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Landslide hazard zonation using relative effect method: A case study in the Bormahan basin, northeast of Iran

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A landslide hazard zonation map depicts division of land surface into zones of variety degree of stability based on estimated significance factors which are important in a basin. Effective parameters on landslide are determined based on a quantitative approach by calculating the ratio of landslide percentage in a unit and the unit coverage percentage in the basin. Then the priority of each parameter is determined. There are different methods of landslide hazard zonation with some advantages and disadvantages. We suggest Relative Effect Method (R.E.M), which is a statistical method by using GIS softwares for landslide hazard zonation . This method determines the relative effect (RE) of each unit such as surface geology, slope morphometry, climatic conditions, land use and land cover by calculating the ratio of the unit portion in coverage and landslide. The function that is used in this method is logarithmic. The advantages of the logarithmic function are in the domain determination for output data and equality for plus and minus domain of calculated REs. We examine the landslide potentials and landslide hazard zonation in Bormahan basin. Bormahan basin with many landslides is located in Binalood mountainous terrain in northeast of Iran. Slope stability analysis was used to evaluate the landslide hazard zonation map in Bormahan basin.