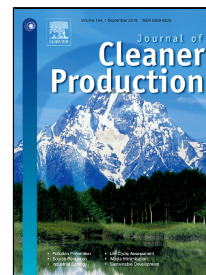


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Warranty as a competitive dimension for remanufactured products under stochastic demand

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Abstract: The importance of the environmental performance of products and the processes for sustainable manufacturing is increasingly recognized, which leads many enterprises to focus on remanufacturing. As a result of the high degree of uncertainty in quality, quantity, and time of end-of-life (EOL) or end-of-use (EOU) products, there are differences in the consumers' willingness to pay (WTP) for remanufactured products and new products. In order to improve the consumer satisfaction of remanufactured products and promote its sales, more and more vendors provide product warranty policy. As a kind of signal game, warranty mechanism can promote uncertainty product sales. This paper develops a newsvendor model which captures important features of remanufacturing system including demand uncertainty, consumer loss aversion, and consumer choice between new and remanufactured products. We show that consumer loss aversion has important influence to the decision-making of the manufacturer. Further analysis reveals that the manufacturer makes higher profits from warranty for remanufactured products. And as the degree of consumer loss aversion is higher, the manufacture usually charges lower prices for the products. Our numerical

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