论文

具广告效应的闭环供应链协调性能研究

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Coordination Performance of Closed-loop Supply Chain with Advertising Effect

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摘要 构建了一个具广告效应的闭环供应链博弈模型,研究广告效应对闭环供应链节点企业决策,以及闭环供应链协调性能的影响。首先,在集中决策、分散决策和广告合作决策三种决策模式下,分别探讨了节点企业的广告投入量、回收率和广告分担率决策,然后,分析了广告效应对各决策变量和利润的影响,最后,运用数值方法,从渠道效率和制造商/零售商收益分配比两方面考察了广告合作对闭环供应链的协调性能。主要结论为:1)广告合作可以增加广告投入量、回收率和节点企业的利润,从而实现闭环供应链的协调;2)节点企业的最优广告投入量、广告分担率、回收率和利润均与广告效应正相关;3)广告合作策略极大地提升了闭环供应链的渠道运作效率,降低了制造商/零售商的收益分配比。随着广告效应的增大,渠道运作效率会逐渐降低,而制造商/和零售商的收益分配比会逐渐升高。

关键词:　广告　闭环供应链　协调

Abstract：By using game theory, a closed-loop supply chain(CLSC) model with advertising effect is constructed to study the impact of advertising effect on decision-making efficiency and coordination performance of CLSC. First, Three different decision models, centrally coordinated model, decentralized model and advertisement cooperation model, are analyzed and the optimal advertising investment and return rate of waste product are studied and compared. Secondly, the impact of advertising effect on the decision variable and profit of the CLSC system are analyzed. Finally, the coordination performance of CLSC is studied from two aspects that are the channel operations efficiency and the division of the decentralized channel profits by using numerical method. The results show that. (1) Compare to the decentralized model, the return rate, advertising investment and the profits of node enterprise are higher in the advertisement cooperation model, that is, the advertising cooperation can coordinate the CLSC. (2) There is a positive correlation between decision variable, profit of the node enterprise and advertising effect. (3) The advertising cooperation can improve the channel operational efficiency sharply, and decrease the division of the decentralized channel profits between the manufacturer and the retailer. With the advertising effect increasing, the channel operations efficiency will decrease and the division of the decentralized channel profits between the manufacturer and the retailer will increase.

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