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考虑DNCVaR-利润-客户满意度的分销网络设计多目标优化模型

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Multi-objective optimization model of distribution network design considering DNCVaR-Benefit-Custome satisfaction

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- 摘要
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全文: PDF (862 KB)   HTML (1 KB)   输出: BibTeX | EndNote (RIS)   背景资料

摘要 借鉴金融工程中条件风险价值理论, 提出了分销网络条件风险价值的概念和计算公式, 并用之度量分销网络风险水平. 构建了以DNCVaR、利润、客户满意度为目标的分销网络设计多目标优化模型, 该模型不仅能体现供应链核心企业风险偏好度, 而且还能解决分销网络风险水平-分销中心设立-分销中心购买量-分销中心服务对象-分销点购买量组合决策问题, 并应用多项式目标优化技术进行了多目标组合.这些工作为CVaR与分销网络设计优化决策类问题的结合研究作了有益的探索, 且算例的优化决策结果也说明了文中构建的模型能有效解决上述组合决策问题.

关键词： 分销网络设计   分销网络条件风险价值   多项式目标优化技术   多目标优化模型

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Abstract： By means of the theory of CVaR (condition value at risk) in financial engineering, the author proposed the concept and calculation formula of CVaR of distribution network, which was then utilized to evaluate the risk level of distribution network. A multi-optimization model of distribution network design taking DNCVaR, benefit and customer satisfaction as objectives was developed, which can not only reflect the risk preference of supply chain core enterprise, but also resolve combinational decision problem of distribution network risk level-construction of distribution center-purchase quantity of distribution center-serving object of distribution center-purchase quantity of distribution outlet. Based on polynomial optimization technique, this model can deal with the combination of multi-objectives. These work provide helpful exploration for both the CVaR and the decision-making problem of distribution network design optimization. The result of the optimization decision model of an example indicates that the model constructed in this paper can effectively resolve the combinational decision problem mentioned above.

Key words： distribution network design   CVaR of distribution network   polynomial goal programming optimization model of multi-objectives

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