

Spatial Analysis of Urban Accidents; A Case Study of Tehran,Iran

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Road accidents may be seen as discrete promote events, localized in space and time. The most important objective of the study was to identify the spatial pattern of urban accidents in Tehran city in order to finding the causes and consequences as well as the temporal and spatial variation of accidents. Based on spatio-temporal data analysis method, this paper aims to analyse traffic accidents data in time and space. The spatial relationship between time of daily activities which generate trips and urban traffic accidents is examined and applied to Tehran for 2010~2011.

The research was based on different primary and secondary data sources, which include locations of accidents and many rich attribute such as date, reason, kind, etc. Questionnaires were distributed to 600 drivers in the study area in order to gather data about drivers' knowledge, beliefs, attitude and behaviours. GIS software was used in this study and different maps were made using GIS Arc view 10.2. Tehran urban accidents point by point data with different attributes was collected from Police Department of Islamic republic of Iran, Tehran. These rich accident data were used as source of information and data analysis. The study considered different factors in urban traffic accidents. These include environmental, human and cultural factors, etc. this study stated that the concentration of educational, commercial and cultural activities that make large number of urban trips and road usage and traffic volume in peak hour and road type are among the main causes of the urban accidents in Tehran city. The spatial distribution and variation of Tehran's urban accidents indicated those accident occurrences are highly concentrated along the residential, primary, and secondary roads as well as dense in highways and freeways. This study also shows the relationship between the occurrences of accidents with peak hours of the day. Highways and freeways are the most dangerous road type in road type variation in Tehran city. And the key reason of accidents in these road types is high speed. High occurrences of urban accidents were caused by culture and behaviour of not only drivers but also all users of the roads. It has been recommended that the improvement of knowledge and culture by education through the public Medias and the rules for offenders must be reissue soon.

Keywords: GIS, Urban Traffic Accidents, Peak time, Road Type