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Pan Liu

PII: S0959-6526(17)31477-4
DOI: 10.1016/j.jclepro.2017.07.049
Reference: JCLP 10051
To appear in: Journal of Cleaner Production

Received Date: 24 April 2017
Revised Date: 06 July 2017
Accepted Date: 07 July 2017


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Pan Liu
1 Economics & Management College, Henan Agricultural University, NongYe Road 63, Zhengzhou, Henan, China; hnycliupan@163.com
2 College of Mechanical Engineering, Chongqing University, Shazheng Road 174, Chongqing, China; hnycliupan@163.com
* Correspondence: hnycliupan@163.com; Tel.: +86-132-7192-8184

Abstract: In the Big Data era, targeted advertising develops to a more precise direction, and to improve their marketing accuracy and success rate, many enterprises begin to use it. However, the operation model of targeted advertising has changed. Meanwhile, for a green supply chain, products green degree is also an important factor in influencing sale. To study the pricing policies of a green supply considering targeted advertising input and products greening costs in the Big Data environment, a green supply chain with one green manufacturer and one retailer was chosen. Then, the operation model of targeted advertising in the Big Data environment was analyzed, and the demand function was revised. Based on these, four Game situations were proposed based on the Stackelberg game and Nash Equilibrium game theories and the change trends of prices with the green degree and the input level of targeted advertising were analyzed. Results indicated that the optimal retail price and the wholesale price had a negative correlation with the green degree and the input level of targeted advertising. In addition, the green manufacturer or the retailer as the leader will improve their own benefits, this shows that “first-mover advantage” is existing. For green supply chain members, this study offered a theoretical guidance on pricing policies considering targeted advertising and products green degree in the Big Data environment.

Keywords: pricing policies; green supply chain; targeted advertising; product green degree; Big Data

1. Introduction

With the popularity of the Internet and the rapid development of the Internet of Things (IoT) and the Cloud, global data are increasing rapidly. Meanwhile, the development of the Cloud and virtual storage will reduce the storage cost of Big Data [1]. These developments suggest that there are opportunities for the application and development of Big Data. Therefore, the era of Big Data has arrived. In the Big Data background, data as the indispensable raw materials of information economy [2] have penetrated into every industry [3], which is causing industry change, and green manufacturing industry is no exception.

Green supply chain is thought to be future direction of supply chain. Thus, establishing and
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