

# RIDING TOWARDS SAFETY: EXAMINING THE PATTERNS OF MOTORCYCLE ACCIDENTS IN MALAYSIA

N. Q. Radzuan<sup>1</sup>, M H. A. Hassan<sup>1</sup> [0000-0002-6681-1784], M. N. Omar<sup>1</sup>, N. A. Othman<sup>2</sup>, and K. A. Abu Kassim<sup>3</sup>

<sup>1</sup> Faculty of Mechanical and Automotive Engineering Technology, Universiti Malaysia Pahang, 26600 Pekan, Pahang, Malaysia

<sup>2</sup> Faculty of Electrical and Electronics Engineering Technology, Universiti Malaysia Pahang, 26600 Pekan, Pahang, Malaysia

<sup>3</sup> Malaysian Institute of Road Safety Research, 43000, Kajang, Malaysia

mhasnun@ump.edu.my

**Abstract.** The present study aimed to analyse the pattern of motorcycle accidents in Malaysia within a five-year period from 2015 to 2019. The research objective was to understand the characteristics and trends of motorcycle accidents and injuries in order to identify areas for improvement in motorcycle safety. Data collection was conducted using traffic accident reports provided by the Royal Malaysian Police. The data was analysed to identify patterns and trends in the number of accidents, types of injuries, victims' body injury location, the usage of protective headgear, and location of opponent vehicle damage. The results of the study showed that motorcycle accidents remain a significant issue in Malaysia with a relatively consistent number of accidents each year. Head injuries were the major contributor towards motorcycle fatalities. The analysis also revealed that a large proportion of fatal victims who suffered from head injuries were wearing helmets which raised doubts about the effectiveness of the protective headgear used and the possibility of counterfeit helmets or improper usage. The study suggests the establishment of a motorcycle safety rating program similar to ASEAN NCAP for passenger cars. This program would raise awareness of motorcycle safety and aid consumers in making informed purchase decisions. Additionally, the study recommends rating the effectiveness of protective gear such as helmets in reducing head injury risk in accidents. The study provides a comprehensive analysis of motorcycle accidents in Malaysia and highlights the need for continued efforts to improve motorcycle safety through programs and better protective headgear in order to decrease motorcycle accidents and injuries.

**Keywords:** Motorcycle helmet; ASEAN NCAP; safety rating; types of injuries; location of body injuries; location of opponent vehicle damage.