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MULTIPLE LINEAR REGRESSION MODELLING APPROACH FOR ANALYZING CONGESTION RISK PRIORITY FOR URBAN CORRIDORS

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Abstract

Indian policies and the literature concerned with the risk have identified the need for risk analysis to deal with the issues related to congestion. Major studies on the risk behavior addresses on the network design and the choice of route based on the conventional travel demand modeling but there is no scientific approach for how the risk is generated at one place and distributed to other places. The risk generated at the central business district (CBD) area or the city is due to the risk or delay carried from the remote places. Identifying congestion in the links of the road network is an important task. This study provides a conceptual framework to analyze the parameters which are responsible for risk and for the occurrence of risk at one place and risk distribution and concentration at other places. Risk analysis has been done through Regression analysis to identify the factors contributing to risk generation and the major links which are leading to congestion. Geometric characteristics, Traffic characteristics, and Land use characteristics were collected by considering speed as major contributor. Correlation parameters between the observed field data and prioritization observed from the model indicated that the critical links identified in the network through the analysis are the worst links. It is concluded that risk is generated at Link ID: M8 identified as risk priority "1" and distributed to Link ID: M2 as risk priority "2" and for Link ID: M1 and M3 risk priority are "3" and "4" of the case study.

Key Words : *Regression analysis, Congestion, Risk priority, Road characteristics.*