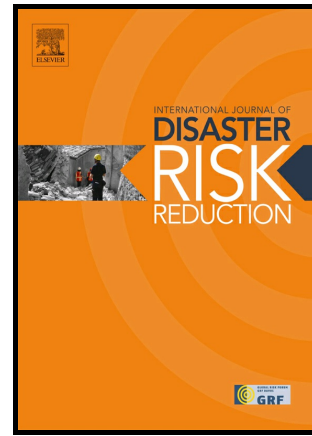


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An inclusive and adaptive framework for measuring social resilience to disastersA.M. Aslam Saja^{1,2,3}, Melissa Teo^{1,*}, Ashantha Goonetilleke¹, Abdul M. Ziyath¹¹Science and Engineering Faculty, Queensland University of Technology (QUT), GPO Box 2434, Brisbane, 4001, Queensland, Australia² Post Graduate Institute of Science, University of Peradeniya, Peradeniya, Sri Lanka³Faculty of Engineering, South Eastern University of Sri Lanka, Oluvil, Sri Lanka

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Abstract

Resilience is a multifaceted phenomenon, and approaches to measure resilience across disciplines have produced wide-ranging methods. This paper presents an inclusive and adaptive '5S' social resilience framework that was developed based on the critical review of existing social resilience frameworks discussed in the literature. The proposed social resilience framework consists of five sub-dimensions of social resilience, namely, social structure, social capital, social mechanisms, social equity, and social belief, a set of 16 characteristics, and corresponding 46 indicators. While the key social resilience characteristics are integrated within a single framework, it is flexible enough for adapting to a specific context as needed. Key challenges in resilience measurement approaches developed in disaster management context are also highlighted in this paper. The direct measures of social resilience are resource intensive. Hence, proxy measures have been widely used using data available in the public domain which often result in inadequate measurement of social resilience. It is imperative to explore use of surrogates in measuring social resilience characteristics that are complex and not easily measurable directly.

Keywords community resilience, disaster management, disaster resilience, resilience assessment, resilience indicator.

1. Introduction

Over the past decades, natural disasters have continued to devastate many communities [1]. Significant investments in economy, infrastructure, and societal systems have been destroyed by natural disasters. According to CRED [2], globally over 600,000 people died, 4.1 billion people were

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