The Simulation for the Optimum Location in the Linear Approximation Method

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Abstract. This research is an attempt to explain the increase in delivery charges per unit of logistics companies and the limit to which they can bear increase in cost. It also examines the extent to which an optimum location can impact delivery price. In an actual company, the basic data that correspond to the optimum location model imply different kinds of difficulties from the qualitative aspect of using big data for AI applications.

This study is a basic theory of setting the delivery price by simulation of the optimum locations in a small area of Japan, and is a brand new method in the field.

Therefore, in this study, we examine the creation of zone maps, estimation of distance of the center of gravity, creation of zones, ℓk (carrying one liter for one kilometer) numerical calculation, calculation of distances between zones, simulation of optimum location, etc. We have attempted to study the approach for the optimum location problem. In other words, the purpose of this research was to propose the optimum location + α-type simulation problem, and clarify how it can be adapted to corporate practice and achieve realistic solutions and results, using the systematic theory and numerical results.

In conclusion, the proposed model is an effective model for determining the optimum increase in number when a new distribution center is constructed on the premise of the current distribution center, and it is necessary to obtain meaningful research results from this viewpoint. We make sure that we propose one of the most effective systematic models for realistic management decision-making.

Keywords: Optimum location, Site Selection Model, Feasible Solution, Delivery Price Elasticity, Simulation