# Accessibility of Road Network Based on Connectivity Analysis Technique in Moratuwa Urban Area of Colombo

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**Abstract**

The road connectivity in development activities plays a key role in the urban spatial structure. In recent years such developments have been built using a road design concept that uses poor road connectivity. This road patterns does not provide travelers with alternative paths to complete their Journeys and therefore the traffic concentrates on the main arterials. In this background, Moratuwa M.C area was selected for analysis which is a one of the commercial capital of Colombo city and Sri Lanka. This urban area also is functioning with high traffic concentration. The objective of this paper is to identify the hierarchical structure and formation of the road network and to analyze the connectivity levels of the selected nodes in spatially. For that purpose a method to assess how connectivity affects the hierarchical structure was developed. I have used secondary data like City Profile of Moratuwa MC area and Statistical Hand Book of Moratuwa D.S Office and google map with a Moratuwa and Colombo regional network for this research. The process used in this study involved the selection of some nodes to know connectivity level and demand analysis of road networks. Then roads were coded in greater detail to show existing road patterns and then new links were added to provide better connectivity. Very high, high, moderate and law or Poor criteria were used as connectivity levels using space syntax analysis and connectivity analysis methods. Results from this paper reveal that forms of the roads and connectivity levels of roads were known. Positive and negative aspects were identified in the study area and given some recommendations which can help spread out traffic volumes more efficiently throughout a network. In that respect more studies about design criteria, safety and livability levels of residential areas with interconnected road patterns are needed. When we do this, traffic congestion can be avoided or delayed and the transportation facilities would be more sustainable in the future. However as a spatial analysis method connectivity analysis is more reliable.

**Key words:** Spatial Structure, Connectivity Analysis, Physical Infrastructure

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