

Injury Pattern among drivers involved in Single Frontal Crash based on the Police Reported Accident Data in Malaysia

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Abstract – 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. Single-vehicle crash can cause more fatalities than multi vehicle crashes as reported in previous study. Therefore, a better understanding of real frontal crashes is needed to support the decision making for future frontal test program. One of the important part to discover is the injury pattern of occupants based on real accidents. Furthermore, different frontal crash configurations may result in different level of injury severity. The objective of this study is to analyse the injury severity category and body part injury of drivers based on police reported single frontal crashes in Malaysia. Reported accident cases from 2015 – 2018 were gathered from Bukit Aman Traffic Investigation and Enforcement (JSPT), Royal Malaysia Police. The single-vehicle crashes categorized under full-width and offset and sideswipe configurations were selected. 757 cases were meeting selection criteria. 81.9% of the cases involved in the full-width and offset type of crashes configuration, while the sideswipe crash configuration contributes to 19.1% of the cases. Most of the drivers were reported with no injury (64%), fatal (17.6%), slight injury (11.8%) and severe injury (6.6%) of categories in both crash configurations. The most frequent injury sustained by fatal drivers were head injury for full-width and offset configuration, and multiple body parts injury for sideswipe configuration. The chi-square test was used to study the association between the crashes configuration and injury severity category. The p-values are less than 0.05, hence there is a significant effect between frontal crash configuration and injury severity category. Based on calculated odd ratio, full-width and offset configuration is 6.88 more likely to be fatal than sideswipe.

Keywords: Real Frontal Crashes, Driver Injury, Police Reported Accidents, Full-width and Offset, Sideswipe.

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