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Research Report

Road Safety Updates 2012



Rohayu Sarani
Hizal Hanis Hashim
Azzuhana Roslan
Sharifah Allyana Syed Mohamed Rahim
Jamilah Mohd Marjan
Wong Shaw Voon

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MALAYSIAN INSTITUTE OF ROAD SAFETY RESEARCH

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Rohayu Sarani

Hizal Hanis Hashim

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Abstract

This report is written with intention to update researchers, agencies and Malaysian road users on the current road safety situation in the country. The first chapter explains the fatality trend and the changes that we have since last three decades. Latest data is used whenever possible, with proper acknowledgement to the data provider.

Chapter 2.0 highlights the big picture of road safety in Malaysia with the exposure and the indices revealed. Chapter 3.0 illustrates the year 2012 performance with regards to the crashes by age of road users, common collision types, motorcycle fatalities as compared to other road users and the statistics by vehicle type. Several initiatives and interventions are discussed in chapter 4.0.

The aim of this report is to provide better information for the researchers and related institutional bodies for better planning of their research and efforts in reducing road crashes and fatalities on Malaysian road.

“Together, we can make a difference”

1. Introduction

In the year 2011, the World Health Organization had launched Decade of Action 2011 – 2020, with the intention to create awareness on the economic burden resulting from road crashes and to reduce road casualties by half by the year 2020. About 1.24 million people die each year on the world's roads and between 20 and 50 million people sustain non-fatal injuries. Young adults aged between 15 and 44 years' account for 59% of global road traffic deaths (WHO, 2013). 92% of traffic death comes from low and middle income countries, of which cost as high as 3% of their Gross Domestic Product (GDP) as a whole (WHO, 2013). Nevertheless, the immediate loss to the family victims was unbearable.

Malaysia, as a country moving from middle to high income nation, faces the same challenges, if not even more. Motorisation, well connected states and towns, growing population of elderly, inefficient public transport at rural area, changes in values and attitudes among the youngsters are among the factors that put Malaysia in a more challenging situation. More crashes are recorded with each passing year, and this simply means that more resources are wasted unnecessarily. A study on accident costing in Malaysia estimated that the Value of Statistical Life (VOSL) at the time of the study for each fatality is between USD 0.31 million to USD 0.53 million (conversion rate is RM3.22 =USD1) (Mohd Faudzi et al., 2011).

Table 1 summarises the last four (4) decades of road fatality statistics in Malaysia. Based on the data given, throughout the four (4) decades, the number of fatalities is worrying with fatalities increasing. However, if one is looking at the absolute value, the decade of 2001 to 2010 recorded the least increment, with only an increase of 1,023 fatalities for the ten-year period. The period of 1991 – 2000 has the biggest increase with 1,704 fatalities for the same period.

Table 1 Decade changes of fatalities in Malaysia

Period		Fatalities		Difference	% change	Duration
A	B	A	B			
1972	1980	1,712	2,568	856	50.00	9 years
1981	1990	2,769	4,048	1,279	46.19	10 years
1991	2000	4,331	6,035	1,704	39.34	10 years
2001	2010	5,849	6,872	1,023	17.49	10 years

*period A represent beginning year and period B as the ending year

It has been an achievement of interventions and initiatives conducted in the 90’s and the recent decades. It is important to note that for the last 20 years, the number of our population continue to grow at 2% every year. The number of registered vehicles has increased tremendously since the year 1990 and year 2000 onwards. With the huge growth and fewer fatalities for the last decades, it shows that our road safety initiatives have a positive impact, but more need to be done (Figure 1).

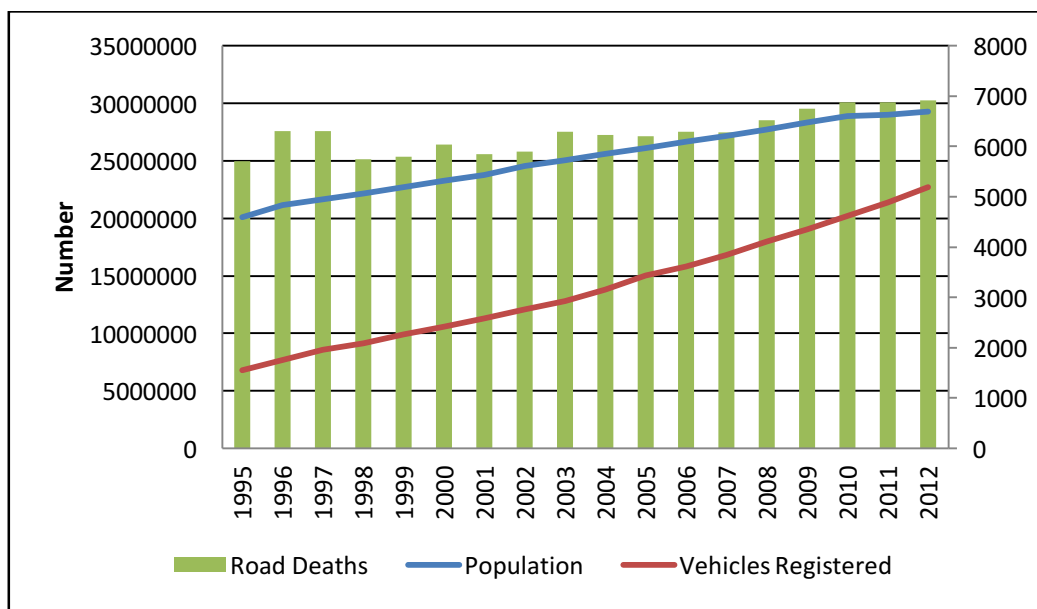


Figure 1 Malaysia road fatalities and exposure

2. General Status of Road Safety for 2012

Overall, road safety for the year 2012 has not improved in terms of reduction of the absolute figure. As compared to the previous year's statistics, year 2011, crashes-by-crashes type showed a slight increment for fatal and damaged-only crashes. For severe and slight crashes, both have decrement by 3.7% and 0.4%. As the population and vehicles on the road increases, together with opening of new roads, the overall number of crashes increased by nearly 3%.

Even though the number of crashes increased, with the increase of exposure, the number of casualties is decreasing, except for fatalities. This simply means that less people get involved in crashes. More fatality occurs in the 3rd and 4th quarter of the year; coinciding with the Hari Raya celebration and long school holidays.

2.1 Fatal, Casualty and Damage

Year 2012 has recorded 6,917 road fatalities which is 0.58% higher compared with the previous year, which recorded 6,877. The number of property damage only cases has increased to all time high amounting to 441,950 cases (an increase of 4.4% as compared to previous year). The number of fatal crashes has also increased by 0.5% amounting to 6,381 cases. On the other hand, road crashes for severe injuries and slight injuries shows a reduction by 3.7% and 0.4% respectively as compared to year 2011. Table 2 below shows the number of road crashes by severity for year 2012 and 2011.

Table 2 Number of road crashes by crash severity and year

Crash severity	2012	2011	Difference (%)
Fatal	6,381	6,347	0.54%
Severe	4,694	4,875	-3.71%
Slight	9,398	9,438	-0.42%
Damage only	441,950	423,378	4.39%
Total	462,423	449,040	2.98%

The increase in the number of fatal road crashes has resulted in higher number of fatalities for 2012. Unfortunately, the country saw an increase of 40 fatalities as compared to 2011, totalling 6,917 deaths due to road crashes, making it the highest in the country history. The good news is that the number of severe and slight injury has shown a big reduction by 7.3% and 5.8% respectively. Overall, the number of casualties has shown a decrease by 4.4%. Table 3 below shows the number of casualties by accident severity and year.

Table 3 Number of road casualty by year

Casualty	2012	2011	Difference (%)
Fatality	6,917	6,877	0.58%
Severe injury	5,868	6,328	-7.27%
Slight injury	11,654	12,365	-5.75%
Total	24,439	25,570	-4.42%

Analysing fatality by quarter of the year, Figure 2 revealed that the number of fatalities for Quarter 3 has been consistently higher than other quarters. For the year 2009 – 2012, Hari Raya falls in the Q3. During this Hari Raya period, most people head back to their hometown and visit friends, hence increasing the risk of getting involved in an accident. For all quarters, fatalities surpassed 1,500 per quarter, which translates to at least 500 fatalities per month. The real number is quite high and hence, further investigation should be conducted to see if there is any interventions on specific groups can be carried out.

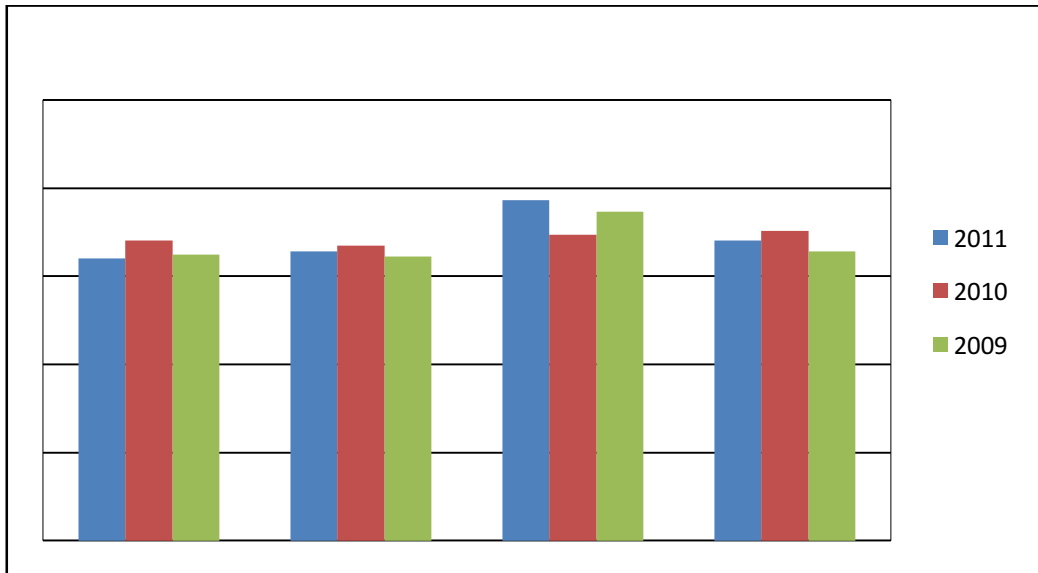


Figure 2 Fatalities by quarter of the year

2.2 Motorcyclist Fatality vs Other Road Users

Figure 3 shows that motorcyclists continues to be the highest proportion of fatalities on our road. Since the mid 90's, motorcyclist fatalities has surpassed other road users. The gap is getting wider and in 2011, the proportion of motorcyclist fatalities is 61%. Following the trend of motorcyclist fatalities in the last ten years, the highest increment was in 2007 – 2008 (3,646 – 3,898), which is almost 7% increment, and the highest reduction was in year 2000 – 2001 (3,591 – 3,693) by 4%. Other road users experienced a reduction of 128 fatalities in 2011, as compared to the year 2010.

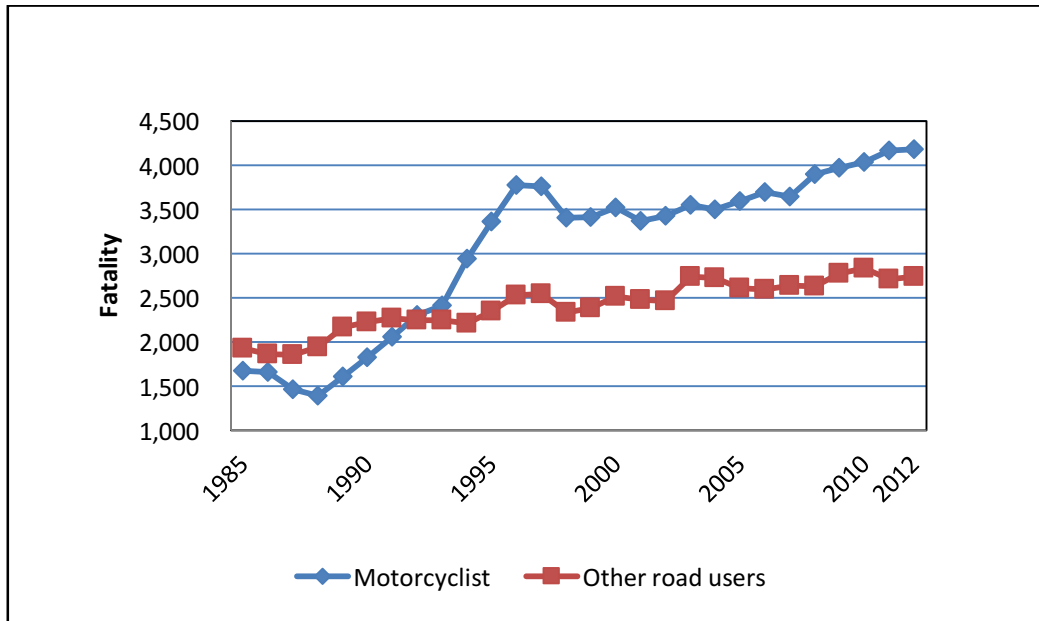


Figure 3 Motorcyclist outnumbered other road users in road fatality

2.3 Exposure and Indices

Road fatalities are caused by many factors. There are internal factors, such as the driver himself whom may exercise improper driving behaviour, the vehicle, the environment especially the road condition, weather, rush hours and other micro/internal factors. There are also external factors that influence the number of fatalities such as number of registered vehicles on the road, population, Gross Domestic Product (GDP), road length, number of hospitals and other related factors.

Table 4 below shows statistics for the last four years, together with monthly and daily fatality. The number of fatalities show an incremental trend from year 2009 to 2012. Year 2010 shows an increase by 1.88%, followed by 0.07% increase in 2011 and 0.58% increase in 2012. The indices of fatalities per 10,000 vehicles and 100,000 populations show a decreasing trend, possibly due to the higher increase in the number of vehicles and populations throughout the years.

Table 4 Performance comparison between the current and previous years

	2012	2011	2010	2009
Fatalities¹	6,917 (0.58)	6,877 (0.07)	6,872 (1.88)	6,745
Per 10,000 vehicles	3.04	3.21	3.40	3.55
Per 100,000 population	23.61	23.71	23.77	28.83
Monthly mean	576.4	573.1	572.7	562.1
Daily mean	18.95	18.84	18.83	18.48
Cumulative registered vehicles²	22,702,221	21,311,630	20,006,953	18,933,237
Road tax renewal³	NA	13,969,850	14,167,615	13,498,452
Vehicles involved in crashes⁴	777,817	817,151	760,433	705,433
Population (in million)⁵	29.3	29.0	28.6	28.1
Cumulative drivers⁶	13,303,843	12,763,452	12,236,254	11,697,306
Road length (km)⁷	NA	127,517	111,378	100,002

*figures in parentheses represent percentage change from previous year

^{1,4} Source: Royal Malaysian Police Annual Accident Statistics 2012

^{2,3,6} Source: Road Transport Department

⁵ Source: Department of Statistics

⁷ Source: Laporan Statistik Jalan Malaysia 2011, Public Works Department

3. Road Safety Scenario

A detailed analysis on casualty by mode of transport, user type, state and vehicles currently involved in crashes gives a better understanding on the current scenario. In the year 2012, vulnerable road users (VRU), consisting of motorcyclists, bicyclists and pedestrians, comprise 70% of road fatalities. All passenger vehicles recorded a reduction in passenger fatalities, except for cars, which only exhibit reduction in severe and slight injuries. Cars and motorcycles make up to 80% of total vehicles involved in crashes.

3.1 Road Casualty by Mode of Transport

Similar to the previous years, the Vulnerable Road Users (VRU) often has the highest number of casualties in road crashes. During year 2012, the VRU group fatality make-up 70% of the total death for the year. The highest death in the VRU group was motorcycles, with 4,178 deaths (60% from total deaths).

Based on overall performance, motorcyclists have the highest number of casualties, totalling 15,485 casualties. This is followed by car drivers and passengers with 4,677 casualties and pedestrians with 1,629 casualties. Table 5 shows the comparison between the mode of transport for each user type with type of casualties for year 2012 and 2011.

Table 5 Number of casualty by road user type and severity for year 2012 and 2011

Mode of transport	User type	Year 2012				Year 2011			
		Fatal	Severe	Slight	Total	Fatal	Severe	Slight	Total
Motorcycle	Rider	3,751	3,105	6,659	13,515	3,713	3,407	7,017	14,137
	Pillion	427	624	919	1,970	456	653	994	2,103
Bicycle	Rider	142	108	192	442	160	113	234	507
	Pillion	14	17	43	74	12	27	52	91
Car	Driver	850	635	1274	2,759	828	714	1258	2,800
	Passenger	585	522	811	1,918	561	554	953	2,068
Van	Driver	41	32	54	127	42	44	66	152
	Passenger	45	51	114	210	51	50	111	212
Bus	Driver	13	12	15	40	8	12	14	34
	Passenger	19	24	131	174	21	44	126	191
Lorry	Driver	134	84	172	390	176	74	190	440
	Passenger	60	56	64	180	71	51	92	214
4WD	Driver	82	53	107	242	70	57	103	230
	Passenger	77	79	112	268	81	63	121	265
Others	Driver	103	52	197	352	62	33	79	174
	Passenger	44	46	59	149	35	13	45	93
Pedestrian		530	368	731	1,629	530	419	910	1,859
Total		6,917	5,868	11,654	24,439	6,877	6,328	12,365	25,570

Table 6 Percentage change from year 2011 to 2012 by road user type and severity

Mode of transport	User type	Difference (%)		
		Fatal	Severe	Slight
Motorcycle	Rider	1.02%	-8.86%	-5.10%
	Pillion	-6.36%	-4.44%	-7.55%
Bicycle	Rider	-11.25%	-4.42%	-17.95%
	Pillion	16.67%	-37.04%	-17.31%
Car	Driver	2.66%	-11.06%	1.27%
	Passenger	4.28%	-5.78%	-14.90%
Van	Driver	-2.38%	-27.27%	-18.18%
	Passenger	-11.76%	2.00%	2.70%
Bus	Driver	62.50%	0.00%	7.14%
	Passenger	-9.52%	-45.45%	3.97%

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Lorry	Driver	-23.86%	13.51%	-9.47%
	Passenger	-15.49%	9.80%	-30.43%
4WD	Driver	17.14%	-7.02%	3.88%
	Passenger	-4.94%	25.40%	-7.44%
Others	Driver	66.13%	57.58%	149.37%
	Passenger	25.71%	253.85%	31.11%
Pedestrian		0.00%	-12.17%	-19.67%
Total		0.58%	-7.27%	-5.75%

Table 6 above highlights the percentage change in casualties by road user and crash severity. Overall, fatalities increased by 0.58%, highly contributed by bus and 4WD driver, bicycle pillion, car driver and motorcycle rider. For both severe and slight injury, the figure recorded a reduction of 7% and 5% respectively. Pedestrian killed on the road remain the same as last year, but lesser pedestrian sustained severe and slight injuries.

For bus, there is less fatalities for bus passengers by 9% as compared to the year 2011. However, the number of bus drivers killed increased by 62% (from 34 last year to 40 in the year 2012). Car passengers also recorded 4% increment in terms of fatality, but recorded a reduction in severe and slight injuries.

Table 7 Total number of casualty by road user type for year 2011 and 2012

Vehicle type	User type	2012	2011	Percentage different (%)
Motorcycle	Rider	13,515	14,137	-4
	Pillion	1,970	2,103	-6
Bicycle	Rider	442	507	-13
	Pillion	74	91	-19
Car	Driver	2,759	2,800	-1
	Passenger	1,918	2,068	-7
Van	Driver	127	152	-16
	Passenger	210	212	-1
Bus	Driver	40	34	18

	Passenger	174	191	-9
Lorry	Driver	390	440	-11
	Passenger	180	214	-16
4WD	Driver	242	230	5
	Passenger	268	265	1
Others	Driver	352	174	102
	Passenger	149	93	60
Pedestrian		1629	1859	-12
Total		24,439	25,570	-4

Table 7 above showed the changes in the total number of casualties by road users for the year 2012 as compared to the previous year. Most road users recorded negative change, which indicates that the number of casualties is reducing. The biggest percentage reduction in casualties is bicycle pillion rider, followed by van drivers and lorry passengers. Casualties of bus drivers increased to 40 from 34 last year. Motorcyclist recorded 4% drop in the number of casualties for rider, and further 6% for pillion. Pedestrians recorded a 12% decrement from the year 2011. Overall, the number of road casualty is decreasing by 4% for the same period as compared to last year.

3.2 Vehicles Frequently Involved in Road Crashes

Looking at the perspective of mode of transport, a total of 777,817 vehicles were involved in road crashes during the year. The types of vehicles mostly involved in road crashes were passenger cars, with 528,970 cars involved in road crashes. This represents 68% of overall vehicles involved in road crashes. The second highest vehicles involved in road crashes were motorcycles with 104,523 records. The third vehicle type frequently involved were lorries with 42,158 records. The trend of vehicle type involvement has been fairly consistent over the 10-year period as cars are always become the most involved, followed by motorcycles and lorries. Table 8 below shows the number of vehicles involved in road crashes by type.

Table 8 Number of vehicles involved in road crashes by type in the year 2012

Vehicle type	No. of vehicles involved	Percentage (%)
Motorcycle	104,523	13.44
Car	528,970	68.01
Van	15,139	1.95
Bus - Stage	4,101	0.53
Bus - Mini	294	0.04
Bus - School	837	0.11
Bus - Factory	896	0.12
Bus - Express	2,380	0.31
Lorry - Small	17,977	2.31
Lorry - Rigid	19,353	2.49
Lorry - Trailer	4,828	0.62
4WD	32,916	4.23
Taxi	8,888	1.14
Bicycle	1,310	0.17
Others	35,405	4.55
Total	777,817	100

3.3 Road Crashes and Road Casualty by State

Examining road safety at the state level, most of the road crashes occurred in Selangor, Johor and Kuala Lumpur. This may be influenced by the geographical size of the state itself and the rate of motorisation. Although Kuala Lumpur may be small in terms of land size compared to other states, the number of road crashes occurred was considerably high. Most of road crashes occurred in Kuala Lumpur were damage only crashes (99% from the overall crashes).

In terms of fatal road crashes, Selangor recorded the highest number of fatal crashes and fatalities, amounting to 1,053 and 1,102 respectively. This represents 16.5% of fatal road crashes in the country. The second state with high fatal road crashes was Johor, with 985 fatal crashes, and followed by Perak with 693 fatal crashes. The

number of fatality follows the same trend with Selangor having 1,102 deaths, followed by Johor with 1,073 deaths and Perak with 753 deaths. The trend of road crashes and road casualties between states has also been similar to the previous year (2011) data.

Table 9 and 10 below shows the number of road crashes and road casualty by state for year 2012.

Table 9 Number of road crashes by state in the year 2012

State	Number of road crashes				
	Fatal	Severe	Slight	Damage only	Total
Perlis	69	286	233	1,293	1,881
Kedah	529	475	1,036	17,895	19,935
Penang	373	129	176	37,173	37,851
Perak	693	564	1,072	32,385	34,714
Selangor	1,053	408	693	126,952	129,106
Kuala Lumpur	241	70	357	61,204	61,872
Negeri Sembilan	328	479	871	20,468	22,146
Melaka	222	169	406	14,398	15,195
Johor	985	378	1,263	59,690	62,316
Pahang	484	238	373	19,459	20,554
Kelantan	347	500	1,560	7,561	9,968
Terengganu	270	264	413	9,914	10,861
Sabah	398	516	470	16,062	17,446
Sarawak	389	218	475	17,496	18,578
Total	6,381	4,694	9,398	441,950	462,423

Table 10 Number of road casualty by state for the year 2012

State	Number of road casualty			Total
	Fatality	Severe injury	Slight injury	
Perlis	71	323	277	671
Kedah	548	486	1,074	2108
Penang	400	157	244	801
Perak	753	735	1,583	3071
Selangor	1,102	458	744	2304
Kuala Lumpur	249	73	365	687
Negri Sembilan	352	595	1,020	1967
Malacca	243	203	474	920
Johor	1,073	454	1,388	2915
Pahang	540	369	592	1501
Kelantan	392	647	1,839	2878
Terengganu	301	356	550	1207
Sabah	450	674	802	1926
Sarawak	443	338	702	1483
Total	6,917	5,868	11,654	2108

Table 11 below shows the number of fatal crashes by state together with its road length. An index of fatal crashes per 100 km length is calculated for comparison purpose. Overall, Malaysia has an average of 5 crashes per 100 km length. Pulau Pinang has the highest index of 14.8, which almost three times more of the national index. Melaka, Kuala Lumpur, Kedah and Perak followed suit. Selangor and Johor are slightly just above the national index with 6.6 and 7.29 respectively.

Table 11 Number of fatal crashes and road length by state for the year 2012

State	Fatal crashes *	Paved road, length (km)	Fatal crashes per 100 km length
Perlis	69	1,428.15	4.83
Kedah	529	6,402.73	8.26
Penang	373	2,519.91	14.80
Perak	693	8,553.55	8.10
Selangor	1,053	15,964.63	6.60
Kuala Lumpur	241	2,440.68	9.87
Negeri Sembilan	328	9,629.55	3.41
Melaka	222	2,037.42	10.90
Johor	985	13,516.56	7.29
Pahang	484	16,276.70	2.97
Kelantan	347	14,144.47	2.45
Terengganu	270	6,083.81	4.44
Sabah	398	9,712.08	4.10
Sarawak	389	16,749.55	2.32
Total	6,381	127,517.27	5.00

*Fatal crashes including fatal crashes at highways, whereas the road length composed of federal and state roads, excluding highways.

**Data on paved road length is obtained from Laporan Statistik Jalan Malaysia 2011, Public Works Department.

4. Road Safety Activities

Throughout the year 2012, there are many road safety interventions/activities that have been carried out by MIROS and other government agencies, highway authorities, non-profit organisations and societies. The following highlights some activities that MIROS are currently involved in. Among the prominent activities are ASEAN New Car Assessment Programme (NCAP), Automated Enforcement System (AES) and fatality prediction model. Other than these, the continuation of road safety audit, Road Safety Education, Ops Selamat 2012 and Safety and Health audit for commercial bus companies have been put in place as a countermeasure to reduce fatalities on the road.

4.1 ASEAN New Car Assessment Programme

The New Car Assessment Programme (NCAP) is a crashworthiness rating programme. This programme evaluates vehicle safety standards, raise consumer awareness and encourage a market for safer vehicles. The programme was carried out by Malaysian Institute of Road Safety Research (MIROS), in collaboration with Global NCAP, who funded the first phase of ASEAN NCAP. This programme was also supported by the membership of automobile associations from Malaysia (AAM), the Philippines (AAP) and Singapore (AA Singapore). This event was held on January 2013 at Melaka. During the event, ASEAN NCAP 1st Phase Result was released (figure 4).



Figure 4 ASEAN NCAP first phase result (Source: NCAP Report)

4.2 AES for Speeding and Red Light Running

Speed related crashes accounted for about 1,400 deaths per year in our country. Implementation of Automated Enforcement System (AES) could contribute to at least 30% reduction in speed related crashes, at 20% implementation coverage (Radin, 2007). This speed camera is installed at traffic lights and crash prone areas. The collaboration effort between Road Transport Department, Royal Malaysia Police, Road Safety Department and MIROS has finally managed to get cameras installed in 2012, even though the planning started in 2007. Currently, AES camera has been placed at 14 locations in the three states (Selangor, Perak and Putrajaya). Figure 5 show the mapping on first phase of AES camera locations. Table 12 show the list of camera locations with latitude and longitude.

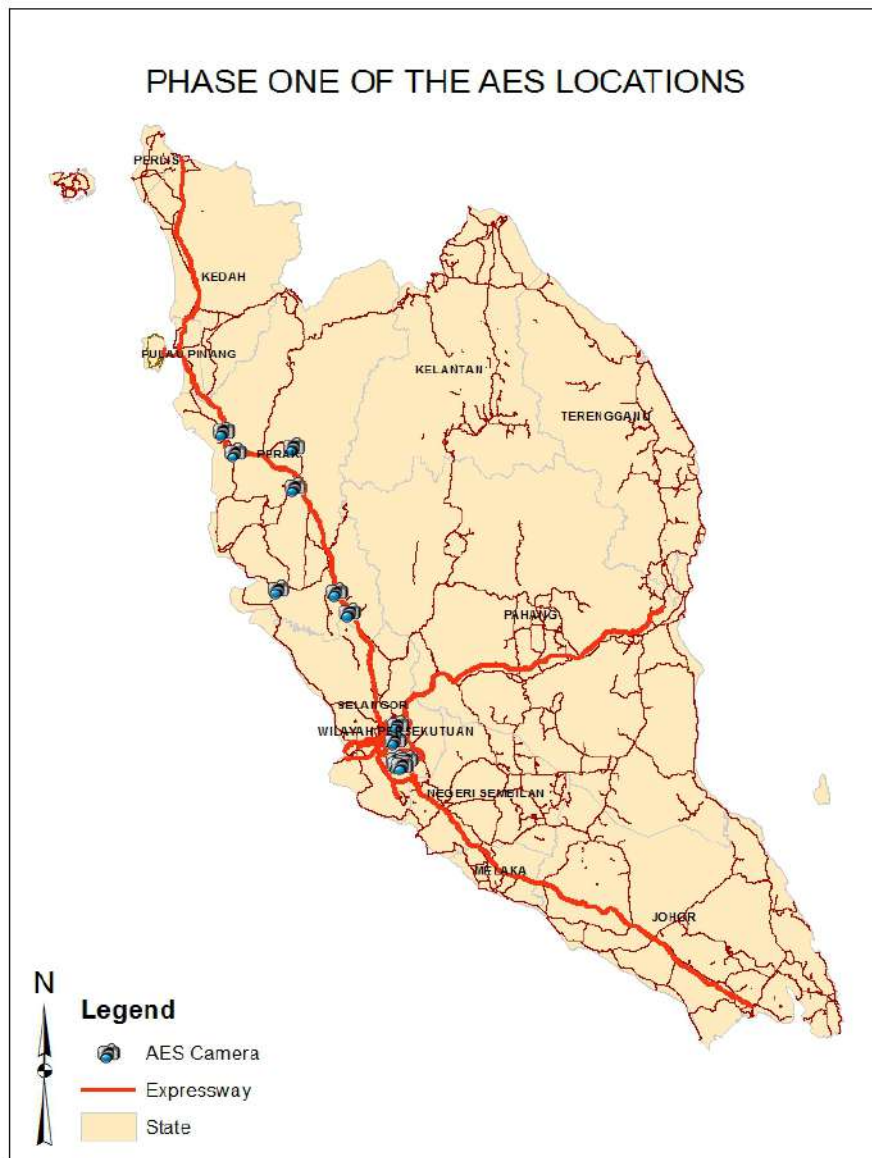


Figure 5 Mapping on first phase of AES locations

Table 12 First phase of AES locations

No.	Locations	Route no.	Speed limits	Coordinates	
1	KM375.9 PLUS Expressway – Slim River (North)	E0001	110 km/j	3.841833	101.409972
2	KM7, Jalan Maharajalela, Teluk Intan	F0058	90 km/j	3.974470	100.988000
3	KM91, Jalan Ipoh – Butterworth	F0001	90 km/j	4.781450	100.735000
4	KM26, Jalan Ipoh – Kuala Kangsar	F0001	Persimpangan lampu isyarat	4.816800	101.078000
5	KM85.5, Jalan Ipoh – Kuala Lumpur	F0001	90 km/j	3.962222	101.328806
6	KM204.6, PLUS Expressway –Taiping (North)	E0001	110 km/j	4.905135	100.668056
7	Jalan Pasir Putih, Ipoh	A0184	Persimpangan lampu isyarat	4.581670	101.082000
8	Jalan Klang Lama, Kuala Lumpur	Z0089	Persimpangan lampu isyarat	3.085617	101.673319
9	Jalan Ipoh, Kuala Lumpur	Z0060	Persimpangan lampu isyarat	3.177263	101.686826
10	KM6.6, Jalan Kajang/Puchong (SKVE)	B0011	80 km/j	2.973360	101.677880
11	KM301.6, PLUS Expressway-Kajang (North) Kajang	E0001	90 km/j	2.975650	101.742580
12	Jalan Lebu Sentosa, Putrajaya Putrajaya	Z0022	70 km/j	2.945491	101.683817
13	Jalan Persiaran Timur, Putrajaya	Z0002	80 km/j	2.943130	101.713940
14	KM D7.9 Sungai Besi, Kuala Lumpur	E0002	80 km/j	3.050850	101.705060

4.3 Fatality Prediction Model

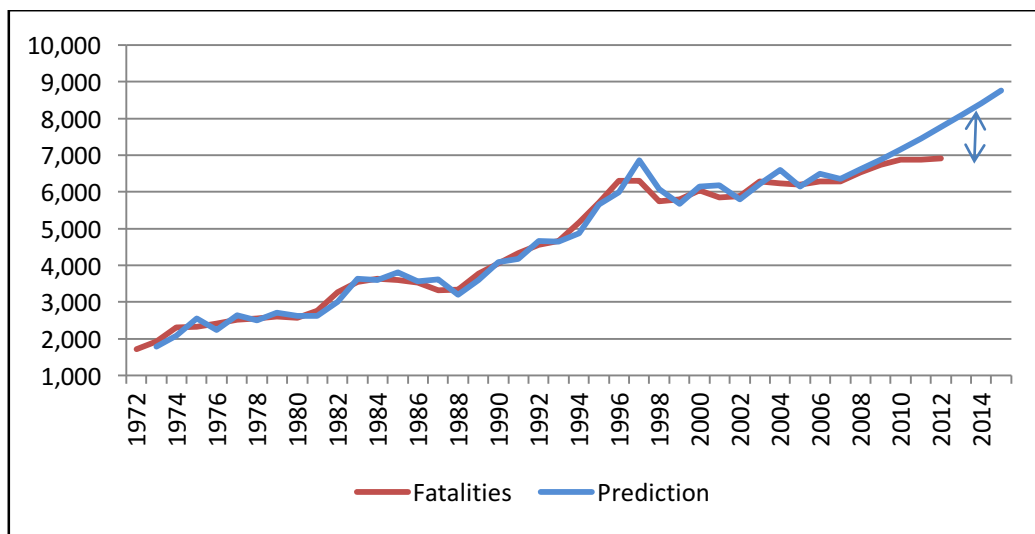


Figure 6 Fatality performance and prediction

Among significant work completed in 2012 is the development of Malaysian road fatalities prediction model. The prediction model utilises ARIMA method based on time series fatality data from year 1972 to year 2010 (Figure 6). It is predicted that fatalities will skyrocket to 10,716 fatalities in 2020 in a Business As Usual (BAU) scenario. This means that if there is no change to road user behaviour, private vehicle usage pattern and road safety policies, the number of road deaths will be as high as 10,716 in the year 2020. In year 2012, the report predicted that fatalities will be 7,762, 12% more than the recorded fatalities this year. In the year 2015, fatalities figure is predicted to be 8,760.

The model is developed as a basis to prepare the country in planning for better road safety intervention. WHO, in the Decade of Action, has announced that road safety death should be slashed by half in the year 2020. Therefore, the prediction model highlighted to the authorities that the death toll might reach 10,716 on the road by 2020; hence the target for the year 2020 must be set accordingly. The challenges lies in road user’s acceptance towards new initiatives and intervention introduced. For

example, higher summons value may be seen as profit-making initiative, rather than safety awareness efforts. The implementation of AES, without proper awareness programmes, might jeopardise the level of acceptance. On the other hand, road user behaviour does not change overnight. More awareness and education, especially community based programmes, need to be developed to make road users understand the rationale of each initiatives and value safety as priority.

4.4 Road Safety Audit Conducted by MIROS

In general, the execution of this safety audit is in line and in accordance with Stage 5 Road Safety Audit (RSA). All procedures involved in the road audit were carried out based on the “Road Safety Audit Guidelines for Safety Audit of Roads and Road Projects in Malaysia” as published by Public Works Department (PWD) and Road Engineering Association of Malaysia (REAM). Since 2009, RSA in MIROS was conducted by Road Safety Engineering and Environmental Centre (REER) based on data from public and local authorities or analysis from accidents data. Twelve RSA was conducted in 2012. These include RSA LDP Setiawalk, RSA Lebu Sentosa, RSA Stage 5 at KM8.2 Kerinchi Link, Report on Situation at Country Heights Kajang Intersection, Report on Road Safety Audit at Sekolah Kebangsaan Taman Melawati 2, RSA at 3-Legged Intersection in Jalan Ipoh, Preliminary Findings on Fatal Single-Vehicle Crash KM224 East Coast Expressway, RSA KM4.9 Federal Route 5 Setiawan-Teluk Intan Perak, RSA at Kajang Silk Highway, RSA at Section 5 353-354 Jalan Semenyih and BRTSL Traffic Modelling. REER also conducted RSA in Indonesia (RSA-Chevron Indonesia) in 2012. Other than MIROS, Public Works Department also conducted road safety audit at various stages.

4.5 Rear Seatbelt (RSB) for Vehicle Occupants

Rear seatbelt wearing rate among back seat passenger is quite low. Recent Ops Selamat 2012 reveals that the usage rate is not as high as expected. Awareness programmes have carried out, but a lack of enforcement and user acceptance has

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resulted in low adoption. A study was conducted using injury data in MROADS to evaluate the effectiveness of the rear seatbelt intervention.

Our results suggest that RSB intervention had significantly (p -value= 0.0001) reduced the number of people sustaining serious and slight injuries by about 20%. The implementation of change in the RSB law not only in reduced the number of injuries but also has a great impact to the health outcomes (Rohayu et al., 2013).

4.6 SHE Audit for Transportation Industry

For the year 2012, an audit on commercial bus companies, with regards to Safety, Health and Environment industrial code of practise (ICOP SHE) elements, has been conducted in 19 companies. The objective of the audit is to determine the implementation status of ICOP SHE among bus operators and propose recommendations for improvement. Among the items evaluated include details on driver, vehicle and journey management. Audits are conducted for any commercial bus operators that involved in road crashes with injuries (case based) and periodic audit (non-case based).

4.7 Ops Selamat 2012

Analysis of fatalities showed that the number of fatalities is increasing from year to year for the last three years (Table 13). The percentage increment varies from year to another, but the best performance was in 2011, where it recorded the smallest increment of less than one per cent (0.07%) from the previous year of 2010. Similarly, the number of daily fatalities is increasing, even though it still hovers around 18 deaths daily. For Ops Sikap figure, it shows the mean fatality during the 15 days of Ops Sikap. Similarly, the Ops CNY shows mean fatality for the same period.

Ops Sikap for both festive seasons, Hari Raya and Chinese New Year shows a positive outcome. For Ops CNY, it recorded a lower fatality rate for all three (3) consecutive years as compared to daily fatalities throughout the year. The differences in real

number are something that can be proud of (less by 7, and 3 deaths respectively). Translated into percentages, the reduction ranges from 16% to 38%. For Ops Sikap Hari Raya, even though the reduction is smaller, 11%, the reduction is still a positive outcome, as the exposure that road users have during Hari Raya is greater than Ops CNY.

Table 13 Comparison between Ops Sikap 2009 to 2012

	2012	2011	2010	2009
Ops Sikap Hari Raya	243	289	248	265
Mean Ops Sikap Hari Raya	16.20	19.27	16.21	17.67
Ops Sikap CNY	189	199	201	212
Mean Ops CNY	11.20	13.27	13.40	14.13

4.8 Road Safety Education (RSE)

Starting July 2012, the Road Safety Education Programme (RSE) has been extended to secondary school children. Those who are in Form 1 (age of 13), are exposed to road safety education module, using Bahasa Melayu subject as a medium. This initiative is conducted nationwide. Prior to implementation, secondary school teachers were given training and RSE modules to equip teachers on road safety aspects. Community-based Programme on RSE has been conducted in schools in Putrajaya area, and the model has been recommended to be emulated by other school in other states.

5. Conclusion

Generally, the absolute number of crashes and fatalities due to road traffic crashes are increasing from year to year despite all the effort that has been put by the government. However the increase in the number of crashes and fatalities could be associated with the rapid growth of motorisation in the country. Also the increase in number of fatalities is getting smaller as compared to the previous decade.

From the previous section, it can be seen that motorcyclists comprise the highest number of fatalities as compared to other road users group. In the earlier year the motorcyclist fatalities constituted less than 50% of the overall fatalities but since the year 1993 the motorcyclist fatalities has always been above 50%.

Although the number of motorcyclist fatalities is the highest, passenger cars are most frequently involved in crashes. This may indicate that outcome of passenger car crashes is less severe as compared to motorcycles. However this also shows that the high number of passenger car involvement in crashes may result in the death of motorcyclists if a motorcycle and passenger car are involved in a crash.

Throughout the year, there are numerous road safety activities that was carry out in order to bring down the number of fatalities arising from road traffic crashes in this country. The activities are designed to cover the three important components of road safety which are road, vehicles and human. Some of the high impact road safety related measures that were carried out are road safety education, automated enforcement system, Ops Selamat 2012 and rear seatbelt usage campaign, just to name some.

5.1 Gap

Road safety activities listed are generally centrally oriented. Study has shown that there is limitation with this approach and at times it's quite challenging to be implemented throughout the nation and accepted by the public. Hence the Road Safety Plan 2006 – 2010 suggests that community based activities in support to the central oriented programmes or intervention.

Although there are numerous activities in relation to road safety, there is still a gap which could be improved in order to achieve the target of reducing the number of fatalities in this country. There is still much improvement to be carried out in relation to motorcycle deaths. Motorcycle lanes are not the only way out to lower the motorcyclist deaths. Therefore, other factors to lower this figure should be identified and implemented.

The road safety programme also should not focus on certain road users only. Effort should also to be concentrated on other vulnerable road users which are cyclists and pedestrians. Statistics from the police indicates that younger and elderly pedestrians contributed most to pedestrian fatalities. Hence, the pedestrian safety programme should be design to focus to these two groups.

There is still room for improvement for many other road safety issues, namely child restraint, crashes at rural area, accompanied driving for newly licensed driver, and safer speed limit.

5.2 Expectation for 2013

The tremendous amount of road safety activities which were first implemented in the year 1998 should start to show positive results. Despite the upward trend in road traffic fatalities for the last decade, 2013 should be a turning point for a downward trend. This is important if the country want to achieve the Global Decade of Action aimed at reducing the projected road traffic deaths by 50% by the year 2020.

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With this recent update on road safety, it will serve as a progress indicator to all road safety practitioners on the current road safety situation in this country. Hence all road safety stakeholders should play their role in lowering the road traffic deaths.

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Research Report

Road Safety Updates 2012

Designed by: MIROS



Malaysian Institute of Road Safety Research
Lot 125-135, Jalan TKS 1, Taman Kajang Sentral
43000 Kajang, Selangor Darul Ehsan

Tel: +603 8924 9200 **Fax:** +603 8733 2005

Website: www.miros.gov.my **E-mail:** dg@miros.gov.my

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