DETERMINATION OF DEFINITIONS FOR ACCIDENT BLACK SPOTS IN SRI LANKA

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By

G.P De Silva
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Supervised by

Dr. (Mrs.) C. Jayasinghe
Prof. L. L. Ratnayake

DEPARMENT OF CIVIL ENGINEERING

UNIVERSITY OF MORATUWA

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DECLARATION

I, Gayathri Pushpika De Silva, hereby declare that the content of this thesis is the output of original research work carried out over a period of 15 months at the Department of Civil Engineering, University of Moratuwa. Whenever the work done by others was used, it was mentioned appropriately as a reference.

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ABSTRACT

Ever increasing road traffic accidents and traffic flow is a heavy burden to the developing country like Sri Lanka. The rate of increase in road accidents is 7% per year in Sri Lanka. Increasing in vehicle population is 11% per year.

The analysis of past accident data has clearly shown that in Sri Lanka about 50,000 accidents occurs annually on average out of which 2000 were fatal accidents and 15,000 were injury accidents. This is a heavy economic burden to the country. In year 2001 the accident cost has been evaluated as Rs.10.25 billion and the year 2001 Gross domestic product is Rs.1400 billion. Therefore, the accident cost is about 1% of the country's GDP (Gross Domestic Product). It clearly implies that there should be a cost effective method of reducing accidents throughout the country. There are several methods of reducing accidents, but most effective way of reducing accidents is to identify accident-prone locations throughout the country and treat them in a cost effective manner.

This research has been focused on determining a suitable mechanism to identify accident black spots. Mechanisms considered are Equivalent accident number method, Accident rate method, weighted number of accident method and combined method.

Accident rate can be used to identify accident black spots. Accident rate gives the number of accidents with the traffic volume. Therefore, accident rate can be recommended as a better tool to identify accident black spots over the accident frequency method, which is presently used in Sri Lanka to identify accident black spots.

When prioritizing the accident black spots it has been recommended that the Measure of severity method which is derived from Equivalent accident number method can be considered as a better mechanism over the others. However, the weighted number of accident method could emphasis the types of collisions commonly occur at black spots. This can be useful in a stage of determining countermeasures at black spots.