

Human Vulnerabilities Assessment and Recognition of Its Reduction Methods Against Earthquake in Crowded Places By Using Fuzzy Logic Method (Case Study: The Old Bazaar Of Tabriz - Iran)

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Abstract

Traditional bazaars (the word is used for big commercial complexes in eastern countries) have always played significant role in spatial organization of Iranian cities. These bazaars have influenced by both Commercial and non-commercial activities like religious, didactic, political, etc. These characteristics are categorized into social, economical, constructive, functional and infrastructural layers. But, currently there are different problems for all of these layers and the role of constructive problems in bazaars, proportionate to their design method in previous centuries, is more salient due to the oldness and exhaustion of these places. Now, the old bazaars with these problems and with high density of people are more vulnerable especially when a disaster such as an earthquake occurs. The Old Bazaar of Tabriz (North West of Iran), the largest covered complex all over the world, is challenging with the problems and vulnerabilities mentioned above. Thus recognition of the factors influence the vulnerability of this bazaar both in physical and human aspects is the main aim of this paper. Therefore, analytical hierarchy process (AHP) as a powerful tool for solving sophisticated decision making problems, which applies pair wise comparison matrix, is used in this paper to obtain the main aim of this study and on the other hand, according to the sophisticated structure of the problem, imprecise data, less of information, and inherent uncertainty, the usage of the fuzzy sets can be useful. Finally, some prescription and methods will be proposed in brief.

Keywords: Bazaar, Disaster, Earthquake, Fuzzy, Mitigation, Vulnerability.