

عنوان مقاله:

Supply Chain Coordination through Lead Time Crashing in a Socially Responsible Supply Chain Considering Transportation Modes and Carbon Emissions Tax

محل انتشار:

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خلاصه مقاله:

In this paper, a socially responsible supply chain consisting of one supplier and one retailer is proposed. The supplier decides on replenishment cycle multiplier and the retailer invests in corporate social responsibility (CSR) and decides on the order-up-to-level under a periodic review replenishment policy. The retailer's decisions impact on the supplier's probability as well as the supply chain. Therefore, the supplier proposes a lead time crashing contract to entice the retailer to participate in the coordination model. In this paper, the supplier can reduce the lead time by spending more cost and select a faster transportation mode. Two transportation modes (fast and slow) are considered in the proposed contract. By selecting a fast transportation mode, the retailer's inventory cost and shortage will be decreased. Therefore, the retailers' profit will be increased, while the lead time reduction cost and carbon emissions tax are imposed on the supplier under the lead time crashing contract. Numerical experiments and sensitivity analyses also show that the lead time crashing contract can coordinate the proposed model and the profit of supply chain and both members will be improved. Moreover, according to this contract the extra profit that is achieved from the coordination model is shared between both members of the supply chain fairly.

کلمات کلیدی:

Transportation modes, lead time crashing contract, supply chain coordination, corporate social responsibility, periodic review inventory system

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