

**An Approach for Evaluating the Effectiveness of Railway Freight Transport in the Reduction of Logistics Cost & Carbon Dioxide (CO<sub>2</sub>) Emissions**

Guoquan LI

In the surface freight transport of Japan, the sharing rate of truck transport is overwhelmingly high. If some of those freights are shifted from road to railway, it will surely bring about a huge effectiveness in the reduction of logistics cost & carbon dioxide (CO<sub>2</sub>) emissions in transport industry. This paper focuses on the inter-regional surface freights in manufacturing industry. In order to evaluate quantitatively the utility of Japan railway freight, the reality of the railway freights is synthetically investigated, through the analysis of the freight situations of the shippers, service sphere of a rail freight station, the connecting relationships among regions and object rail line as case study, etc. In addition, the database concerning freight flows is developed. Using the criteria to judge the competitive ranges of railway freight based on the cost analytical models of previous study, the shipment freight distribution of station influence area in each region, which is suitable to railway transport, is clarified for object study line. Finally, the effectiveness in the reduction of logistics cost (economic effect) or the CO<sub>2</sub> emissions (social effect) by the railway line's transporting freight is preliminarily derived.