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Analysis of road traffic fatalities and injuries using artificial neural network: A case study on NH-544 🛒

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Road Traffic Accidents (RTA) are a massive public health concern, particularly in developing nations such as India. Accidents are complex events that claim many lives and have an adverse influence on a country's economy. The majority of accidents result in deaths and serious injuries. To reduce this negative impact, the factors that are causing them should be addressed ahead of time. This study seeks to identify the factors that contribute to fatal crashes and grievous injuries on National Highway (NH-544), since National Highways have the highest count of traffic accidents among India's various road networks. To determine the factors, a history of accident data and an efficient analytical tool are required to examine previous data and evaluate possible outcomes. Artificial Neural Network (ANN), a version of Artificial Intelligence (AI), was chosen because of its flexibility to cope, anticipate, as well as provide a solution in a short timeframe. The data regarding traffic accidents on NH-544 was obtained from the National Highway Authority of India (NHAI) for a five-year period (2017-2021). The data obtained has been incorporated into a neural network structure by means of python programming. The model's outcome reveals the major factors that have contributed to fatalities and injuries in past years. These findings will assist road designers and safety practitioners in better managing road infrastructure safety and identifying safety improvements.

Topics