

# Coordination of dual-channel supply chain with perfect product considering sales effort

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## ABSTRACT

As more and more people use e-commerce for shopping, manufacturers are willing to open online sales channels in order to obtain more profits. This paper discusses a dual-channel supply chain (DCSC) composed of a retailer with a traditional channel and a manufacturer with a direct channel. In the external environment of uncertain market demand and defective products produced by manufacturers, manufacturers make efforts to promote online products, and consumers have free rider behaviour. Therefore, three game models under the leadership of manufacturers are established: (a) non-cooperative game model; (b) coordination model under revenue-sharing contract; (c) coordination model under profit-sharing contract. The results indicate that the product defect rate has a certain influence on channel pricing and sale efforts. The competition between the actors of the dual-channel is beneficial to the consumers who pursue the price. Considering the overall profit of the DCSC, the cooperation between the manufacturer and retailer is more profitable than the channel competition, and they are more willing to make product sale efforts. The retailer's expected profit under revenue-sharing contract is less than that under profit-sharing contract, but the total profit of coordination model is more than the latter.

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