

## **Modelling the Effect of Physical Environment Factors on Child Pedestrian Severity Collisions in Malaysia: A Multinomial Logistic Regression Analysis**

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**Abstract :** Children are at the greater risk to be involved in road traffic collisions due to the complex interaction of various elements in our transportation system. It encompasses interactions between the elements of children and driver behavior along with physical and social environment factors. The present study examined the effect between the collisions severity and physical environment factors on child pedestrian collisions. The severity of collisions is categorized into four injury outcomes: fatal, serious injury, slight injury, and damage. The sample size comprised of 2487 cases of child pedestrian-vehicle collisions in which children aged 7 to 12 years old was involved in Malaysia for the years 2006-2015. A multinomial logistic regression was applied to establish the effect between severity levels and physical environment factors. The results showed that eight contributing factors influence the probability of an injury road surface material, traffic system, road marking, control type, lighting condition, type of location, land use and road surface condition. Understanding the effect of physical environment factors may contribute to the improvement of physical environment design and decrease the collision involvement.

**Keywords :** child pedestrian, collisions, primary school, road injuries

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