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Influence of Lateral Transshipment Policy on Supply Chain Performance: A Stochastic Demand Case

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ABSTRACT

Considering the supply chain consists of one supplier and two retailers, we construct the system's dynamic models which face stochastic demand in the case of non-lateral transshipment (NLT), unidirectional lateral transshipment (ULT) and bidirectional lateral transshipment (BLT). Numerical example simulation experiments of these models were run on Venple. We adopt customer demand satisfaction rate and total inventory as performance indicators of supply chain. Through the comparative of the simulation results with the NLT policy, we analyze the influence of ULT policy and BLT policy on system performance. It shows that, if retailers face the same random distribution demand, lateral transshipment policy can effectively improve the performance of supply chain system; if the retailers face different random distribution demand, lateral transshipment policy cannot effectively improve the performance of supply chain systems, even reduce system's customer demand satisfaction rate, and increase system inventory variation.

KEYWORDS

Supply Chain, Inventory System, Lateral Transshipment, Performance

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