Optimal human resource allocation model: A case study of Taiwan fire service

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Abstract
A lack of government fund results in great different ratios of a firefighter to the population in major cities in Taiwan. The research proposes to develop an optimal human resource allocation model to strike the balance between the fire workforce and responsibilities in emergency responses. The DEA method is used to evaluate the organizational performance and determine the production efficiency of the fire services in Taiwan. Next, the Omit Resource Approach is used to determine efficiency improvement and resource adjustment to the fire department. Last, the research uses the Total Efficiency-Based Scale Approach to suggest an ideal human resource allocation model.

Keywords: data envelopment analysis (DEA), omit resource approach (ORA), performance evaluation, total efficiency-based scale approach (TEBSA), resource allocation, fire department.

1. Introduction
There are three major missions of fire department, the fire prevention, the disaster rescue, and the emergency medical service relating to the people’s lives, and the execution performance of the above-mentioned