

## District Selection for Geotechnical Settlement Suitability Using GIS and Multi Criteria Decision Analysis: A Case Study in Denizli, Turkey

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**Abstract :** Multi criteria decision analysis (MDCA) covers both data and experience. It is very common to solve the problems with many parameters and uncertainties. GIS supported solutions improve and speed up the decision process. Weighted grading as a MDCA method is employed for solving the geotechnical problems. In this study, geotechnical parameters namely soil type; SPT (N) blow number, shear wave velocity (Vs) and depth of underground water level (DUWL) have been engaged in MDCA and GIS. In terms of geotechnical aspects, the settlement suitability of the municipal area was analyzed by the method. MDCA results were compatible with the geotechnical observations and experience. The method can be employed in geotechnical oriented microzoning studies if the criteria are well evaluated.

**Keywords :** GIS, spatial analysis, multi criteria decision analysis, geotechnics

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