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The influence of the infrastructure characteristics in urban road accidents occurrence

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Abstract

This paper summarizes the result of a study which contributes to the improvement of road safety in Portuguese urban areas, through the creation of tools that can be used in intervention methods in the planning and management of road networks.

The first tool relates the creation of a geocoded database of road accidents occurred in Lisbon between 2004 and 2007, which allowed the definition of digital maps, with the possibility of a wide range of consultations and crossing of information.

The second tool concerns the development of models to estimate the frequency of accidents on urban networks, according to different desegregations: road element (intersections and segments); type of accident (accidents with and without pedestrians); and inclusion of explanatory variables related to the road environment. Several methods were used to assess the goodness of fit of the developed models, allowing more robust conclusions.

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1. Introduction

According to official statistics, a large percentage of accidents are reported in Portuguese urban areas. For instance, from 2004 to 2010, about 70% of all injury accidents and 45% of the fatalities occurred inside urban agglomerations (ANSR, 2010). This significant problem was also identified in the city of Lisbon, which was the case study for the development of a PhD Thesis. The main purpose of the research was to develop methods for managing the safety of urban road networks, particularly those applied to

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