عنوان مقاله:

The Analysis of Spatial Performance of Communication Network for relief after an Earthquake, case study: Baghmishe Town in Tabriz

محل انتشار:

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خلاصه مقاله:

Background: Road networks are key lifelines for the community, and improving their efficiency is critical to the availability of road access after earthquakes. The effectiveness of urban transportation systems after earthquakes has a significant impact on disaster relief performance. Urban road network has been recognized as an important factor in rescue and relief activities after a catastrophic event like an earthquake. Rapid impact assessment of urban road network performance after earthquakes is crucial for initiating effective emergency response because roads are important for the rescue activation. A proper disaster management plan requires that such studies be completed ahead of time before a devastating event to have a thorough understanding of the situation and to plan especially for emergency activities. Methods: This paper presents a GIS-ba sed multi-criteria decision analysis approach for evaluating spatial performance of Baghmishe town's communication networks after earthquake. Although Baghmishe town is a newly constructed area, it has been as the most vulnerable region in Tabriz city due to locate in the vicinity of active faults. Thus, one of key questions that arise is investigation of spatial performance of communication network in the region. The multi-criteria decision fr amework considers environmental and human-built factors which are combined by integration of analytical hierarchy process (AHP) to determine criteria weights, the weights in GIS are applied to have been more accuracy the performance analysis of communication networks. The methodology has four major steps such as: identification of effective factors; using these factors in an analytical hierarchy process and spatial showing them and finally producing a map for spatial assessment of effectiveness communication network in Baghmishe town. This enabled the selection of strengthening solutions that meet the performance requirements for the Baghmishe Town's road networks. Findings: According to the results, only ۴۰% had high and ۶۰% poor performance respectively of the total area of communication network. Conclusion: The results showed that density of building and population should be reduced at narrow passageways; also, severely avoided increasing enclosed degree and constructing height building.Another approach which must be considered is as follows: to predict a disaster management center and change the barren land into green spaces especially in line west north to east north of Town and approve of sever regulation for construction

کلمات کلیدی:

,performance of communication network, Earthquake, relief activities, Disaster Management
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