

A Framework for the Evaluation of Infrastructures' Serviceability

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Abstract : In 1994, Korea experienced a national tragedy of Seongsu Bridge collapse. The accident was severe enough to alert governmental officers to the problem of existing management policy for national infrastructures. As a result, government legislated the 'Guidelines for the safety inspection and test of infrastructure' which have been utilized as the primary tool to make decision for the maintenance and rehabilitation of infrastructure for last twenty years. Although it is clear that the guideline established a basics how to evaluate and manage the condition of infrastructures in systematic manner, it is equally clear that the guideline needs improvements in order to obtain reasonable investment decisions for budget allocation. Because its inspection and evaluation procedures mainly focused on the structural condition of infrastructures, it was hard to make decision when the infrastructures were in same level of structural condition. In addition, it did not properly reflect various aspects of infrastructures such as performance, public demand, capacity, etc., which were more valuable to public. Regardless of the importance, these factors were commonly neglected in governmental decision-making process, because there factors were somewhat subjective and difficult to quantify in rational manner. Thus, this study proposes a framework to properly evaluate the serviceability indicators using AHP and Fuzzy approach. The framework is expected to assist governmental agency in establishing effective investment strategies for budget planning.

Keywords : infrastructure, evaluation, serviceability, fuzzy

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