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SUPPLY CHAIN INCENTIVE MECHANISM CONSIDERING SUPPLIER GREENNESS

Abstract:

The study of green supply chain has been paid to more and more attention. The incentive mechanism of supply chain in two-level supply chain system considering supplier greenness is studied. The two-level supply chain consists of a supplier and a manufacturer, and the manufacturer orders from the supplier according to the market demand function, which includes variables such as market size, retail price and greenness. Based on the game theory, the incentive mechanism of supply chain considering the greenness of suppliers is designed to achieve the coordination and cooperation of supply chain. In the case of decentralized control, the manufacturer dominates supply chain management, and the supply chain incentive mechanism considering supplier greenness is designed by using game theory. In the case of centralized control, the supply chain is managed by a central decision maker, seeking to maximize the total profit of the system, and the supply chain incentive mechanism considering the greenness of suppliers is designed using game theory. Numerical analysis is used to compare the decision parameters of the two incentive mechanisms, such as order quantity, wholesale price, retail price and expected profit of the supply chain system. The decision of the latter is better than that of the former, and the study shows that the latter can achieve supply chain coordination.

Keywords:

Green Supply Chain; Incentive Mechanism; Game Theory