MOTORCYCLE ACCIDENT ANALYSIS IN SRI LANKA

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Department of Civil Engineering

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Thesis submitted in partial fulfillment of the requirements for the degree
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DECLARATION

I declare that this is my own work and this thesis does not incorporate without acknowledgement any material previously submitted for a degree or diploma in any other university or institute of higher learning and to the best of my knowledge and believe it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

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ABSTRACT

Motorcycles comprise nearly 30% of the traffic flow in most highways in Sri Lanka. The rapid increase in motorcycle usage has led to a significant increase in the number of motorcycle related accidents and fatalities. The objective of this study is to identify the risk factors involved in motorcycle accidents.

In this study, Motorcycle related accidents data were analyzed under four categories. Such as, Motorcycle accident with motor vehicles, pedestrian, cyclist and self-accidents. Risk to motorcyclist with respect different types of vehicles also estimated. Other than descriptive statistics, the stepwise binary logistics regression was selected to be used in analyzing accidents.

Motorcycle related accidents accounts for nearly 40% of total road accidents. Motorcyclist in Sri Lanka face approximately 1.60 times more fatal risk compare to motorcyclists all over the world. Motorcycle accidents with Lorries and Buses have more chance to become fatal compare with other vehicles.

Nearly 29% of the pedestrian fatalities and 9% of cyclist fatalities involved motorcycles. Furthermore, pedestrians - motorcycle fatal accidents were at greatest risk at mid block sections of the road and pedestrian aged 60 above were at the highest risk of sufferring a fatality during a motorcycle accident compared to other age groups.

For single vehicle accidents, more than 57% of accidents occur during the night time and the risk ratio increase by over 20% during the night time on road segments without street lightings.

Involvement of younger riders in accidents are high and fatal risk to riders increase with their age. The study also evaluates other risk factors associated with motorcycle related accidents. Findings of the study would be useful to identify appropriate measures to improve the motorcycle rider safety in Sri Lanka.

Keywords: Accident analysis, Motorcycle, road safety, risk analysis

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