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A novel mathematical model for group purchasing in healthcare

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Abstract

Supply chain management is a set of guidelines for integration of chains, which aims to diminish costs and increase system services to customers. One of the most substantial aspects for supply chain stockholders is purchasing requested items in a timely manner. Thus, a variety of models have been proposed as purchasing strategy in supply chains. Group purchasing is a system which encourages retailers to offer better discounts by ordering large quantities, which may leads to decline expenses, such as ordering, administrative, transportation and purchasing costs. This research suggests a modeling approach that develops a group purchasing organization (GPO) structure for a set of pharmacies in healthcare. The posed group purchasing model determines a cooperation strategy based on various factors, namely, purchasing cost, pharmacies distance and demand difference within a given group. Also, the proposed multi-objective model is optimized by goal programming. On the following of this research, designing a GPO structure for Chalus city pharmacies is investigated to illustrate the application of the proposed model.

Keywords: group purchasing, healthcare, multi-objective model, goal programming

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