

Evaluating emergency evacuation shelters in Seoul using AHP

Seoul, the capital city of Korea, is a megacity with a population of over 10 million and is especially noted for its population density, which is the highest in the OECD countries. As the land uses of Seoul become more intensive with densely built, high-rise buildings, the larger portion of population becomes vulnerable to different types of natural and man-made disasters. Although the most frequent and destructive natural hazards in Korea are heavy rainfalls and typhoons, Seoul, which is located close to the North and South Korean borders, is also susceptible to possible military threat. Also, there have been wide criticisms on whether the currently designated shelters, many of which are housed in subway stations or underground parking lots, play the right roles as shelters from emergency situations. In order to establish effective disaster response policies, proper means to evaluate current evacuation shelters is required. For the proper evaluation, we should be able to define and compare a number of decision factors such as capacity, accessibility, durability as well as the ability to perform the shelter roles from different types of disasters such as flood, fire and military attacks. The AHP (Analytic Hierarchy Process) is known as a systematic method for comparing a list of objectives or alternatives. In this study, we choose decision factors and build the hierarchies of them and compare about 100 shelters among 4000 shelters in Seoul using AHP and evaluate the suitability of them. The resulting suitability values are displayed and compared using GIS.

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Biography: Jung-Lan Yang is a graduate student in master program in the Dept. of Geoinformatics, the University of Seoul. She is interested in integrated analysis of different fields including spatial analysis, spatial statistics, urban planning and transportation.

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