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考虑维修服务质量的产品质保联合决策

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Joint Warranty Decisions Research Considering Warranty Service Quality

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摘要 在售后服务竞争日益激烈的大环境下,维修服务对于企业的意义越来越重要。经典的质保决策问题通常关心质保期和产品价格的联合决策问题,本文在此基础上进一步考虑了质保维修的服务质量问题。质保期、产品价格以及维修服务质量在产品生命周期内存在动态的关联关系,目前同时考虑这三类因素的研究尚不多见。本文以具有重复购买行为的大众消费品为研究对象,构建了包括成本模型、需求模型、利润模型在内的最优控制模型,并应用最大化原理对模型进行求解分析,在此基础上进一步对最优策略在静态市场和动态市场的应用分别做了具体分析和数值试验。

关键词: 产品质保 服务质量 质保期 产品价格 重复购买 静态与动态市场 最大值原理

Abstract: Service quality becomes more and more important as after-sale service competitions become fierce in modern business. Scholars usually consider the joint decisions of warranty length and product price. In this paper, service quality decisions based on traditional warranty length and price optimization researches are concerned. Better service quality and warranty length can promote sales and raise the price. These three dimensions have dynamic relationship in product lifecycle, but few scholars consider them jointly. The market of consumer goods and developed optimal control problems including cost models, demand models and profit model were investigated in this paper. Manufactures' profit is optimized by choosing optimal service quality, price and warranty length jointly. The maximum principle method is used to obtain solutions. The optimal policies for static market were further investigated and Lingo11 was used to do some numerical tests for dynamic market. This research can help manufactures make better warranty policy and give consumers better warranty service.

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