

Factors Affecting At-Grade Railway Level Crossing Accidents in Bangladesh

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Abstract : Railway networks have a significant role in the economy of any country. Similar to other transportation modes, many lives suffer from fatalities or injuries caused by accidents related to the railway. Railway accidents are not as common as roadway accidents yet they are more devastating and damaging than other roadway accidents. Despite that, issues related to railway accidents are not taken into consideration with significant attention as a major threat because of their less frequency compared to other accident categories perhaps. However, the Federal Railroad Administration reported nearly twelve thousand train accidents related to the railroad in the year 2014, resulting in more than eight hundred fatalities and thousands of injuries in the United States alone of which nearly one third fatalities resulted from railway crossing accidents. From an analysis of railway accident data of six years (2005-2010), it has been revealed that 344 numbers of the collision were occurred resulting 200 people dead and 443 people injured in Bangladesh. This paper includes a comprehensive overview of the railway safety situation in Bangladesh from 1998 to 2015. Each year on average, eight fatalities are reported in at-grade level crossings due to railway accidents in Bangladesh. In this paper, the number of railway accidents that occurred in Bangladesh has been presented and a fatality rate of 58.62% has been estimated as the percentage of total at-grade railway level crossing accidents. For this study, analysis of railway accidents in Bangladesh for the period 1998 to 2015 was obtained from the police reported accident database using MAAP (Microcomputer Accident Analysis Package). Investigation of the major contributing factors to the railway accidents has been performed using the Multinomial Logit model. Furthermore, hotspot analysis has been conducted using ArcGIS. Eventually, some suggestions have been provided to mitigate those accidents.

Keywords : safety, human factors, multinomial logit model, railway

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