Abstract No: 295 ***Life Sciences***

ANALYSIS OF THE SEVERITY OF THE ACCIDENTS IN THE SOUTHERN EXPRESSWAY

S.D.D.R. Kumara[1*] and C.K. Walgampaya[2]

[1]Postgraduate Institute of Science, University of Peradeniya, Peradeniya, Sri Lanka
[2]Department of Engineering Mathematics, Faculty of Engineering, University of Peradeniya, Peradeniya, Sri Lanka
[*]ruwanesp@gmail.com

The World Health Organization (WHO) report on "Global Health Safety 2018" revealed that road traffic injuries claim more than 1.35 million lives each year, and have a huge impact on health and development of the human society. Introduction of the expressway concept to the road network of the country is undoubtably a development which has made transportation and commuting easy and time saving. However, the number of accidents and the severity of the accidents occurring in the Southern Expressway have reflected an increase over the years. This study attempted to identify the factors affecting the severity of the accidents in the Expressway. The study utilized secondary data collected by the Southern Expressway Operation Maintenance and Management Division (EOMMD) during the period from 2011 to 2018 which consisted of 5239 observations. Variables in the data set consisted of accident related information, such as accident type, reason for the accident, accident time, location, driver related data, weather condition and road condition. Preliminary analysis is conducted followed by multinomial logit regression analysis, hotspot analysis and photographic and video graphic survey methods under qualitative techniques. Study also collected information from the officers of the Expressway Management via discussions in order to triangulate and validate the results. Accident prone locations for severe and minor level accidents were identified along with the significant reasons for accidents. Among the numerous reasons affecting the severity of the accidents, the behavioural factors, such as drunk driving, fatigue and driving speed, were significant. Road side landscape and structural elements were also found to be important factors to be considered.

Keywords: Expressway accidents, Hotspot Analysis, Multinomial logit regression, Severity