

عنوان مقاله:

Efficient resource management and pricing in a two-echelon supply chain with cooperative advertising: A bi-level programming approach

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خلاصه مقاله:

The growing online marketplace has opened a plethora of opportunities for businesses across various industries. Manufacturers, seeking to bypass intermediaries and directly reach end-users, have been increasingly adopting online sales channels in addition to their traditional retail sales. A key challenge, however, lies in determining optimal pricing strategies and advertising investments for both manufacturers and retailers while considering various constraints. This study contemplates a two-echelon supply chain model involving one manufacturer and two retailers. The manufacturer sells its product both through retailers (offline channel) and directly to consumers via an online channel. The model features both global and local advertising. The influence of global advertising is realized through distinct advertising channels, each with a unique impact on demand. To further motivate retailers, the manufacturer contributes to the cost of local advertising. In response to these challenges, this research formulates a bi-level model and employs the concept of Variational Inequalities to solve it. The model also contends with production capacity and budget constraints, leading to a Generalized Nash-Stackelberg game. The validity of the model and the efficacy of the solution method are assessed through numerical experiments performed. Finally, a set of valuable managerial .insights are provided

كلمات كليدى:

Generalized Nash-Stackelberg Game, Variational Inequalities, Cooperative Advertising, Pricing, supply chain management

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