

An integrated FDM-ANP evaluation model for sustainable development of
housing community

王維民, Lee, Amy H. I., Chang, Ding-Tsair

Architecture and Urban Planning

Architecture

weiming@chu.edu.tw

Abstract

When sustainable development becomes the global trend on residential environment, the transformation of abstract concepts into practicable implementations is necessary. In consequence, an objective evaluation model on regional property needs to be established and carried out to examine the effectiveness and performance of local action. Because of the limitations of the small area and dense population in Taiwan, the development trend of the residential environment is toward multistory and high-density housing communities. This paper discusses the development characteristics and demands of a regional sector, and the fuzzy Delphi method (FDM) is used to extract the factors. To consider possible interdependencies among dimensions and among selected factors, the analytic network process (ANP) is used to create a quantitative evaluation model to convert the abstract concept of sustainability into an understandable network model for evaluating different development projects. Our objective and practical evaluation model can be used in related living environment planning fields, and it can be tailored and applied in other management studies.

Keyword : Fuzzy Delphi method (FDM), Analytic network process (ANP), Multi-attribute decision analysis (MADA), Sustainable development, Housing community