviews the relationship of accident frequency and road condition in 36 various selected sites in Peninsula Malaysia. The road accident statistics data were collected from the Jabatan Kerja Raya Malaysia (JKR). The road accident statistics data obtained is from year 2012 to year 2014. Microsoft Excel 2007 was used in this investigation to tabulate the table and plot the graph to show the relationship between road accident frequency and road condition in 36 various selected site in Peninsula Malaysia. This investigation shows that number of accident increase as pavement texture depth and pavement surface friction increases. This investigation also shows that surface friction increase as the pavement texture depth increases. Besides that, this investigation shows that number of accident increase as the speed limit increases.

Acknowledgement

I wish to sincerely acknowledge with gratitude the invaluable guidance, support and inspiration of my supervisor **Mr. Sudesh Nair Baskara**. I am also thankful to the Jabatan Kerja Raya Malaysia (JKR) for providing available data required for this study. I also wish to acknowledge the support, both intellectually and morally, of my friends within the faculty of engineering.

Table of Content

Declaration	i
Abstract	ii
Acknowledgement	iii
1 Chapter 1: Introduction	1
1.1 Background of Study	1
1.2 Problem Statement	2
1.3 Objective of Study	5
1.4 Scope of Study	5
1.5 Significant of Study	6
2 Chapter 2: Literature Review	8
2.1 Road Accident Frequency	8
2.2 Road accident due to driver behavior	12
2.3 Road accident due to speed	14
2.4 Road accident due to sex and age group	15
2.5 Road accident due to road condition	17
2.5.1 Relationship between surface pavement characteristics and crash rate in Victoria, Australia	17
2.5.2 Relationship between road condition and crash rate in the Western Region district of Sweden.....	20
2.5.3 Examine the relationship between surface pavement characteristics and road traffic data in Alabama.....	22
3 Chapter 3: Methodology	25
3.1.1 Selection of Site	26

3.1.2	Review of Literature	26
3.1.3	Collection of Data	26
3.1.4	Result	26
3.1.5	Analysis.....	27
3.1.6	Conclusion	27
4	Chapter 4: Result and Discussion	28
4.1	Number of accident in Year 2012, 2013 and 2014	28
4.2	Number of Killed and Injured in Year 2012, 2013 and 2014.....	29
4.3	Number of Killed and Injured vs. Gender in year 2012, 2013 and 2014	30
4.4	Number of Killed and Injured vs. Age in Year 2012, 2013 and 2014	32
4.4.1	Number of Killed vs. Age in Year 2012, 2013 and 2014	32
4.4.2	Number of Injured vs. Age in Year 2012, 2013 and 2014.....	33
4.5	Relationship between Pavement Texture Depth and Pavement Surface Friction	34
4.5.1	Relationship between Pavement Texture Depth and Pavement Surface Friction in Year 2012	34
4.5.2	Relationship between Pavement Texture Depth and Pavement Surface Friction in Year 2013	37
4.5.3	Relationship between Pavement Texture Depth and Pavement Surface Friction in Year 2014	41
4.5.4	Relationship between Pavement Texture Depth and Pavement Surface Friction in Year 2012, 2013 and 2014	44
4.5.5	Summary of the relationship between pavement texture depth with pavement surface friction.....	45
4.6	Relationship between speed limit with number of accident and number of killed/injured	46

4.6.1	Relationship between Speed Limit vs. Average Number of Accident per Sites	48
4.6.2	Relationship between Speed Limit vs. Average Number of Killed and Injured per Accident	49
4.7	Relationship between Pavement Surface Friction with Number of Accident..	50
4.7.1	Relationship between Pavement Surface Friction with Number of Accident in year 2012	50
4.7.2	Relationship between Pavement Surface Friction with Number of Accident in Year 2013	52
4.7.3	Relationship between Pavement Surface Friction with Number of Accident in Year 2014	54
4.7.4	The relationship between pavement surface friction with number of accident in year 2012, 2013 and 2014	56
4.7.5	Summary of the relationship between pavement surface friction and number of accident for all three years.....	57
4.8	The relationship between Pavement Texture Depth and Number of Accident.	58
4.8.1	The relationship between Pavement Texture Depth and Number of Accident in Year 2012	59
4.8.2	The relationship between mean Pavement Texture Depth and Number of Accident in Year 2013	61
4.8.3	The relationship between mean pavement texture depth and number of accident for year 2014	63
4.8.4	The relationship between mean pavement texture depth and number of accident in year 2012, 2013 and 2014	65
4.8.5	Summary of the relationship between pavement surface friction and number of accident for three years.....	66

5	Conclusion	68
6	References.....	72

List of Table

Table 1.1: General Road Accident Data in Malaysia (1995-2014) (Source: Miros).....	2
Table 2.1: Distribution of the injured according the years (Source: Basri et al., 2012).	8
Table 2.2: Distribution of the accidents according to the type of the road (Source: Basri et al., 2012).	9
Table 2.3: Distribution of the accidents according to the cause (Source: Basri et al., 2012).	9
Table 2.4: Distribution of the accidents according to the time of accidents (Source: Basri et al., 2012).	10
Table 2.5: Distribution of the accidents according to the type of vehicle (Source: Basri et al., 2012).	10
Table 2.6: Distribution of accidents according to the possessions of driving licenses (Source: Basri et al., 2012).	11
Table 2.7: Accident causes analysis induced by driver owner (Source: Ma et al. 2010)	13
Table 2.8: Average speed of car, number of fatalities, number of severely injured, number of slightly injured and total number of injured per injury accident with only cars involved in 2 lane road(Nilson. 1984b).	15
Table 2.9: Percentage of injured and killed in an accident by sex and age group.	16
Table 2.10: Intervals of IRI and wheel rut groups (Source: Sarbaz et al, 2009).	20
Table 4.1: Location, Surface Type and Traffic System of the Eleven Selected Site in Year 2012	34
Table 4.2: Mean Surface Friction and Mean Texture Depth of the 11 Selected Sites in Year 2012	35
Table 4.3: Location, Surface Type and Traffic System of the 16 selected site in Year 2013	38
Table 4.4: Mean Surface Friction and Mean Texture Depth of the 16 selected site in Year 2013	39
Table 4.5: Location, Surface Type and Traffic System of the 9 Selected Site in Year 2014	41
Table 4.6 Mean Texture Depth vs. Mean Surface Friction of the 9 selected site in year 2014	42
Table 4.7: Data of Speed Limit, Number of Sites, Number of Accident, Number of Killed, Number of Injured in all year 2012 to 2014	47
Table 4.8: Result of Average Number of Accident per Site and Average Number of Killed and Injured per Accident	48

Table 4.9: Table of Location, Mean Surface Friction and Number of Accident of the 11 Selected Sites in Year 2012.....	50
Table 4.10: Table of Location, Mean Surface Friction and Number of Accident of the 16 Selected Sites in Year 2013	52
Table 4.11: Table of Location, Mean Surface Friction and Number of Accident of the 9 Selected Sites in Year 2014.....	54
Table 4.12: Table of Location, Mean Texture Depth and Number of Accident of the 11 selected sites in Year 2012.....	59
Table 4.13: Table of Location, Mean Texture Depth and Number of Accident of the 16 selected in Year 2013.....	61
Table 4.14: Table of Location, Mean Texture Depth and Number of Accident of the 9 selected Sites in Year 2014.....	63

List of Figures

Figure 2.1: Relationship between surface pavement texture depth and crash rate in Victoria, Australia(Peter et al, 2008).	18
Figure 2.2: Relationship between crash rate and roughness (Peter et al, 2008).	19
Figure 2.3: Surface roughness vs. Crash rate in 4 group (Source: Sarbaz et al, 2009).....	21
Figure 2.4: Variation of CR with respect to wheel rut depth (Source: Sarbaz et al, 2009)	22
Figure 2.5: Right Side Wheel Path Rutting (RRUT) and Left Side Wheel Path Rutting with Crash Rate (Source: Dr. Sara et al, 2005)	23
Figure 2.6: Left Side of Surface Roughness (IRI 1) and Right Side of Surface Roughness (IRI 2) with crash rate (Source: Dr. Sara et al, 2005)	24
Figure 2.7: Flow diagram of Method.....	25
Figure 4.1: Year vs. Number of Accident.....	28
Figure 4.2: Year vs. Number of Killed and Injured.....	29
Figure 4.3: Gender vs. Number of Accident and Killed in Year 2012, 2013 and 2014	31
Figure 4.4: Age vs. Number of Killed in Year 2012, 2013 and 2014.....	32
Figure 4.5: Age vs. Number of Injured in Year 2012, 2013 and 2014	33
Figure 4.6: Texture Depth vs. Surface Friction in Year 2012	37
Figure 4.7: Texture Depth vs. Surface Friction in Year 2013	40
Figure 4.8: Texture Depth vs. Surface Friction in Year 2014	43
Figure 4.9: Texture Depth vs. Surface Friction in Year 2012, 2013 and 2014.....	44
Figure 4.10 Texture Depth vs. Surface Friction for All Three Years	45
Figure 4.11: Speed Limit vs. Average Number of Accident per Sites	48
Figure 4.12: Speed Limit vs. Average Number of Killed and Injured per Accident.....	49
Figure 4.13: Surface Friction vs. Number of Accident in year 2012.....	51
Figure 4.14: Surface Friction vs. Number of Accident in Year 2013	53
Figure 4.15: Surface Friction vs. Number of Accident in Year 2014	55
Figure 4.16: Surface Friction vs. Number of Accident in Year 2012, 2013 and 2014	56
Figure 4.17: Surface Friction vs. Number of Accident for Three Years	57
Figure 4.18: Texture Depth vs. Number of Accident in Year 2012	60

Figure 4.19: Texture Depth vs. Number of Accident in Year 2013	62
Figure 4.20: Texture Depth vs. Number of Accident in Year 2014	64
Figure 4.21: Texture Depth vs. Number of Accident in Year 2012, 2013 and 2014.....	65
Figure 4.22: Texture Depth vs. Number of Accident for Three Years	66
Figure 5.1: Gantt Chart for Stage 1 and Stage 2	71

1 Chapter 1: Introduction

1.1 Background of Study

Malaysia has been a successful developing country and is forging ahead to become a development nation. In this condition, the economy is growing. Economic rapidly increase has resulted the increase in transportation sector in Malaysia. However, the increase in the transport sector has been a problem in road safety by increasing the road accident.

According to the latest WHO data published in April 2011 Road Traffic Accidents Deaths in Malaysia reached 8,031 people or 7.85% of total deaths. The World Health Ranking has ranked Malaysia at number 20 in its list of countries with the deaths caused by road accident. Road accident has also been identified as the leading cause of death in Malaysia, after heart disease, stroke, pneumonia and influenza (World Health Ranking, 2010). The number of road accident in Malaysia has increased every year. Based on the statistic data from Malaysia Institute of Road Safety Research (Miros, 2014), the number of road accident for the year 2000 and 2010 are 250,429 people and 414.421 people respectively.

There are several factors that are believed to cause the road accident. Among these are environment factor, human factor and vehicle factor. But one of the major problems is road condition in Malaysia. Road structure in Malaysia is not smooth and flat. Potholes is also one of the problem that cause accident happened where the driver hard to control the vehicle as the road is not smooth. Usually the road is dangerous after rainy day where the road is wet and slippery for the vehicle to handle. This will cause the driver unable to see and predict any obstruction to be encountered during driving hence accident will happen.

1.2 Problem Statement

Malaysia becomes one of the automobile manufacturing countries since 1985 with the launching of the first national car. Production of the national cars increase from 80,000 to 240,000 units a year. The increasing of number of vehicles and driver are often associated with the total number of road accident. In 2009 there were 397,330 road accident recorded compared to year 2005 where there were 328,264. This show that the road accident increased of 21 per cent through this year.

Table 1.1: General Road Accident Data in Malaysia (1995-2014) (Source: Miros)
General Road Accident Data in Malaysia (1995 – 2012)

Year	Population	Vehicles Registered	Vehicle Involved	Road Length	Road Accidents	Road Casualties	Road Deaths	Vehicle Ownership (Person per vehicle)
1995	20,096,700	6,802,375	275,430	62,221	162,491	52,152	5,712	3.0
1996	21,169,000	7,686,684	325,915	64,511	189,109	53,475	6,304	2.8
1997	21,665,600	8,550,469	373,526	66,108	215,632	56,574	6,302	2.5
1998	22,179,500	9,141,357	366,932	66,741	211,037	55,704	5,740	2.4
1999	22,711,900	9,929,951	390,674	67,069	223,166	52,937	5,794	2.3
2000	23,263,600	10,598,804	441,386	68,770	250,429	50,200	6,035	2.2
2001	23,795,300	11,302,545	483,351	74,217	265,175	50,473	5,849	2.1
2002	24,526,500	12,068,144	507,995	74,641	279,711	49,552	5,891	2.0
2003	25,048,300	12,819,248	555,634	79,667	298,653	52,741	6,286	2.0
2004	25,580,000	13,828,889	596,533	71,814	326,815	54,091	6,228	1.8
2005	26,130,000	15,026,660	581,136	71,814	328,264	47,012	6,200	1.7
2006	26,640,000	15,790,732	635,024	72,781	341,252	35,425	6,287	1.7
2007	27,170,000	16,813,943	668,173	73,032	363,319	33,999	6,282	1.6
2008	27,730,000	17,971,901	671,078	73,419	373,071	32,274	6,527	1.5
2009	28,310,000	19,016,782	705,623	100,002	397,330	31,417	6,745	1.5
2010	28,910,000	20,188,565	760,433	111,378	414,421	28,269	6,872	1.4
2011	29,000,000	21,401,269	817,151	127,517	449,040	25,570	6,877	1.4
2012	29,300,000	22,702,221	777,817	127,517	462,423	24,439	6,917	1.3

Besides, Malaysia is the one of the country who has the best highway networks in the region and the one of the 20 countries in the world with the capability to carry out end to end vehicle design and construction. But according to the United Nations World Health Organization's Global

Status Report on Road Safety, Malaysia is also one the Asean Countries who has the highest road traffic death per 100,000 population among Singapore, Brunei, Vietnam, Thailand and so on. Singapore has the lowest but this is mainly attributed to its very high level of public transport usage where people in Malaysia prefer to use their own car as transport instead of using public transport which is bus, Light Rail Transit (LRT), Mass Rapid Transit (MRT) and Monorail.

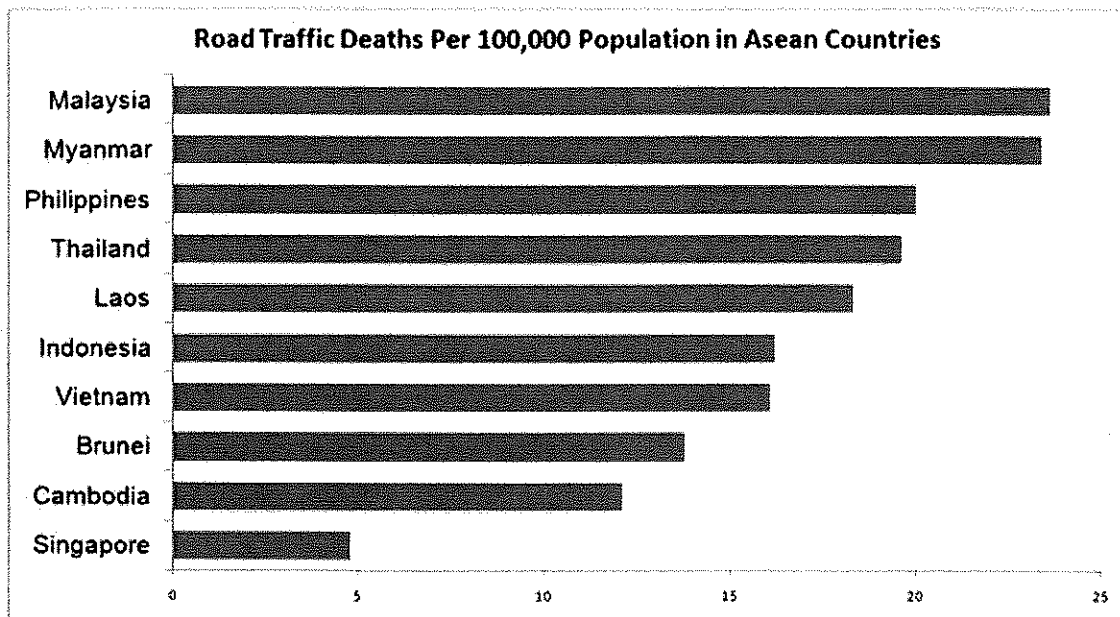


Figure 1.1: Road Traffic Death Per 100,000 Population in Asean Countries

According to the Malaysian Institute of Road Safety Research (Miros, 2010) research "Predicting Malaysian Road Fatalities for the year 2020", it is predicted that road fatalities in Malaysia for 2015 is 8,760 and 10,716 for the year 2020. The prediction for 2020 by Miros is surprising increase of 58 per cent in comparison to road statistics in 2010. The prediction can be possible if the road user does not change their behavior and the road condition in Malaysia does not improve.