Benefits for the Population of Assiut City of an Efficient and Sustainable Transport Network: A Study Using Graph Theory and GIS

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Abstract:

This study provides an analysis of accessibility and spatial interactions within Assiut City, Egypt, in order to develop a strategic plan for an efficient and sustainable transportation network. Graph theory, GIS and remote sensing techniques have been used to derive in-depth information about the existing and probable spatial network of transportation. Several indices were checked for compatibility with a possible future strategic plan on the basis of the findings of the study. Calculations show possible transport routes during disaster management and the degree of connectivity of the streets in the city, as well as details of ideal accessibility, spatial interactions and real-time variances. It is concluded that to ensure a sustainable strategic plan for a transportation network in Assiut City, it is important to analyze the data presented in matrices and to use the collation of this data for effective decision making.

Keywords:

Keywords: Transportation network, Transport planning, Strategic planning, GIS, Assiut City, Egypt

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