

PATTERN OF OCCUPANT INJURY FOR REAL FRONTAL CRASHES IN MALAYSIA

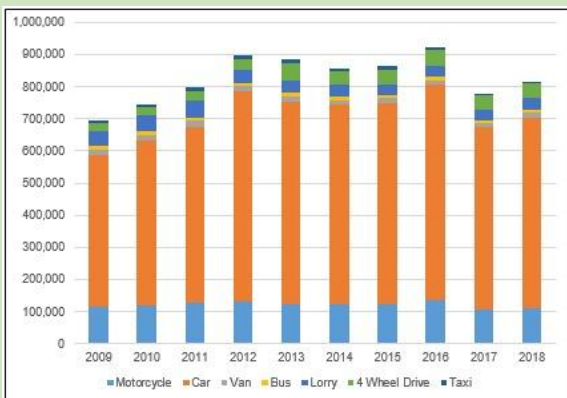


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INTRODUCTION

More than 8.2 million police reported motor vehicles crashed, resulting in 67,882 fatalities and over 140,000 injured victims from 2009 to 2018 recorded by Ministry of Transport, Malaysia.



Many accidents reported involving with passenger vehicles including driver's injury were due to frontal accidents.

ASEAN NCAP is an automobile safety rating program jointly established by the MIROS and Global NCAP.



ASEAN NCAP member organizations:

- MIROS
- Global NCAP
- Automobile Association of Malaysia, Philippines & Singapore

ASEAN NCAP remains committed to ensure the safety vehicle occupants in ASEAN region and to provide safer new car.

PROBLEM STATEMENT

Major advances have been made in understanding passenger car crashes through analyses of real life incidents and also with dummies.

Injury pattern for car driver based on real data is still lacking in Malaysia.

OBJECTIVES

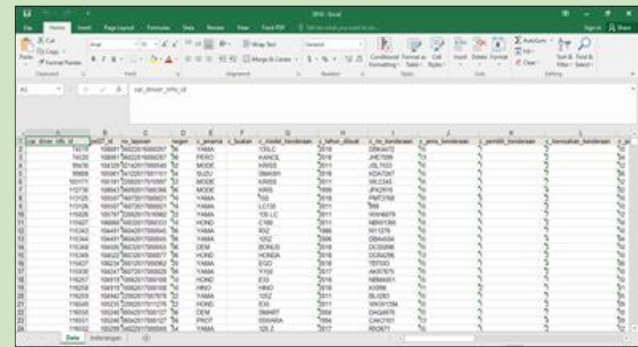
- To identify the pattern of injury for driver involve with real frontal crashes in Malaysia.
- To compare the injury category between frontal crash configuration.

BENEFITS

- Support improvement in decision making for future frontal test ASEAN NCAP program.
- Provide safer new car with affordable price

METHODOLOGY

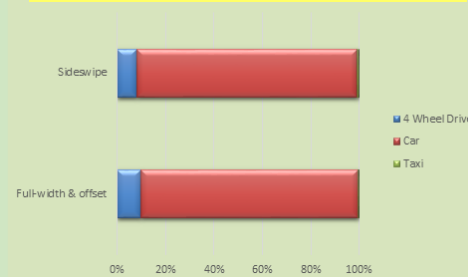
Data from Bukit Aman Traffic Investigation and Enforcement from (JSPT) from 2015-2018



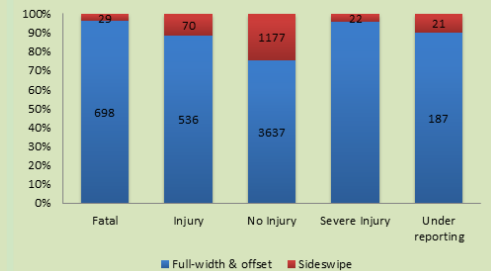
Analysis Descriptive – Frequency and PIVOT table & chart

RESULT

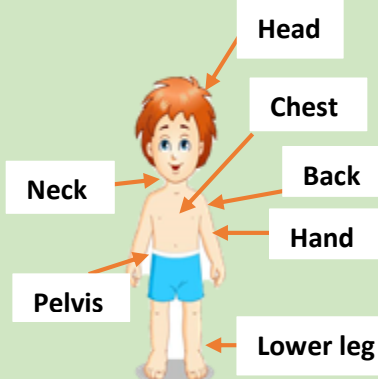
Distribution of type of vehicle



Distribution of injury category



Distribution of body part injury



Body Part Injury	Full-width & offset	Sideswipe	Grand Total
Back	12	2	14
Chest	83	5	88
Hand	62	15	77
Head	225	16	241
Lower Leg	253	19	272
Multiple	373	14	387
Neck	23	1	24
No Injury	3640	1177	4817
Pelvis	16	1	17
Under reporting	838	69	907
Grand Total	5525	1319	6844

The proven effectiveness and the success of wearing seatbelt in reducing fatality risk of drivers and passengers.

(R.S. Radin Umar, 2001)

Chi Square Test – MINITAB18 Statistical Software

Crash Configuration and Category of Injury Association

P value >0.05,
Ho: No significant effect

Chi-Square Test

Chi-Square	DF	P-Value
Pearson 296.183	4	0
Likelihood Ratio 362.278	4	0

Odd Ratio = 6.59

P value <0.05,
Ho: Significant effect

- The p-values are less than 0.05
- There is a significant effect between frontal crash configuration and level of injury in the single and multiple crashes.
- Full-width and off-set configuration is 6.59 more likely to fatal than sideswipe in single and multiple crashes.