

# A Study on Snow Removal Resources Distribution Method Suitable for Regional Characteristics of Korea

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## **(a) Purpose of study or research hypothesis**

To establish countermeasure for distribution of snow removal resources (human power, equipment, and deicers) to regional office of Korea Expressway Corporation.

## **(b) Key issue(s) or problem(s) addressed**

Although there are considerable differences in snowfall and snow removal operation amount with regional office of Korea Expressway Corporation, scientific analysis for snow removal resources distribution method had not been carried out.

## **(c) Methodology or approach used**

Data related with snow removal during recent 6 years were collected such as snowfall amount, road length, manpower and equipment related with snow removal, and used deicer. In order to find the adequate methodology applicable for diagnosis of current snow removal capabilities of the Korea Expressway Corporation, case study was carried out. Through some literature reviews, it was judged that the data envelope analysis (DEA) model was very appropriate to evaluate efficiency and capabilities of snow removal. In case of snow removal capabilities, more input of resources does not necessarily lead to higher efficiency in snow removal and less input of resources does not come with lower efficiency in snow removal, neither. As such, the DEA model is highly applicable where there is no causal link between input and output.

## **(d) Results or conclusions derived from the project**

Based on the results of efficiency values for each regional office showing 0.412~1.000, total 56 regional offices categorized into 3 groups; Lack, Moderate, and Sufficient, and required increase or decrease values of snow removal resources were proposed for each regional offices.

## **(e) Implications of the project relevant to congress themes**

In this study, snow removal resources distribution method was proposed to improve efficiency and to reduce winter disaster by climate change.

**Keywords** : Snow removal, Resources distribution, efficiency, Data envelope analysis