

Spatial analysis of weather related road accidents in Iran

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ABSTRACT

Road safety is an important basis in traffic and transportation engineering. Over the past decades, the number of deaths and injuries related to road accidents has increased considerably in developing countries specially in Iran. Road accidents are the consequence of the combined effect of behavioral, technological and environmental factors. Iran has a specific kind of climate due to its geographical location and some effective factors like topography and distance from water bodies. There are 237 dangerous and snow prone passes. Many of these passes are blocked during cold months by heavy snowfalls, avalanches, blizzards, black ice, dense fogs. This causes considerable damage to the economy of the country.

In this article, the spatial dimension of weather related road accidents is examined using data extracted from Police Accident Report Forms. Variations in accident frequency in fine weather, rain, storm, fog and snow are detailed and comparison made between frequency of accident occurrence and weather condition across Iran provinces. Findings establish that there is a marked correlation between weather related accident and the geographical distribution of weather conditions. The result showed that rain was one of the most important factors in road accidents. According to obtained results on visibility data; provinces of Fars and Hormozgan in rain, Chaharmahal and Ardebil in snow fall, Ardebil and Zanjan in fog, Sistan and Baluchestan and Yazd in storm condition were most vulnerable regions.