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Analysis Rescuers' Viewpoint about Victims Tracking in Earthquake by Using Radio Frequency Identification (RFID)

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Abstract : Background: Radio frequency identification (RFID) system has been successfully applied to the areas of manufacturing, supply chain, agriculture, transportation, healthcare, and services. The RFID is already used to track and trace the victims in a disaster situation. Data can be collected in real time and be immediately available to emergency personnel and saves time by the RFID. Objectives: The aim of this study was, first, to identify stakeholders and customers for rescuing earthquake victims, second, to list key internal and external factors to use RFID to track earthquake victims, finally, to assess SWOT for rescuers' viewpoint. Materials and Methods: This study was an applied and analytical study. The study population included scholars, experts, planners, policy makers and rescuers in the "red crescent society of Isfahan province", "disaster management Isfahan province", "maintenance and operation department of Isfahan", "fire and safety services organization of Isfahan municipality", and "medical emergencies and disaster management center of Isfahan". After that, researchers held a workshop to teach participants about RFID and its usages in tracking earthquake victims. In the meanwhile of the workshop, participants identified, listed, and weighed key internal factors (strengths and weaknesses; SW) and external factors (opportunities and threats; OT) to use RFID in tracking earthquake victims. Therefore, participants put weigh strengths, weaknesses, opportunities, and threats (SWOT) and their weighted scales were calculated. Then, participants' opinions about this issue were assessed. Finally, according to the SWOT matrix, strategies to solve the weaknesses, problems, challenges, and threats through opportunities and strengths were proposed by participants. Results: The SWOT analysis showed that the total weighted score for internal and external factors were 3.91 (Internal Factor Evaluation) and 3.31 (External Factor Evaluation) respectively. Therefore, it was in a quadrant SO strategies cell in the SWOT analysis matrix and aggressive strategies were resulted. Organizations, scholars, experts, planners, policy makers and rescue workers should plan to use RFID technology in order to save more victims and manage their life. Conclusions: Researchers suppose to apply SO strategies and use a firm’s internal strength to take advantage of external opportunities. It is suggested, policy maker should plan to use the most developed technologies to save earthquake victims and deliver the easiest service to them. To do this, education, informing, and encouraging rescuers to use these technologies is essential. Originality/ Value: This study was a research paper that showed how RFID can be useful to track victims in earthquake.

Keywords : frequency identification system, strength, weakness, earthquake, victim
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