

Landslide investigation using lineaments extracted from TM Data

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Lineaments extracted from digital images contribute important information for hazard evaluation and resource management. In this research relationship between landslide occurrence and lineaments extracted from landsat TM data were investigated.

The study area is located in Taleghan region in Alborz zone, north part of Iran. Landslide distribution map was prepared based on aerial photo interpretation with scale of 1:20,000. The accuracy of the map was checked during field survey. The lineaments on landsat images were interpreted by considering those lineaments which could be clearly determined as fault zone, fractured structures, linear river valley, linear tonal anomaly zone, etc. Based on the lineaments, structural analysis of the study area was performed, and was compared with the existing structural map.

The landslide distribution map and lineament layers were analyzed in a GIS environment. For this purpose lineament density and distance from lineament maps were prepared.

To analyze the data, we examine the relationship between landslide localities and lineament density and also landslide localities and distance from lineaments. The results indicate good agreement between land sliding and lineaments density as well as distance from lineaments. The results of the study showed that:

- 1) Lineaments extracted from TM data can be applied for structural analysis for the study area.
- 2) The lineament map can be used to propose proper sites for rural settlement and construction works especially life line structures.