

# APPLICATION OF LIKELIHOOD RATIO A MODEL FOR LANDSLIDE SUSCEPTIBILITY MAPPING USING GIS AT JANGHUNG, KOREA

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## ABSTRACT

The aim of this study is to apply and verify of Bayesian probability model, the likelihood ratio and statistical model, at Janghung, Korea, using a Geographic Information System (GIS). Landslide locations were identified in the study area from interpretation of IRS satellite images, field surveys, and maps of the topography, soil type, forest cover, geology and land use were constructed to spatial database. The factors that influence landslide occurrence, such as slope, aspect and curvature of topography were calculated from the topographic database. Texture, material, drainage and effective soil thickness were extracted from the soil database, and type, diameter and density of forest were extracted from the forest database. Land use was classified from the Landsat TM image satellite image. As each factor's ratings, the likelihood ratio coefficient were overlaid for landslide susceptibility mapping. Then the landslide susceptibility map was verified and compared using the existing landslide location. The results can be used to reduce hazards associated with landslides management and to plan land use and construction.

Key words: Landslide, Susceptibility, GIS, Likelihood ratio, Verification