

## **Integrated production/transportation planning decisions using possibilistic linear programming**

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### **Abstract**

This study develops an interactive possibilistic linear programming (PLP) method for solving the integrated production/transportation planning decision (PTPD) problem with imprecise objective and constraints in an uncertain environment. The proposed PLP method attempts to minimize the total net costs with reference to available supply, machine capacity, labor level and budget constraints at each source, as well as forecast demand and warehouse space at each destination. A systematic framework that facilitates the fuzzy decision-making process is designed; enabling a decision maker to interactively modify the imprecise data and related parameters until obtain a satisfactory solution. Additionally, an industrial case is used to demonstrate the feasibility of applying the proposed method to real PTPD problems and several significant features of the proposed method that distinguish it from the existing programming methods are presented. On the whole, the proposed PLP method provides greater computational efficiency and more flexible doctrines, and can effectively integrate producer/distributor relationships within a supply chain.

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**Keywords :** *Possibilistic linear programming, production/transportation planning decisions, supply chains.*

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